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THE EFFECT OF SOCIAL CONDITIONS, PERCEIVED COMMUNITY POLICING ACTIVITIES, AND PERCEIVED RISKS OF VICTIMIZATION IN A MEGALOPOLIS

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Eui-Gab Hwang

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A MULTILEVEL TEST OF FEAR OF CRIME: THE EFFECT OF SOCIAL CONDITIONS, PERCEIVED COMMUNITY POLICING ACTIVITIES, AND PERCEIVED RISKS OF VICTIMIZATION IN A MEGALOPOLIS

By

Eui-Gab Hwang

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ABSTRACT

A MULTILEVEL TEST OF FEAR OF CRIME:
THE EFFECT OF SOCIAL CONDITIONS, PERCEIVED COMMUNITY POLICING ACTIVITIES, AND PERCEIVED RISKS OF VICTIMIZATION IN A MEGALOPOLIS

By

Eui-Gab Hwang

This study extends research on communities, crime, and quality of life beyond Western contexts in the course of developing a causal model of fear of crime in a megalopolis, Seoul, the fifth largest city in the world. It investigated four different conceptual models—the community context model, the community concern/control model, the victimization model, and the disorder model—for directional accuracy and ability to explain fear of crime. These conceptual factor models were tested in a causal frame. Building upon Ferraro's risk interpretation frame, perceived risk was considered as the major mediator between the conceptual predictors and fear, and behavioral adaptations were hypothesized as the response to fear as well as perceived risk. The community-context approach was extended to consider district conditions as macro-level predictors. The research focus of the community concern/control approach was given to the effect of citizen perceptions of community-policing activities on fear of crime.

To answer the research questions, this study combined census and crime statistics with survey data of 654 citizens nested in 25 districts in Seoul, the capital city of South Korea. Overall, results indicate that the community context model, the disorder model, and the victimization model are applicable in the Seoul context, while the community concern/control model, especially citizen perceptions of the formal social control dimensions do not play an important role in determining fear of crime among Seoulites.

Several sets of Hierarchical Linear Models revealed that district-level economic disadvantage, mobility, and crime were significantly positive predictors of fear. Unexpectedly, however, district-level population density was negatively associated with fear, which could be based on the distinct process of city development that Seoul has experienced. The results also revealed that citizen perceptions of formal social control dimensions such as perceived community policing activities and satisfaction with police were not influential. Interestingly, females expressed higher fear, more constrained actions, and more cautious behaviors, but age and SES were not significantly associated with fear and constrained actions. Structurally, perceived risks played a substantial role as a mediator between victimization and fear. In addition, behavioral adaptations were well explained as the response to fear. Policy implications for city development and community oriented policing are suggested, and the results are discussed in comparison to previous research in Asia and the United States and other Western countries.

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TABLE OF CONTENTS

LIST OF TABLES x

LIST OF FIGURES xi

CHAPTER 1
INTRODUCTION 1
1. Statement of the Problem 1
2. Importance of the Study beyond U.S. Context 7
3. Organization of Dissertation 11

CHAPTER 2
SOCIAL CONTROL AND POLICING AMONG KOREANS 12
1. Philosophy of Social Control 12
2. Modern Aspects 16
3. Policing in Korea 18
4. Crime and Fear of Crime 25
5. Applicability of Models of Fear of Crime 29

CHAPTER 3
COMMUNITY POLICING AND FEAR OF CRIME 36
1. Reform Models of Policing 36
2. Community Policing 40
3. Community Policing and Fear of Crime 44
4. Impact of Community Policing on Fear of Crime 49

CHAPTER 4
REVIEW OF THEORETICAL MODELS OF FEAR OF CRIME 52
1. Concepts of Fear of Crime 53
(1) Concepts 53
(2) Standard Measures 59
2. Models of Fear of Crime 61
(1) Personal Factors: The Victimization Model 62
Victimization 63
Vulnerability 65
Indirect Experience of Crime 73
(2) Community Based Factors of Fear of Crime 77
Theory in Brief 77
The Disorder Model 78
The Community Concern/Control Model 82
The Subcultural Diversity Model 87
The Community Context Model 89
(3) Implications for Research 94

CHAPTER 5
METHODOLOGY 102
1. Hypotheses 103
(1) Social Conditions and the Community Context Model 103
(2) Community Policing and the Community Concern/Control Model 104
(3) The Victimization Model 104
(4) The Disorder Model 105
(5) Perceived Risk, Fear, and Behavioral Adaptations 106
2. Data 107
(1) Survey Data 107
(2) Census and Crime Statistics 111
3. Measurement in the Study 112
(1) Endogenous Variables 112
(2) Exogenous Variables 117
(3) Control Variables 125
4. Analytic Strategy 127
5. Hierarchical Linear Modeling (HLM) Method 128
(1) HLM and Traditional Approach 128
(2) Data Structure for HLM 129
(3) Traditional Approach 130
(4) Advantages of Multilevel Analysis 133

CHAPTER 6
FINDINGS 137
1. Preliminary Statistics 137
(1) General Characteristics 137
(2) Bivariate Correlation 140
Citizen Level Correlation 140
District Level Correlation 144
2. Hierarchical Linear Modeling Analyses 145
(1) Model Building Procedure 145
Unconditional (one-way ANOVA) Model 145
Random Coefficient Regression Model 147
Fixed Effect Model (Full Model) 150
(2) Results of Analyses 153
Fear of Crime 153
Perceived Risk and Fear of Crime 157
Perceived Risk, Fear, and Behavioral Adaptations 161
(3) Summary of Findings 165

CHAPTER 7
DISCUSSION AND CONCLUSION
1. Discussion 169
(1) District Level Conditions and the Community Context Model 169
(2) Community Policing and the Community Concern/Control Model 172
(3) The Disorder Model 176

(4) The Victimization Model 177
(5) Perceived Risk, Fear, and Behavioral Adaptations 181
(6) Cross Level Interaction 182
2. Conclusion and Policy Implications 184
3. Limitations and Future Research 188

ENDNOTES 194

BIBLIOGRAPHY 198

LIST OF TABLES

Table 1: Administrative Districts, Population, and Sample Size in Seoul ····· 109

Table 2: Description of Variables····· 114

Table 3: Rotated Factor Matrix of Behavioral Adaptations ····· 116

Table 4: Factor Pattern for Social Condition Variables (N = 25)····· 118

Table 5: Individual Level Descriptive Statistics (N=654 in 25 Districts)····· 138

Table 6: District Level Descriptive Statistics (25 Districts)····· 140

Table 7: Bivariate Correlations between Fear and Citizen Level Variables····· 141

Table 8: Bivariate Correlations between Fear and District Level Variables ···· 144

Table 9: Decomposition of Variance and District Level Reliabilities····· 147

Table 10: Hierarchical Linear Models for Fear of Crime ····· 154

Table 11: Hierarchical Linear Models for Perceived Risk and Fear of Crime··· 159

Table 12: Hierarchical Linear Models for Behavioral Adaptations····· 162

LIST OF FIGURES

Figure 1: Risk Interpretation Model (Ferraro, 1995) 98

Figure 2: A Revised Causal Model 100

Figure 3: Population Density in Seoul 108

Figure 4: Population living in Poverty in Seoul 108

Figure 5: A Path Model of Fear of Crime (significant effects only) 166

CHAPTER ONE
INTRODUCTION

1. Statement of the Problem

Quality of life can be measured both subjectively and objectively. Fear of crime fits into the broad framework of subjective experiences, compared to objective indicators (e.g., economic levels). Since the President's Crime Commission Report in 1967 which suggested that a significant proportion of the population experiences crime-related fears on a regular basis (see Hale, 1996), fear of crime has become a serious issue for scholars and practitioners in the United States and in Eastern Asian countries such as Korea (Lee, 1997), China (Curran & Cook, 1993), and Japan (Ito, 1993). Despite the decreasing crime trend in recent decades, fear of crime in major U.S. cities remains consistently high (Lamon, 2000; Skogan, 1990) and crime and fear of crime shows consistently increasing trends in Eastern Asian countries (Ito, 1993; Joo, 2003; Lee, 1997). Taylor and Hale (1986) argued that increasing crime trends raised fear, yet fear did not necessarily decrease when crime declined. This suggests that the negative impact of crime endures once people sense crime prevalence. According to two public opinion polls conducted by the National Law Journal, only a third of the American public was "truly desperate" about crime in 1989 but more than sixty percent was in 1994 (Haghighi & Sorensen, 1996; Sherman, 1994), an indication that concern for safety and fear of crime has increased dramatically in recent decades. This situation is more so in Eastern Asian countries due to rapid urbanization that generates large social disorganization in urban communities. Cross-national comparison of official statistics showed that major crimes were substantially increasing in Korea and Japan (Joo, 2003), contrary to their decreasing

trends in the United States, which raised social concern for increased fear of crime among Koreans.

Following a Durkheimian notion of the role of fear for social reinforcement, there is a certain positive aspect of fear when it motivates citizens to shoulder some of the burdens of crime control and this leads to social solidarity by reinforcing the normative order (Garofalo, 1981; Moore & Trojanowicz, 1988). Yet, as Conklin (1975) notes, a general impact of fear is that it produces a series of undesirable social outcomes such as mutual distrust, decreased social interaction, and withdrawal of support of public and private activities such as crime control. Quality of life would not be high when people are worried that a stranger might hurt them on the street or at home. People in such situations may suffer from psychological discomfort and withdraw from community activities (Skogan & Maxfield, 1981). The National Crime Survey (NCS) data in the United States indicated that a majority of people limited their activities because of crime concerns (Garofalo, 1979), suggesting that restriction of behavior in relation to fear is a social problem. People may avoid certain routes, places, or transportation when they are afraid of crime (Box, Hale, & Andrews, 1988). This situation is also applicable in the Eastern Asian context due to the increasing trend of crime and fear of crime in recent decades (Joo, 2003).

More importantly, the impact of fear of crime on community life was so significant among people who perceived a high personal vulnerability (i.e., females or the elderly) that they did not walk, but instead drove, took an escort, avoided certain places, and carried something to protect themselves (Skogan & Maxfield, 1981). Such a passive life pattern among community members further deteriorated the community by

decreasing liveliness and integration (Kelling & Coles, 1996; Moore & Trojanowicz, 1988). Many scholars have singled out the negative aspect of fear as an interrupter of the quality of community life and informal social control, which is eventually responsible for community decline (Markowitz, Bellair, Liska, & Liu, 2001; Moore & Trojanowicz, 1988; Skogan & Maxfield, 1981; Taylor & Hale, 1986). In response, studies of fear of crime have become one of the main concerns of criminal justice academics and policy makers in recent years.

Extant literature on fear of crime has identified distinct frameworks or models. These models include the victimization model, the disorder model, the community concern/control model, the subculture diversity model, and the community context model (DuBow, McCabe, & Kaplan, 1979; Hale, 1996; Lane & Meeker, 2000; Taylor & Hale, 1986), which will be addressed in depth in Chapter 4. These models recognize direct and indirect victimization, individual characteristics, perceptions of disorder, informal and formal social control dimensions in the neighborhood, and community environments as factors of fear of crime. While the victimization model and the disorder model have often been tested, relatively less attention has been given to the community context approach and the community concern/control model. In addition, even though these conceptual models have been tested independently, little research exists to investigate the effect of these models simultaneously in a comprehensive causal frame. Even more rare is the literature regarding the effect of these conceptual models on fear of crime in non-U.S. settings.

The social contextual approach or the community context model addresses the role of neighborhood conditions on fear of crime (Cancino, 2002; Ross, Mirowsky, &

Pribesh, 2001). This social contextual approach emphasizes the importance of conditions of social units, in addition to the individual characteristics and perceptions of neighborhood quality of life, in explaining social disorganization that fosters crime and delinquency (Rountree & Land, 1996; Sampson & Groves, 1989), and that reduces citizen perceptions of security in communities (Skogan, 1990). Researchers have given attention to small units defending their choices on the basis of within-group homogeneity in street blocks, block groups, or census tracts that are similar on various census indicators (Wooldredge, 2002). Yet, the aspects of the social contextual approach deserve further testing in larger units. Since district or city-level environments are also an important part of the social context, there should be a certain amount of variation in behavior and perceptions that is explained by district or city-level conditions, in addition to neighborhood-level environments. As community environment is important so would be city or district level environment in explaining fear of crime. It is predicted that, in general, citizens living in a relatively disadvantaged and high crime city or district, would be more fearful of crime than those in a well organized and affluent city or district, controlling for community conditions, individual perceptions, and demographics. Formulating models to identify city or district-level predictors as well as neighborhood or community level conditions would help develop theories and policies for social control and safety enhancement in districts or cities.

In addition, in the community concern/control model, community concern for public social control as well as parochial and private level social control deserves special attention especially in relation to the police-initiated endeavors for community safety. The popular debate over the role of community policing in fear reduction could be

addressed in this regard. In addition to informal social control dimensions such as community cohesion and collective efficacy, citizen perceptions of public social control endeavors and confidence in public social control agents are among the predictors of fear of crime in this model (Box et al., 1988; McGarrell et al., 1997; Velez, 2001). Community-policing strategies and studies emphasize that residents can address problems of crime and fear of crime by securing ties to public officials and the police (Skogan & Hartnett, 1997; Velez, 2001), proposing a substantial role of police activities in communities to reduce fear of crime. The effect of community policing on fear of crime showed mixed results in the United States (Zhao, Schider, & Thurman, 2002). The western ideology of community policing was introduced as one of the most important reform programs in Korea, while its impact on crime or fear of crime has not been studied empirically in this cultural context. Considering the high priority of police work on community safety and quality of life, it would be helpful to empirically identify the role of community - policing activities on fear of crime especially in those countries that recently introduced Western forms of community policing.

Scholars have attempted to identify and test a causal frame to investigate the effects of multiple predictors on fear of crime. Early research explained the causal link between a position in social space (i.e., different life style, vocation, leisure), fear, and consequences of fear (Garoralo, 1981). Others modeled multiple predictors (e.g., personal and household vulnerability, knowledge of victims) that are structurally related to fear and in turn, responsive behaviors (Skogan & Maxfield, 1981). Criticizing these early causal frames due to their lack of testability, Taylor and Hale (1986) designed three separate causal models; the victimization, the disorder, and the community concern

models. In an attempt to link these models to test them simultaneously, Ferraro (1995) proposed one of the most comprehensive models in a testable format, but this model did not consider all predictors in theoretical frames. In addition, based on the reciprocal relationship between fear and constrained behavior, this model considered behavioral adaptations (i.e., constrained actions) as a predictor of, rather than a response to, fear. It is interesting to investigate how fear influences different types of behavioral adaptations (i.e., constrained actions, cautious actions, active defense), and to assess the ability of the causal frame in explaining fear after relocating all predictors based on conceptual or theoretical perspectives.

Finally, it is unclear if these fear of crime models are applicable in culturally different contexts due to the lack of empirical research beyond Western countries (some exceptions in Eastern Asian context include Curran & Cook, 1993; Ito, 1993; Lee, 1997; Lee, 1998). A study in a comparative context is beneficial to the field by extending the range of variation in crucial variables, testing the universality or robustness of initial findings, and exploring the boundaries of generalizability (Kohn, 1987). Even with these benefits, there exists little research for testing these theoretical models and the effect of social conditions and the effectiveness of police practice on fear of crime in Eastern Asian contexts. This study intends to fill this void by using a sample of citizens in Seoul, the fifth largest city in the world. A cross-national study is a challenge for scholars due to the difficulties of establishing both linguistic and conceptual equivalence in different countries (Shin, Putkowski, & Park, 2003). A test of Western theories and conceptual models in a culturally different context may help overcome some of these methodological difficulties and provide reliable results for comparative understanding of predictors and

levels of fear of crime. The value of conducting such a study is discussed in the next section.

2. Importance of the Study beyond U.S. Context

A study in a comparative context provides a useful method for generating, testing, and further developing theory as well as observing and explaining curious phenomena (Kohn, 1987), through comparative insight into historical, cultural, political, or economic idiosyncrasies. Such a study allows for exploring diversity, interpreting cultural or historical significance, and advancing theory (Ragin, 1994). Researchers look at how social structures affect people's lives by examining which of the many historical, cultural, political, or economic differences in different countries are relevant for explaining some unique patterns of theoretical issues, while they also extend the scope of knowledge by finding general patterns of criminological phenomena (Kohn, 1987). Fear of crime and the risk of criminal victimization are two types of phenomena that vary from country to country. Nieuwbeerta (2002) explained this disparity based upon the differences in individual life patterns, social and geographical constructs, and the practice of law enforcement policies. That is, life style and routine activities, social or cultural conditions, and the styles of policing in various nations affect crime rates and citizens' perceptions of safety. International comparative studies suggest that different countries share some aspects of fear and victimization, yet unique features exist. For example, people are less likely to avoid specific locations due to fear of crime in Asian countries than are citizens in Western countries (Vanderveen, 2000). Research on diverse ethnic groups in the United States illustrates distinct aspects of victimization, where Asian-Americans have consistently been ranked amongst the lowest in victimization rates compared to other ethnic groups (Poole & Pogrebin, 1990), due to their emphasis on

group solidarity and informal social control. Moreover, unlike other countries that have experienced rapid modernization and industrialization, in general, Asian-Pacific nations had relatively moderate increases in delinquency and crime rates (Curran & Cook, 1993).

Perceptions of law enforcement agencies as well as organizational features also differ according to cultural settings and environments. Compared to other immigrants, "Korean American immigrants distrusted and avoided the police because of their negative conceptions of and experiences with the police in their home country" (Poole & Pogrebin, 1990, p.90). Research on victimization, fear of crime, and confidence in police suggest that multiple cultural dimensions that influence the aforementioned conceptions may exist. Cultural differences in the presence of social controls, routine activities, or other phenomena may offer some explanatory value. Therefore, the issues surrounding fear of crime, features of social control, and other predictors are worthy of further discussion in the context of culture. Such a comparative approach would contribute to the existing knowledge base regarding fear of crime and victimization from a global perspective.

Societal differences in regard to the presence of social controls, cultural, or philosophical dynamics in South Korea may offer some comparative value. Compared to the United States, South Korea is homogenous—composed of one race, one language, and represented by one set of collective norms (Lee, 2003). This country was under the influence of Confucianism and Buddhism for several centuries, sharing this cultural tradition with China and Japan. Unlike the Western emphasis on values of autonomy, individualism, freedom from authority, and the presence of the strong public social control system (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Cao & Hou, 2001),

collectivism, respect of authority, the informal social controls of mutual sanctioning and shaming among residents characterize this cultural context (Asakura, 1998; Cao, Stack, & Sun, 1998; Kim, 1998). That is, social controls in Korean society were largely based on the constructs of moral socialization with origins of Confucianism. Conformity was produced through moral socialization (Yang, 2003), not via the deterrent effect of law. Confucian tradition still enjoys a dominant status among Koreans due to its lasting ideological tradition (Kim, 1998), despite the strong influence of the Christian right, Western ideologies and lifestyles, and perspectives or value systems of individualism.

In addition, South Korea is one of the most rapidly urbanizing countries, recognized as one of the four dragon states [1] in Asia in addition to Hong Kong, Singapore and Taiwan. Having emerged as an industrial giant in the second half of the twentieth century, South Korea is often referred to as the economic "Miracle of the Han-River" (Korea National Statistical Office, 2004). South Korea serves as an important research base to study the effect of social conditions and police practice on fear of crime, due to the rapid urbanization, increasing indicators of social disorganization, and consequently soaring crime in urban communities (Joo, 2003).

Moreover, the historical image of the South Korean police as frontline representatives of government authority raises noteworthy comparative issues regarding the effect of police practice (i.e., community policing) on fear of crime. Whereas the majority of citizens in western democracies may view the police from a functional perspective as the agency responsible for crime control, order maintenance, and citizen safety (Lab & Das, 2003; Sims, Hooper, & Peterson, 2002), this may be less accurate in developing nations. The distinct historical, political, and cultural traditions of many

developing countries, particularly those that experienced colonization and coup d'état, may portray police as controlled by the central government, serving the interests of the political elite (Lab & Das, 2003). South Korea seems to fit this pattern. The perception of the South Korean police force was largely shaped by its oppressive role at the time of Japanese colonization and by military coup (Pyo, 2001). The Korean War and subsequent regional division in the nation, as well as constant threats from the communist North, created a preoccupation with issues of national security (Kim, 2003; Lee, 2004). Accordingly, citizens often view the highly centralized South Korean police force as an agent of government bureaucracy. Due to the historical understanding of the role of police as a government arm, citizens may perceive it difficult to link police activities for community safety such as community policing to their perceptions of the quality of life.

In sum, the dimensions of effective facilitators of the quality of life vary from society to society due to the uniqueness in the process of developing philosophies and theories of social control. For example, informal social controls in Asian countries are based on moral socialization that emphasizes positive values and ethos. This is in sharp contrast to the emphasis on individualism, independence, and reliance on formal social controls in Western countries. Globalization, however, influences the norms and values of different cultures. Recent interest in reintegrative shaming, restorative justice, strong families, and community organization and collective efficacy in contemporary Western societies, for example, are equivalent to the Asian traditions of community based positive socialization and informal social controls. Numerous reform endeavors for criminal justice agents in Asian societies, on the other hand, popularized the programs of community oriented policing in these countries, which represents their efforts to learn

from the Western emphasis on the effective utilization of formal social control agents. It is also the case, however, that unique traditions still enjoy a dominant status in each country due to their lasting ideology, despite the strong influence of different cultures and lifestyles. It is believed that this empirical research focusing on the effects of social conditions and community-policing activities on fear of crime in the Seoul context will enable investigations into the cultural aspects inherent to Eastern Asian countries and into the situations of the rapidly developing countries.

3. Organization of Dissertation

The remainder of the current dissertation is organized into six chapters. Chapter two focuses on social control, both informal and formal, in the context of Korea. Applicability of theoretical perspectives developed and tested in the United States to Koreans is also discussed. Chapter three then addresses the connection between fear of crime and community policing. Chapter four reviews the models of fear of crime developed primarily in the United States. This chapter also considers various definitions and measures of fear of crime. Chapter five specifies the hypotheses to be tested, the methodological design, and identifies and defends the measurements of the independent and dependent variables. Hierarchical Linear Modeling (HLM) is also discussed in this chapter as the major analytic strategy. The major research findings are reported in chapter six, and the implications of the results are discussed in both theoretical and practical terms in the final chapter.

CHAPTER TWO
SOCIAL CONTROL AND POLICING AMONG KOREANS

1. Philosophy of Social Control

Every society induces or forces people to comply with social norms through formal and informal measures to maintain social order. In ancient East Asian society, moralist and legalist philosophers laid the foundation for societal controls with emphasis on the moralist approach of informal social controls based upon Confucian philosophy (Chen, 2002; Westermann & Burfeind, 1991; Young, 1942; Yusuf, 2003). Their emphasis on informal sanctioning, shame, and community level social control was different from legalists' emphasis on the evil nature of human being that should be controlled by strict rules of law, equivalent to modern public social control via the criminal justice system. Confucius's ideology for social control was represented in his famous teaching for governors (Jiao, 2004). He explained that if the rulers lead people with government measures and regulate them by law and punishment, they may avoid wrongdoings, but they may have no sense of honor and shame, and such a method of regulation takes people away from rulers. On the other hand, if the rulers lead them with virtue and regulate them by the rules of propriety of established morality, citizens obtain a sense of shame and set themselves right and come closer to the rulers.

This moralist tradition based on Confucian principles has been accepted as official philosophy in most Eastern Asian countries, including Korea, Japan, and China, and has dominated Eastern Asian culture for centuries. Also stemming from Confucianism tradition, law was perceived either as the second measure to be considered only when a person could no longer be cured by moral education or as the last line of defense for maintaining social order when a person does extremely immoral or serious

harm to the society (Jiao, 2004). Informal resolution of conflict and reliance on group or communal pressures in the service of conformity and compromise were valued over official regulation, since law was viewed as secondary to the collective moral principles of Eastern Asian countries under the influence of Confucianism (Jiao, 2004; Li, 2003; Yang, 1961). Confucius believed that the society could be maintained by establishing a moral conduct of respectability toward others and social orders (Wong, 2001; Yang, 1961). Therefore, traditional Confucian texts consist of colorful descriptions of how to be a dutiful child, an ideal wife, a loyal official, and even a benevolent ruler (Chen, 2002). It also emphasized reinforcement of the overall hierarchy in society by teaching people to recognize their position and role in family, community, and society. Ceremonial respect for ancestors was extended to parents, husbands, teachers, elderly, and public officials. People were encouraged to moderate their personal emotions, evade self-interests, and develop a sense of obligation to the family or group (Jiao, 2004).

The long historical process of Confucianization shaped the thinking of Koreans during the five centuries of the Choson dynasty (A.D.1392—1910), and it was reproduced in Korea's social and cultural transformations. This philosophy served as the basis for governing the nation and integrating society (Suenari, 1998). Unlike modern music ringing with dominant themes of personal emotions, ancient songs and poems were about the pleasure of serving the king, parents, and husbands. Until the end of the Chosun dynasty, songs and poems that did not hold these themes were considered lower quality works, representing a dominant cultural focus of society. Yoo (1998) recognized the key to the Korean Confucian system was the family. The elders of centric Confucianism educated their youth to conform to authority, elderly, and rules. The

family and group base of social support and control is still a dominant aspect of society in South Korea. Today, in everyday practice, Confucianism takes the form of etiquette and courtesy in interpersonal relations, unlike the emphasis of ceremonial worshiping from the past (Asakura, 1998). The cultural values of self-control and shame avoidance were linked to Confucian philosophy since shame or success was linked to the entire family (Suenari, 1998). Therefore, social control and social support are the result of the family, and community as the extension of it, even in the present day, leaving government sanction as a secondary measure.

Buddhism [2] provides another tradition of social control. According to Buddhist philosophy, one can control the mind and its contents by practicing sound mental habits, such as abandoning corrupt thoughts or impulse, recognizing them, and letting them dissolve naturally (Kim, 2003; Li, 2003; Yang, 1961). Buddha recommends meditation, or the emptying of the mind, as a way not only to cleanse unhealthy thoughts such as envy, violence, greed, or sexual impulse but also mental unease resulting from difficult situations or low social class. Furthermore, the belief of predetermined fate was foremost.

> "Everything is interconnected, and not only does the development of the child influence the formation of the adult within one lifetime, but what happens to one within this lifetime is due to one's behaviors and actions in one's past life; and similarly one's behaviors and actions in this life dictate what will happen to one in the next" (Kalupahana, 1976; Li, 2003, p.20).

Buddhism purports that one's current status is the result of previous conduct from a past life, and one's present behaviors and actions have profound consequences in the future. This ideology functions as a social control, since individuals who follow these teachings behave well in pursuit of the next life. The philosophy also contains profound moral

dimensions, such as not killing insects, because everything is interconnected and one will pay for one's misdeeds.

This religion played an important role in resolution of conflict through emphasis on conformance to status through persuasion under the guise that the actions and practices of today will influence tomorrow. Like Confucian ethics, Buddhism's influence has been a dominant philosophy among Koreans. Buddhists' determinism is still widespread in Korean society. Although younger generations have grown accustomed to Western materialism and individualism, they generally follow previous practices, such as visiting a fortuneteller to determine if their partner is the right person for marriage. It is also custom for Koreans to visit their ancestor's tombs for remembrance and good fortune. In addition, on Lunar New Year's Day, many Koreans visit websites or fortunetellers to seek their destiny of the upcoming new year. Many of these customs resulted from the philosophies of Buddhism and Confucianism. Some may argue that Koreans could be considered potential Buddhists as well as latent Confucians due to the influences of these philosophies on every day life, despite the strong presence of Christianity and Western individualism.

Kim (2003) noted that today's Confucianism survives largely as a set of social ethics emphasizing the importance of the family, education, loyalty, hierarchy, and propriety. Yang (2003) argues in this regard that Koreans cannot expect an autonomous or equal relationship between members and social relationships due to the strict hierarchical understanding of the social structure. In general, Korean youth, students and employees respect their elders, teachers, and employers regardless of their situation. Above all, the family has remained the dominating force of social controls while the

community structure, as the extension of the family, also provides social support or sanctioning of citizens. In contrast to the western ideology of freedom from authority, cultural tradition in Korea has long emphasized the value of conforming to authority and order, and avoiding conflict under the influence of Confucian moral codes (Joo, 2003).

2. Modern Aspects

The disruption of basic norms and structures of Confucianism and religious beliefs based on Buddhism occurred during Japanese colonization (1910-1945) and the Korean War (1950-1953). Industrialization following social upheavals invited Western norms and philosophies into Korean society. Korea began its journey from extraordinary emphasis on economic development; during the 1960s, the country achieved substantial economic growth, noted as the miracle of the Han River; during the 1970s, the country increased production and development (Asakura, 1998). Industrialization was accelerated by the community movement, known as "Saemaul Undong," which regulated shamans and other rituals while encouraging modern lifestyles and customs (Hidemura, 1998). The New Community Movement "Saemaul Undong" in Korea has been considered a successful example of a community development campaign in a developing country (Ito, 1998). The influx of people into cities from different regions has contributed to social disorganization, since people were severed from the intimate familial relationships and communal networks. South Korean economic development has displayed some modern features including rapid industrialization involving the progression from an agriculturally based economy to a diversified industrial base including heavy and chemical industry, electronics, and engineering and high technology products (Moran, 1998). This process of industrialization increased the number of

nuclear families in urban areas, since many citizens moved away from the intimate social ties with parents and community relatives (Hidemura, 1998). The socioeconomic gap in urban societies generated enmity amongst Koreans that was seldom experienced in traditional societies.

In addition, the generation gap widened in recent Korean society as the older generations who subscribed to Confucian norms, could not tolerate women or children smoking in public, students and youngsters antagonizing teachers or elders, aspects which developed as a result of the complexity and anonymity of urban cities coupled with the influx of the Western individualism and freedom from authorities (Inglehart, 1997). The effect of Christianity on Koreans' social lives was also important. Hidemura (1998) noticed that Christian churches offered substitute contexts to build new social networks especially in an urban community after Korean urbanites lost strong ties upon abandoning their hometown. Christianity-based Western values offered more equality and a sense of importance that Koreans could not find in the Confucian system (Lee, 2003). In addition, expansion of higher education was tremendous. In just eleven years (1971-1982), the number of students enrolled in four year universities more than quadrupled in Korea (Asakura, 1998). Based on extreme emphasis on educational success in Korea and other Eastern Asian societies, it is not surprising that students left behind become a major source of delinquency (Curran & Cook, 1993; Kim & Lee, 2003; Takahashi & Chang, 1985). The strain associated with failure is profound since only some of the students who take the admissions test are granted entrance to prestigious colleges in these countries (Curran & Cook, 1993; Kim & Lee, 2003). Chinese scholars realized that "students in such a situation lose care for good deeds as well as trust of educators, some of them turn

from single poorness in studies turn into double poorness of both in studies and in moral character, and furthered into law violators" (Curran & Cook, 1993, p.304; Zhou & Xia, 1988, p.4). This explanation is duly applicable in South Korea since the extreme strain for higher education is one of the biggest social issues in the country.

3. Policing in Korea

In contrast to the western principles of individualism and dependence on formal social controls, social control has traditionally relied upon community-based informal social control mechanisms in South Korea. Due to the long cultural tradition of moral governance and a relatively short period of development of the nation's modern legal system, Korea has established a criminal justice system that coexists with the informal social control system. The modern legal system recognizes the importance of rule of law, due process, protection of individual rights, and judicial independence and all police officers are required to possess a complete understanding of laws and procedures pertinent to police work through education and training (Yoon, 1998). However, whereas the majority of citizens in Western democracies may view the police from a functional perspective as the agency responsible for crime control, order maintenance, and citizen safety (Lab & Das, 2003; Sims et al., 2002), this may be less true in developing nations like South Korea. The distinct historical, political, and cultural traditions of many developing countries, particularly those that have experienced colonization and military coup, may lead to images of the police as controlled by the central government and intended to serve the interests of the political elite (Lab & Das, 2003; Hwang, McGarrell, & Benson, 2005).

A national modern police system was established in South Korea in 1894, when Japan and Western nations compelled Korea to open her borders. Prior to this, there was no national police organization and no clear distinction between the police and the military under the feudal system. Japan maintained and utilized extremely centralized, nationalistic, and a pyramid style police system to control Koreans and help enforce colonization during its occupation from 1910 to1945 (Park, 1988). Police substations throughout every corner of the country were the mainstream for the surveillance of citizens and for the deterrence of anti-Japanese movement (Park, 1988). Koreans perceived the police at this time as the frontline enforcer of colonization. After World War II and Korea's independence from Japan in 1945, the U.S. military was in charge of the establishment of new government and the police system. The national police system was still maintained for peacekeeping and order maintenance purposes. Historians understood that the U.S. military decided to maintain the national bureaucratic police system to ensure social order against leftists in the peculiar situation of the division of the country between Capitalist South and Communist North (Cummings, 1997). Due to this political situation, the focus of the national police was national security controlling leftists and political opponents. The regional situation also afforded power to the military, and South Korea was under military government until a civilian president and democratic government was implemented in 1993. The democracy, thus, has very short history in South Korea. The role of the police throughout the colonial and military regime was mostly to support the illegitimate ruling authorities (Hoffman, 1982; Hwang et al., 2005; Park, 1988). To overcome the oppressive image of the past and revive as an agency for the people, the police were compelled, encouraged, and motivated to shift their role from

government protector to citizen protector and service provider (Korea National Police Agency, 2003). As most countries in the developing world struggle to move from authoritarian policing to democratic policing (Davis, Henderson, & Merrick, 2003), South Korea has recently been through tremendous reform endeavors to establish community oriented police practices.

One of the most significant reform endeavors was the "Police Grand Reform" in 2000 (Pyo, 2002), which included both internal and external issues. Internal reforms included improved payment and work environment as well as encouraging bottom-up communication (Korea National Police Agency, 2002). After months of internal efforts to change the organizational culture from authoritative to democratic, external reform measures followed, which were directed toward improving the relationship between the police and citizens. External reform endeavors tried to eradicate the previous image of police as being unkind, unfair, and unfaithful (Korea National Police Agency, 2002; Pyo, 2002). Operational strategies to strengthen external relationships with the public included citizen police academies, community based patrol in partnership with volunteer residents working closely with the local police, and emphasis of a police role in domestic violence disputes and crimes against women/children (Pyo, 2002). Even though the reform initiatives were not strictly based on philosophies and models of community policing, they were considered as a general trend toward community policing, given the emphasis on enhancement of the public image of the police, community crime prevention through collaboration with voluntary citizens, and attention to traditionally ignored problems (i.e., domestic violence).

For continued reform, the police created the Police Reform Committee in 2003, which was composed of 18 external figures who were selected among experts in government administration and reform expertise (Korea National Police Agency, 2004). Reform programs included citizen boards for monitoring civil rights violations in the police organization, the recording and videotaping of the investigation of the child victims of sexual abuse to ensure protection, and the renovation of the police substation system. One of the most important products of the committee was the reform of a police substation system that had been utilized since the birth of the modern police without significant modifications.

South Korea has long maintained a police substation system as the bottom level main structure of the hierarchical system. These police substations are observed at every corner of the country and have been a major tool of social control since its introduction with the establishment of the modern police system during the 1890s (Hoffman, 1982). After the dark age of colonization and military dictatorship, this police substation system became a main post for community crime control. There were 2,944 substations throughout the country and about 44 percent of officers (39,988) were assigned to mini-stations in 2002 (Korea National Police Agency, 2003). This system is also observed in other Asian countries. Singaporean police posts and Japanese Koban are a couple of examples (Skolnick & Bayley, 1988). Substations in Korea, Japan, and Singapore were responsible for all aspects of policing except criminal investigation, including receiving complaints, responding to calls for service, providing information and advice, patrolling on foot or bicycle, organizing community crime prevention, and developing personal contacts (Korea National Police Agency, 2003; Miyazawa, 1992; Skolnick & Bayley,

1988). Foot patrols were the mainstay of patrol coverage in Korea, Japan, and Singapore up until the late 1980s (Korea National Police Agency, 2004; Miyazawa, 1992; Mizumachi, 1982), which was largely transformed to motor patrols since then. This multi-function of substations in Asian countries was different from those of the United States. Detroit's mini-stations, for example, did not conduct general police work but were responsible only for community crime prevention tasks (Skolnick & Bayley, 1988). In addition, the substation system in Korea illustrates some unique features due to its national identity. Although substations are spread across the country, officers working in the substations do not have much discretion. Often, several substations are commanded and controlled by a main-station and several police main-stations are directed by a regional police agency that is subordinate to Central Headquarters.

Recently, Korean police officials recognized some negative aspects of the historical substation and initiated changes in the system (Korea National Police Agency, 2004). Although it was commendable for substation officers to familiarize themselves with the people and problems in the neighborhood, multiple tasks in substations from bar regulation to traffic enforcement were responsible for police corruption and poor public perceptions of officers. The spread of officers throughout so many mini-stations often made it difficult to handle speedy, violent, and multi-jurisdictional urban problems. In many rural areas, officers had no choice but to stay in substations for administrative work without patrolling the neighborhood, due to the lack of officers. In addition, residents perceived police substations as a frontline of prior illegitimate ruling authority despite the nation's democratization. Recognizing this, the Korean police implemented reforms into the police substation system in 2003 in order to centralize the patrol system and to allow

substations to focus on community service functions, subsequently referred to as the "community policing system" (Korea National Police Agency, 2004).

In this system, every three to five substations were grouped together and most officers were assigned in a central station. The central stations, then, provided motor patrol while the substations provided office based community services (i.e., consultation, crime reporting, information exchanges). The substation system of the past was maintained only in limited rural areas and some urban areas. Although this system was equipped to handle some violence by dispatching several patrol units at the same time, the police recognized some negative effects of this system (Korea National Police Agency, 2004). A public opinion poll showed that response time became longer due to the broadened jurisdictions, while substations were vulnerable to law violators due to the minimized number of officers, and citizen perceptions of the centralized patrol system remained negative (Yonhap News, 2005). The Korean police have attempted to implement changes into the system to model Western influences, but difficulties lie in its programmatic approach due to some misunderstandings of community policing and cultural differences in police organizations. This parallels community policing in the United States and other Western countries that struggle with the problem of internal resistance and misunderstandings of the concept (Leighton, 1991; Manning, 1984).

In sum, despite the origins of the Korean police in the primary functions of community duty and protection of the village (Pyo, 2001), the role of police was complicated by its national history. Korea's colonization by Japan (1910-1945), coupled with military governments for much of the twentieth century, resulted in the police force having to play an oppressive role to serve the ruling powers that wanted to maintain their

authority by suppressing opposing citizens. College students and educated citizens accepted the need to resist unjust governments and historical records illustrate that many citizens considered it shameful not to resist such authority. Even after Korea's independence and democratization, due to the government priority of national security based on the country's regional division between the North and South, officers in the national police system possessing power and authority have dominated the public they are supposed to serve (Hoffman, 1982). Due to the constant threats from the communist North, the nation has been preoccupied with issues of national security (Kim, 2003). Thus, Korean citizens have perceived the police as a frontline representative of government authority rather than as a public protector of the people. This is important since an assumption of community policing requires that the public be willing to trust and work in conjunction with police (Manning, 1984), and share some of the responsibilities that come with crime prevention (Sadd & Grinc, 1994). In South Korea, one study noted that citizens still doubted the trustworthiness and fairness of police officers (Choi & Gy, 1997), and police officers also defined their relationship with citizens as being negative or hostile (Lee, 2002; Moon, 2004). Although South Korea has intensive community cohesion and collective efficacy, the historically negative image of police may launch a unique outcome regarding the impact of community policing on fear of crime and public satisfaction with police. For successful implementation of community support, it may be a prerequisite for South Korean police and many other Asian countries to shift the historical image of the police as a government arm toward a democratic role as the public partner or protector. Recognizing the necessity, political and police leaders have

implemented significant reforms based on a community policing model intended to change the image of the police to one of service to the community.

The impact of some Western programs of community policing in Korea (i.e., citizen police academy) on public satisfaction with police or fear of crime is not clear due to the lack of empirical research. Studies of community policing in the United States showed that the negative image of police among residents was an obstacle of community policing in some communities with historically poor relationship with police (Sadd & Grinc, 1994). This unique relationship between the police and the residents in South Korea provides a comparative context for the studies of the impact of community policing on public satisfaction with police and fear of crime. There are some positive aspects given that the government and citizens are acknowledging the role of Korean police as crime prevention professionals and the police are extensively being involved in designing new cities. As an example, Korean police have been introducing Crime Prevention Through Environmental Design (CPTED) methods in collaboration with other government agencies. The police launched a task force and are designing a crime prevention model in cooperation with the Ministry of Construction and Transportation to apply the CPTED methods to a newly constructed Pankyo City (Korea National Police Agency, 2005).[3] These extensive roles of police for community safety suggest a positive progress of policing toward the community in this country.

4. Crime and Fear of Crime

Using official crime data from Korea, the United States, and Japan, Joo (2003) observed that the overall crime rate of Criminal Code Offenses (CCO) in Korea has been relatively low over the past three decades. In 1990, "the overall crime rate per 100,000

people was the lowest in Korea (910) compared to the U.S. (5,820) and Japan (1,324) in major crimes" (Joo, 2003, p.250). He also indicated that during 1990-98, the crime rate of the CCO in Korea has risen steeply from 910 to 2,330, while that of Japan has risen moderately from 1,324 to 1,608 and that of the United States decreased from 5,820 to 4,616. Rapid industrialization and urbanization, from the 1960's until the 1980's, appear to be responsible for social disorganization and crime prone circumstances in society. In addition to the rapid urbanization, the Korean economic crisis in 1997, and the overall tough policies on crime (e.g., war on crime) in the 1990's, were responsible for dramatic increases in crimes reported to official law enforcement agencies (Jang, 2003; Yoon, 1998). Contrary to developed countries (e.g., the United States and Japan) that had already experienced industrial development accompanied by social changes, Korean society is in the process of changes in social demographics and circumstances through rapid industrialization (Hong, 2003), which appears responsible for the increasing trend of crime.

In addition to the official crime indicators, the victimization survey conducted by the Korean Institute of Criminology claims that "the victimization rate in Seoul is one of the highest among most metropolitan cities in the world" (Lee, 1997, p.318). As Joo (2003) argued, Confucian moral codes and collectivism in traditional agricultural society historically resulted in effective social control among Koreans. Confucianism based ethics, however, were very much disrupted during the social uprisings such as Japanese colonization (1910-1945) and the Korean War (1950-1953). Under this situation of norm disruption, rapid industrialization may again accelerate social disorganization in the urbanized Korean society, which may be responsible for the dramatic increase in crime.

Cho's (2002) descriptive study of 500 police officers and 304 citizens in a metropolitan city of South Korea suggested differences in the perceptions of police and citizens. Specifically, whereas the police expressed confidence in citizen's safety, citizens perceived that crime was widespread in their neighborhoods. Regarding victimization and fear of crime, Lee's (1997) review of the limited literature in Korea maintained that women were less likely to be victimized because of their decreased exposure to crime, since routine activities under the cultural tradition of Confucianism do not usually include going out at night. Korean women, however, were more fearful of crime than men according to the Social Indicators in Korea by the Korean National Statistical Office. Utilizing a sample of 528 Korean women residing in Seoul, Lee (1997) reported that 76 percent of the respondents felt somewhat or very unsafe while they were walking alone in their neighborhood at night. The majority (90 percent) reported that the probability of being a victim of street robbery at night to be somewhat or very high. The study included both global fear, "how safe do you feel while walking along in your neighborhood?," and specific fear "how likely do you feel that you might be robbed while walking alone in your neighborhood at night?" The results showed that specific fear was most influenced by indirect experience of victimization through acquaintances and the media, followed by satisfaction with community quality of life, and perceived seriousness of crime in general. On the other hand, global fear was explained by their perceived seriousness of crime problem, followed by satisfaction with community quality of life. Interestingly, neighborhood cohesion and perceptions of police ability and visibility were not significantly associated with global fear or specific fear of robbery. This is contrary to the general findings in Western societies where community cohesion

and confidence in the police related to the reduced fear of crime (Box et al., 1988; Velez, 2001). Historically and culturally constructed oppressive and authoritative aspects of public social control, along with the long tradition of informal social controls and corresponding insignificant role of other community organizations could possibly be responsible for the differences of fear of crime between Western and Korean societies.

In a similar cultural setting, research conducted by the Research Institute of Public Security in China, out of 12,652 citizens in 15 provinces, autonomous regions and direct jurisdiction cities, Chang (1990) found that almost 50 percent of respondents reported that they were afraid of going out alone at night. The fear of property crime was highest, followed by violent crime and assault. Interestingly, only 19 percent of citizens responded that they would go to police officers for help when they perceived their personal safety (or the safety of relatives or property) was at risk. However, the majority (70 percent) stated they would report victimization to the police. Respondents reported that enhanced patrol, enforcement of justice, and helping and educating youth and juvenile delinquents to be the preferred approaches to enhancing safety.

Utilizing survey data from 15,000 citizens throughout China, conducted by the Chinese Ministry of Public Security, Curran and Cook (1993) reported that juveniles in China have a greater fear of crime than their elders. Unlike the Western cultures, age was negatively associated with fear of crime. Comparing ages from 29 to 45, 46 to 60, and 61 years and above, those from the 16 to 28 age group had the highest fear of murder, rape, assault, robbery, and hooliganism. Also, these juveniles' general sense of safety was lower than the average of the nation. The authors attributed this to the fact that contemporary Chinese youth are mostly residing in an urban society where crime is high.

Statistics also reveal that homicides, rapes, and assaults increased dramatically among juveniles, whereas overall crime rates stayed low. Another possible explanation, however, could be related to the Confucian-based long history of respect of the elderly. That is, Chinese and Korean elderly may perceive less vulnerability than their Western counterparts due to cultural taboos.

In another similar cultural context, Ito's (1993) literature review showed that fear levels were considerably higher than actual crime rates in Japan. Contrary to the general belief that Japan's crime rates were lower and more stable than those in other industrialized countries, perceived fear was substantially high. Among predictors of fear of crime, women were more fearful of crime than men but the effect of age was mixed. Interestingly, fear level for several specific crimes were generally lower in megalopolises and small cities and higher in large cities, middle scale cities, and farming districts. It was interpreted that in farming districts, larger populations per police officer and lower levels of patrol activities by police were responsible for higher levels of fear, while in megalopolises, higher levels of police forces and activities helped reduce fear of crime, despite many other factors seen as increasing fear. As Ito (1993) admitted, however, lack of empirical research in Eastern Asian contexts makes it difficult to conclude the directional accuracy and the magnitude of predictors of fear of crime in this cultural context.

5. Applicability of Models of Fear of Crime

A number of the models of fear of crime in major Western countries appear to be applicable in the South Korean context. Traditional emphasis on informal social controls and collectivism, coupled with historically negative perceptions of the role of the police

may result in different patterns of fear of crime in Korean context, however, compared to the Western context that has emphasized the role of public social control, individualism, and equal rights in social life.

The victimization model considers prior experience with victimization, awareness of victimization of close people, and vulnerability as factors of fear of crime (Hale, 1996). In general, variables of physical vulnerability include gender and age, while those of social vulnerability include low socioeconomic status and racial minority status. Since South Korea maintains racial homogeneity, social vulnerability as a racial minority is not applicable in this context. Yet, gender, age, and socioeconomic status account for some distinction in this country. Under the Confucian tradition, women were largely perceived to be subordinate to men, while the elderly were highly recognized in society. It is not only the physical vulnerability of women or the elderly that is generally perceived among Western scholars, the low social status of women and the higher status of the elderly in the Korean context suggest that these variables would have distinct effects from that of Western societies. Women may perceive fear due to their social as well as physical vulnerability. For example, Korean newspapers distributed the story of two women who were hit by a street vendor because they were smoking on the street (Yonhapnews, 2005). The street vendor argued about women smoking in public while he was arrested by the police. This is a current theme in modern Korean society, which signifies the social vulnerability of women due to the traditional Confucianism-based male domination in society, where quiet and obedient women have been valued. Confucian culture is characterized by patriarchal family structure where females are socialized to be passive or docile, which makes them socially as well as physically vulnerable (Lee, 1998).

On the other hand, the Korean elderly enjoy their social status compared to their counterparts in Western society. Korean culture teaches young people to respect the elderly, and to treat elders with politeness and honor (Lee, 1998). Even under the strong influence of individualism and equal treatment of social status of Western values, Korean's believe the elderly should at least be prioritized for general social activities. For example, it is often noticed that the young usually yield their seats to the elderly in public transportation. This high status of the elderly may provide them with a sense of safety despite their general physical vulnerability. The previous finding of the negative association between age and fear of crime in China (Curran & Cook, 1993), which is contrary to general findings in Western countries, may be due to the high social status that the elderly enjoy in a Confucian culture.

Regarding social vulnerability, factors in Korean context may include education and socioeconomic status. Official statistics generally suggest that Korean society was less successful in reducing the unequal distribution of income during the rapid economic growth period and the level of poverty has risen due to the dramatic increases in unemployment (Lee, 2003). The heavy concentration of wealth in a small proportion of people is considered a major obstacle to the further enhancement of the quality of life since lives of the poor are at risk due to the minimal social security system in Korea (Lee, 2003). Also, as previously discussed, reliance on social achievement through education is a phenomena that Korea and other Eastern Asian countries hold (Kim & Lee, 2003). It is important to note in this regard that Korean society is very hierarchical not only in gender and age-related relationships but also in other social aspects that include educational and income status. Challenges to the socioeconomic hierarchy are not

culturally tolerated. This hierarchical social relationship structure may render those of low educational background and income more socially vulnerable than their counterparts in Western societies.

Indirect experience of victimization through conversation with friends, relatives, and other acquaintances is also considered a general factor of fear of crime in Western literature (Hale, 1996). The strong dependence on informal networks due to the family centric group life in Korean society may allow the spread of victimization news faster and more intensely than in Western societies. That is, this integration through familial and communal networks may act as a basis of the spread of crime news. Also, previous research indicates that the Korean society has rapidly mobilized through cell phones, the Internet, and other high technology measures (Kim, 2003). Thus, family and community based every day interactions, along with the modernized aspect of high accessibility to news media in Korea, suggest that the effect of indirect victimization through family and community networks as well as the media would have substantial impact on their fear of crime.

The community control/concern model posits that perceptions of informal social controls and public social control dimensions in communities are linked to people's fear of crime. Since the traditional social control practice has relied heavily on informal sanctioning and social shame that were linked to people's endeavor to maintain a good family name, perceptions of such traditional norms may be significantly associated with people's fear of crime. The role of Christianity for social networks in urban Korean societies needs attention in this regard. The church consists of more than believers and is a place where people interact closely as in previous traditional societies (Kim, 2003).

Their integral relationship is considered a substitute of the traditional familial community. Such a network would also function as an inhibitor of fear just as community integration does in Western societies (Gibson et al., 2002; McGarrell et al., 1997), suggesting that the role of family-like Christian networks in Korean cities could be studied in relation to the community control/concern model. However, different from the Western notion of public social control, Koreans have perceived the public social control system as an arm of government authority to supervise citizens (Hoffman, 1982; Pyo, 2001). In general, confidence in the police and perceptions of police activities were helpful in the reduction of fear in Western societies (Moore & Trojanowicz, 1988; Velez, 2001), but this may not be true in the Korean context where distrust of the police has been largely distributed among citizens due to the oppressive role of the police in colonization and military regime (Hoffman, 1982; Lee, 1990). The innovation to change the police as a function for the people and the community has been in process. The success of this endeavor could at least boost the image of police as guardians and protectors of the citizenry, though further investigation is needed.

The disorder model and the community context model appear to be applicable in the Korean context in light of the country's rapid urbanization. As social disorganization theorists explain, rapid industrialization in Korean society has generated problems of disorder, economic gap, and instability in urban societies even though racial heterogeneity was not an issue. As a result of urbanization and westernization, disruption of informal norms of traditional shaming and sanctioning capacity has become a social problem in Confucianism's conservative society. Since people have been under the influence of the conservative norms, the impact of juveniles' resistance against parents,

elderly, teachers, and government officials has been enormous for the general public, when people started to experience a symptom of social disorganization throughout the urban development process. Therefore, people's perceptions of disorder as well as community indicators of concentrated disadvantage (e.g., poverty, unemployment, etc.) and crime rates may be responsible for the increased fear of crime in Korea. The impact may be stronger in this cultural context due to the traditionally conservative social atmosphere.

Most Western models of fear of crime appear generally applicable in Korean society. However, social control processes and modernization affecting Korea, that differ from general social control processes in Western societies, suggest that the effect of some predictors of fear of crime may have different directions or magnitudes. Consequently, comparative study would be beneficial to both theoretical and policy understanding of fear of crime. In addressing crime and fear of crime, it appears that progress in the west derives from both public social controls and development of community mobilization. At the same time, Eastern Asia lost much of her informal sanctioning capacity through the process of establishing a formal social control system. Maintaining informal social control networks would be valuable in Korea as it pursues globalization or Westernization. Finally, research in a comparative context could present a model containing multiple predictors of effective social controls as well as the reduction of fear of crime.

In sum, this chapter indicated that social controls in Korean society were largely informal in nature due to the origins of Confucianism and Buddhism, compared to the emphasis on public social controls in the United States. It was realized that this society

was still maintaining such a tradition even under the processes of industrialization and globalization. In addition, citizens perceived the police as representatives of government authority in Korea, compared to the view of the police as crime controllers in the Western society. Even though it was difficult to discern the directions and magnitudes of factors of fear of crime in the Korean context, a number of the models of fear of crime developed in major Western countries appeared to be applicable in this cultural context. Some unique aspects were discussed (i.e., age, public satisfaction with police) regarding fear of crime among Koreans. The next chapter will address the connection between fear of crime and community policing.

CHAPTER THREE
COMMUNITY POLICING AND FEAR OF CRIME

1. Reform Models of Policing

Research on the effectiveness of traditional policing, increasing crime and fear of crime, and hostility between the police and the community led to a new style of policing. New styles emerged as a reaction to historical demands. These reform models included team policing, zero tolerance policing, problem oriented policing, and community oriented policing.

Team policing was one of the earliest strategies to bring police closer to the public. The concept of team policing, though adopted by only a small number of agencies, became the buzzword of the 1970s (Riechers & Roberg, 1990, p. 106). A report from the Presidents Commission on Law Enforcement and Administration of Justice in 1967 proposed the implementation of team policing (Palmiotto & Donahue, 1995). The premise behind team policing was that units of police officers, consisting of five to fifty officers in a group assigned to a geographic area, working toward commonly defined goals in a cooperative effort can provide more comprehensive police service. Teaming was an innovation that enabled police personnel from various divisions to participate as full partners in the development of a superior police service. The concept of team policing included increasing familiarity with neighborhoods which would provide police officers a sense of personal responsibility, and, in turn, the community's familiarity with the officers would breed trust and cooperation, as well as the community's sense of responsibility for crime and social problems (Riechers & Roberg, 1990, p.106). The major elements to this strategy included "stable geographic assignment, decentralized authority, emphasis on community relations, emphasis on crime prevention, improvement

of internal communications, and reduction of reliance on department specialists such as centralized detective units" (Wasson, 1977, p.23). Although some studies on team policing experiments illustrated a reduction in crime and improvement in community relations (Bloch & Specht, 1973; Bristow, 1969), the results were different depending on management strategies and quality of personnel (Wasson, 1977). This strategy was typically supported by chief administrators, but middle management resisted due to a substantial reduction in their authority as a result of decentralization (Wasson, 1977). Team policing failed because it required restructuring of the organization on a massive scale in a dominant bureaucratic environment, which resulted in internal resistance and the decline of this strategy in late 1970s (Rosenbaum & Lurigio, 1994).[4] Despite the failure of the team-policing concept in some organizations, the idea of a community context of policing remained strong (Allen, 2002). It is worth noting, therefore, that the elements of team policing have been encompassed in the later reform trend of community policing (Riechers & Roberg, 1990).

Wilson and Kelling (1982) developed the 'broken windows' theory, also known as, 'order maintenance' or 'quality of life' policing, which emphasized the importance of disorder rather than serious crime. Left uncorrected, signs of physical decay (i.e., broken windows, dilapidated buildings, graffiti, etc.) and social disorder (i.e., public drunkenness, street beggars, delinquent teenagers, etc.) invites widespread disorder, sending a message of tolerance, which breeds more serious types of crime (Skogan & Roth, 2004). In turn, frightened law abiding citizens avoid the area or move out, buildings deteriorate and become vacant or are occupied by the disorderly and the criminal element (Skogan & Roth, 2004). Disorder is directly linked to the fear of crime. Broken windows

symbolized physical and social disorders that foster fear of crime as well as criminality, lead residents to withdraw from the public life of the neighborhood, resulting in the reduction of the efficacy of informal social controls (Greene, 1999; Herbert, 2001; Walker & Katz, 2005). According to the notion of the feedback loop, a decrease of informal social controls will eventually attract more serious offenders (Herbert, 2001). In other words, broken windows theory holds that if not firmly suppressed, disorderly behavior in public will frighten citizens and attract predatory criminals, thus increasing fear and leading to more serious crime problems (Greene, 1999). Broken windows theory resulted in several models of policing including zero tolerance policing and problem oriented policing. Zero tolerance policing was implemented in 1993 in New York City. The key notion was that serious crime problems may be quelled by mounting a large scale attack on petty crimes and disorderly conduct through a zero-tolerance strategy (Greene, 1999). Broken windows redirected the attention of police from a historical emphasis on serious types of crime toward disorder or misdemeanor violations in an effort to reinstitute mechanisms of informal social controls. Zero tolerance differs from community policing since it turned more exclusively to the police to solve disorder problems by, for example in New York City, arresting individuals such as farebeaters (avoid paying to ride the subway) and squeegee men (wash cars without being asked and force to pay) (Skogan & Roth, 2004). New York subsequently experienced a dramatic decrease in crime after implementing this strategy, yet police organizations experienced a dramatic rise in complaints by encouraging officers to be overly aggressive (Greene, 1999). This, in turn, often negatively affected police community relations (Walker & Katz, 2005).

Herbert (2001) explained that broken windows policing dominated due to three main reasons "police culture and organization, wider cultural understanding of crime and deviance, and political dynamics" (p.446). The police preferred the broken windows approach to community policing because of the emphasis in the police subculture on masculinity to enforce the law bravely and morality of good guys to punish bad guys; the cultural understanding of crime as a result of too lenient or faulty mechanisms in the criminal justice system; the breakdown of informal social controls; and finally, political preference to allow state actors to justify being tough on crime (Herbert, 2001). Green (2004, p.48) also argued that "many police agencies have shifted toward zero tolerance policing and it is not clear whether the police identify them with community facilitation and partnerships or with the suppression of social disorder, or both."

Broken windows theory also supported the notion of problem oriented policing that had been advocated by Herman Goldstein (1979). Goldstein argued that the police should take categories of crime and disorder and break them down into discrete problems and then develop specific responses to each problem, since the root causes and dimensions would vary. This concept emerged due to the necessity to identify and analyze problems, develop and implement strategies, and evaluate their effectiveness (Jiao, 1998). This was a reaction to the dominant means over ends syndrome, where police focused on organizational changes and operating methods rather than the substantive outcome of their work (Goldstein, 1979). Goldstein (1979, p.238) thought "the failure of team policing was due to a focus on secondary considerations" such as organizational change with a management dominated concept of police reform without concentrating on problems to be solved. To develop a more systematic process for

examining and addressing problems in communities, problem oriented policing was typically implemented through a four-stage process known as scanning, analysis, response, and assessment (Eck & Spellman, 1987). They initiated systematic research and evaluations, focused on crime prone locations, and designed crime specific intervention strategies to handle repeat victims and recurring problems. Unlike community policing, the goal of problem oriented policing does not necessarily include building a close relationship with citizens but serves to reduce problems of concern to the public where the community partnership is merely an element of that process (Eck & Spellman, 1987; Jiao, 1998; Walker & Katz, 2005). Problem oriented policing is often confused with the process of problem solving in the course of community policing. The initial concept of problem solving in community policing tended to be small in nature because it was a neighborhood level strategy but was broadened to include all elements of problem oriented policing, which became an important part of community policing (Cordner, 1998; Walker & Katz, 2005). Emphasis on community policing regarding the permanent assignment of officers to a particular neighborhood to instill geographic ownership and responsibility, is often considered a significant difference between the two policing strategies (Benson, 2004; Trojanowicz, Benson, & Trojanowicz, 1988). In practice, problem oriented policing can be implemented alone or as part of community policing (Walker & Katz, 2005).

2. Community Policing

The concept of community policing in the United States began with the community relations programs of the 1950s and 1960s that were developed to increase interactions between minorities and the police, and continued through the 1970s with the

concept of team policing (Greene, 1987). Community policing contains the basic strategy of Peel's philosophy and practices adopted by police in the United States in the nineteenth century (Eck & Rosenbaum, 1994; Leighton, 1991; Peak et al., 1992). That is, contrary to the general notion of community policing as a new approach, it was considered a reemergence or renewal of former approaches in the London Metropolitan Police Department (Leighton, 1991; Thompson, 1991). A comprehensive theory of community policing has yet to emerge and is theoretically an undeveloped set of policing principles and practices (Leighton, 1991).

Trojanowicz (1994), however, has stated that normative sponsorship theory and critical social theory are the bases of community policing. "Normative sponsorship theory emphasizes problem solving through shared values and a community of interest and critical social theory requires enlightened and empowered citizens and police officers so that emancipation results" (Trojanowicz, 1994, p.258). The ideology maintains that the relationship between the police and the community has an effect on crime, and police access to the community can serve as a vital link in restoring a traditional sense of community (Goldstein, 1987; Trojanowicz et al., 1988).

In addition to community partnerships, both problem oriented policing and broken windows policing provide the root philosophy of community policing. Problem oriented policing became an important part of community policing for its attention toward the root causes of crime as well as chronic or repeated problems (Goldstein, 1987; Walker & Katz, 2005). Building upon the theories and research of Goldstein, Wilson and Kelling called for the police to focus upon quality of life issues and to increase order maintenance activities rather than diverting all the attention to felonious crimes (Perez & Shtull, 2002).

Adams, Rohe, and Arcury (2005) considered social disorganization as another basis of community policing. The social disorganization theory posits that neighborhoods with high residential mobility, heterogeneity, and a large socioeconomic gap formulate social disorganization in the community, such as weak institutions, a low level of social cohesion and efficacy, which make it difficult to enforce both formal and informal social control over residents and strangers (Adams et al., 2005; Sampson & Groves, 1989; Shaw & McKay, 1942). Increasing community collective efficacy, therefore, leads to a decrease in incivilities and results in low level of fear of crime and a high level of attachment to the local community, and eventually provides a community with more effective social controls.

There is confusion in the use of the term "community policing." It has often been utilized to describe programs for police-community relations, team policing, foot patrol, or unit beat policing (Manning, 1984). Trojanowicz and Bucqueroux (1990) emphasized, however, that unlike earlier reform efforts, community policing is value based rather than solely programmatic.

It is defined as:

> ... a new philosophy of policing, based on the concept that police officers and private citizens can work together in creative ways to solve contemporary community problems related to crime, fear of crime, social and physical disorder and neighborhood decay. The philosophy is predicated on the belief that achieving these goals requires that police departments develop a new relationship with the law-abiding people in the community, allowing them a greater voice in setting local priorities, and involving them in efforts to improve the quality of life in their neighborhoods (Trojanowicz & Bucqueroux, 1990, p.5).

Synthetically, "... is both a philosophy and an organizational strategy that allows the police and community residents to work closely together in new ways to solve the problems of crime, reduce fear of crime, and improve neighborhood conditions"

(Trojanowicz et al., 2002, p.37). In short, these definitions outline the idea that the police initiate problem solving approaches in partnership with the community to improve quality of life and prevent crime.

Among the three primary and interrelated functions including crime control, order maintenance, and service provision, the professional policing model focused primarily on crime control while the community policing model broadened the scope and placed an equal emphasis on all three activities (Scheider, Rowell, & Bezdikian, 2003; Zhao, Scheider, & Thurman, 2002). The goals of community policing often include reducing fear, enhancing public satisfaction with the police, and deterring crime through problem solving (Goldstein, 1987; Trojanowicz & Bucqueroux, 1990). That is, while the police have traditionally defined their primary mission in terms of crime control, community policing expands the role of law enforcement to include such issues as "fear of crime, order maintenance, conflict resolution, neighborhood decay, and social and physical disorder as basic functions" (Walker & Katz, 2005, p.313).

Community policing rearranges priorities among functions and adds new ones (Eck & Rosenbaum, 1994). Fear of crime was well recognized as one of the major goals of community policing where changes are being implemented that are designed to be more responsive not only to crime, "but to the fear of crime, more broadly, to a wide range of problems that affect the quality of life in our urban areas" (Goldstein, 1987, p.7). In addition, social and physical disorder are important foci of community policing as some of the root causes of serious crimes (Wilson & Kelling, 1982) as well as the facilitators of fear of crime (Skogan, 1990). The objectives of community policing include reducing fear of crime and increasing community cohesion in part through

decreasing physical and social disorder (Lanier & Davidson II, 1994), which is consistent with broken windows theory that community informal social control is enhanced by handling disorderly matters.

Together, these goals are intended to achieve an often unstated but important goal of community policing, which is crime prevention (Riechers & Roberg, 1990). In sum, the goals of fear reduction and public satisfaction with police are achieved through enhancing informal social control (i.e., facilitating community institutions, building collective efficacy, and increasing social cohesion) and order maintenance (i.e., handling social and physical disorder). Although prevention was an explicit community policing goal, though rarely the first priority (Roth et al., 2004), this process eventually is intended to have a long term effect on crime (Riechers & Roberg, 1990).

3. Community Policing and Fear of Crime

In the mid 1960s, as the crime rate began to increase sharply so did public fear of crime in the United States (Walker & Katz, 2005). As noted earlier, the President's Commission on Law Enforcement and Administration of Justice in 1967 regarded fear of crime as a major social problem. Scholars recognized that fear of crime created community deterioration where citizens were unable to exert informal social control, which eventually increased crime. Skogan's (1986) explanation of the feedback mechanisms of community deterioration as a result of fear included—physical and psychological withdrawal from community life, a weakening of the informal social control processes that foster crime and disorder, a decline in community organization and mobilization capacity of the neighborhood, deterioration of business conditions, production and invitation of delinquency and deviance, and further dramatic changes in

the composition of the population. Fear of crime, in a chain of factors, is linked to the abandonment and deterioration of neighborhoods (Wilson & Kelling, 1982), which leads to neighborhood decline that may in turn, lead to a higher crime rate (Skogan, 1986, 1990). Moore and Trojanowicz (1988) note that if people retreat and hide in their homes, they make their homes safer but make the streets more dangerous. Theoretically, therefore, fear reduction programs were viewed as another form of crime prevention, a core function of the police. In addition, levels in fear of crime were linked to citizen participation in community social control. During the various crime prevention efforts throughout the 1970s and 1980s (Moore & Trojanowicz, 1988), it was recognized that fear of crime was one of several barriers to citizen participation in community crime prevention and problem solving efforts (Grinc, 1994).

Due to the traditional focus of police on crime control, however, reducing fear was typically not viewed as a police objective. Some scholars argued that police may not reduce fear since it is correlated with racial heterogeneity, socioeconomic gap, and mobility, which the police could not control (see Eck & Rosenbaum, 1994). The police also considered fear of crime as either an insignificant issue or assumed that they were already taking care of it indirectly by their focus on crime (Scheider, Rowell, & Bezdikian, 2003).[5] Research, however, revealed that victimization did not always determine the levels of fear of crime, suggesting a complex mechanism of fear. Specifically, fear patterns did not follow crime patterns (i.e., fear remained stable even when crime declines), the least victimized (i.e., old women) were most fearful, the impact of indirect victimization due to a sensational media was significant (Hale, 1996). Recognizing that reducing victimization might not necessarily reduce fear, fear was

considered as a separate problem. Instead of traditional approaches for crime control, an approach directly targeted to fear reduction thus emerged (Skogan, 1994).

Research about policing also provided insight on the effects of police strategies on fear as well as crime. Traditionally, motorized patrol and rapid response to calls for service were considered effective tools to reduce crime and possibly the fear of crime (Bristow, 1969). Contrary to the dominant assumption that fear would decrease by reducing victimization through such traditional strategies, research showed that these strategies were not helpful in reducing either crime or fear of crime (Kelling, Pate, Dieckman, & Brown, 1974). The Kansas City experiment showed that citizens were unaware of the level of patrol in their neighborhood and their levels of fear of crime were not influenced by reduced patrol (Kelling et al., 1974), even though the reliability of these findings has been controversial due to some limitations related to the research design. As well, rapid response to calls for service was not a significant factor for arresting criminals and enhancing citizen satisfaction with police (National Institute of Justice, 1978). On the other hand, the implications of both the foot patrol and fear reduction experiments was that close interaction between the police and residents did reduce fear (Moore & Trojanowicz, 1988). In addition to fear reduction through foot patrols and disorder management, it was realized that as police work with the community to solve community identified problems, citizens' fear of crime decreased (Trojanowicz & Carter, 1988). In previous research, the Flint experiment suggested that foot patrol and policing disorder in partnership with residents had enormous effect on the feelings of safety of residents (Trojanowicz, 1986). The foot patrol experiment in Newark, New Jersey also suggested that while crime and victimization rates were not likely to decrease

in response to foot patrol, public perceptions of social disorder and fear of crime were affected (Police Foundation, 1981). Practitioners and researchers, therefore, identified visible foot patrols and policing disorder as promising strategies to reduce fear of crime.

Reducing the fear of crime became a fundamental issue during the 1980s and 1990s as a police problem (Skogan & Roth, 2004; Trojanowicz, 1986). Underlying theories of community policing explain that reduced fear would enhance community cohesion, collective efficacy, community quality of life, and eventually increased social control against crime and delinquency (Trojanowicz, 1994). Community policing from its inception, therefore, brought fear of crime to the attention of law enforcement as a major goal and encouraged direct efforts to reduce it (Trojanowicz, Kappeler, & Gaines, 2002). Community policing was believed to reduce fear of crime for three theoretical reasons: increased police presence, attention to disorder, and community partnership.

First, one of the most important assumptions of community policing is that "the presence of the police through increased visibility reduces the public's fear of crime" (Manning, 1984, p.212; Riechers & Roberg, 1990, p.107). Community policing programs (i.e., foot patrol, substations, and youth programs) encourage officers to increase their positive visibility in the community. Such a presence has an effect on fear of crime directly and indirectly (Scheider et al., 2003). Frequent presence of police in the community deters crime and decreases victimization by curbing criminality of potential law violators, which will indirectly reduce fear of crime by reducing crime. Police presence also fosters a sense of security and makes law-abiding citizens feel safer, which will directly reduce fear of crime.

Second, community policing shifts the focus of police away from reactive responses to crime issues and toward proactive problem solving approaches that focus on the root causes of crime, such as disorder (Trojanowicz et al., 2002). The disorder model posits that people's sense of decay heightens their feeling of insecurity (Taylor & Hale, 1986). This focus of community policing on disorder, therefore, directly reduces fear of crime by minimizing one of the most consistent predictors of fear of crime, disorder. Police attention to disorder by fixing broken windows thus signals that someone cares for the community, which decreases fear.

Finally, community policing is a proactive problem solving strategy in partnership with the community (Skogan & Hartnett, 1997; Trojanowicz et al., 2002). Police endeavors for community partnership through consultation and mobilization are believed to increase community cohesion and security. The community concern/control model posits that community cohesion and social bonds are direct predictors of the reduction of fear of crime (Taylor & Hale, 1986). Community based police activities such as youth programs, community crime prevention meetings, and neighborhood watches build strong communities by increasing collective efficacy and strengthening social bonds (Trojanowicz et al., 2002), which enhance security and reduce fear. Reduction of fear of crime has been associated with community policing programs from the beginning and was the core element in the definition, goal, key assumptions, and theories of community policing. As well, practitioners and researchers identified visible foot patrols and policing disorder as promising strategies to reduce fear of crime. The implication of both the foot patrol and fear reduction experiments was that close interaction between the police and residents reduces fear (Moore & Trojanowicz, 1988). In addition to fear

reduction through foot patrols and disorder management, it was realized that as police work with the community to solve community identified problems, citizens' fear of crime decreased (Trojanowicz & Carter, 1988).

4. Impact of Community Policing on Fear of crime

In reality, the impact of community policing on fear of crimes has not been consistent in previous studies. In their review of the quasi-experimental literature on the relationship between community policing and fear reduction, Zhao et al. (2002) realized that out of 50 experimental studies, significant reduction in fear of crime was reported in 31 studies, no changes in 18 studies, and increase in fear in one study. For example, Newark coordinated a community policing program (Williams & Pate, 1987) which was a comprehensive community policing model that included foot patrol, newsletter, substation, community organization, problem solving, and residential surveys, where decreases in fear of personal victimization and decreases in fear of property crime were reported. The Hartford comprehensive community oriented policing program implemented aggressive arrest, foot patrol, vehicle safety checks during the "weed" phase and fostered better social integration during "seed" phase, where a general decline in concerns about crime was reported (Tien & Rich, 1994). Also, within the Reclaiming Our Area Residences project in public housing facilities in an economically disadvantaged neighborhood of Spokane, Washington, McGarrell et al (1999; 1997) found that comprehensive community policing and crime prevention programs such as police substation, public education, social events, and target hardening was associated with a reduction in fear across four waves of face-to-face interviews with representative samples of housing residents.

On the other hand, no significant change in perception of fear of crime was

reported in community policing project in public housing developments in Philadelphia (Piquero, Green, Fyfe, Kane, & Collins, 1998) and violence continued to be perceived as a serious problem after implementing a problem oriented policing project (i.e., proactive arrests, citations for code violations, removal of disorder) in conjunction with community policing programs (i.e., better information sharing between officers and residents) to reduce disorder, street robberies, and gang problems in San Diego (Capowich & Roehl, 1994). In addition, a study in twelve U.S. cities reported that citizen perceptions of community policing had no effect of their levels of fear of crime (Scheider et al., 2003).

The impact of citizen perceptions of community policing on fear of crime has also been examined. Data from five small to medium size cities in North Carolina showed that awareness of the police department's community-oriented policing was strongly related to fear of crime and citizens felt more at ease and less fearful of being a crime victim (Adams, Rohe, & Arcury, 2005). In Chicago, Skogan and Hartnett (1997) reported lower fear of crime levels and that citizens avoided fewer places due to worries about being victimized in community policing areas than in traditional policing areas. It was also reported that residents who knew about community policing and participated in some problem solving efforts were the least fearful and avoided the fewest places.

Closely related to perceptions of community policing and based on the assumption that increasing government responsiveness to crime and neighborhood problems would reduce the fear of crime, McGarrell, et al. (1997) tested and found a significant association between citizen perceptions of government and neighborhood responsiveness and fear of crime. On the other hand, as an extended dimension of citizen perceptions of community policing, in their comparison of fear of crime between police

volunteers and general citizens, Zhao and associates (2002) reported that volunteers participating in community-policing activities feared both violent crime and property crime victimization substantially more than ordinary citizens. The authors suggested that participation in crime prevention activities might build fear of crime and heighten the suspicion of others. Another possible interpretation was that their fear could be a motivator for these citizens to volunteer for community policing activities.

Overall, tests of the impact of community policing on fear of crime in Western contexts suggest mixed results. Many developing countries have accepted the philosophies and programs of community policing. The extent to which community policing works in these countries is not clear due to the lack of empirical research. Testing the impact of community policing on fear of crime in Seoul may enhance our knowledge on community policing in a comparative context.

In sum, this chapter reviewed several police reform models that emerged in reaction to the limits of the professional police model, the community policing model specifically, and the relevance of community policing in explaining fear of crime. Following the review of literature indicating the mixed impact of community policing on fear, it was argued that a test of the effect of community policing on fear of crime in Seoul would help enhance our knowledge of this popular police strategy. The next theoretical chapter reviews the models of fear of crime developed in the United States. The chapter also considers various definitions and measures of fear of crime.

CHAPTER FOUR
REVIEW OF THEORETICAL MODELS OF FEAR OF CRIME

Over the past three decades, fear of crime has been an important theme in scholarly work and policy debate and the body of literature has substantially grown (Hale, 1996). Scholars generally acknowledge that fear of crime is particularly an urban problem and its impact on urban unease is enormous (Garofalo & Laub, 1978; Hale, 1996). The majority of urban residents are afraid of walking somewhere nearby at night (Skogan & Maxfield, 1981). In the course of investigating the causes and results of fear of crime, scholars have observed some unexpected outcomes. Taylor and Hale (1986) noted three inconsistencies: young males are the most victimized but the least fearful of crime, elderly women are victimized the least but are the most fearful, and crime patterns do not spatially match the fear patterns showing that residents in higher crime communities do not necessarily report a higher fear than those in lower crime areas. In addition to these paradoxes, Skogan and Maxfield (1981) added some more unexpected patterns: exposure to excessive crime and violence in the media did not have any substantial impact on fear of crime, major protective measures against crime were taken the most by people who needed it least due to their low probability of victimization (i.e., elderly women), and levels of fear were increasing while governments were expanding funding to improve neighborhood quality and to encourage people to take protective measures. Scholarly efforts to build theoretical models were partly motivated by desire to answer these unexpected patterns of fear as well as the general recognition of fear as a social problem. Some have attempted to answer these puzzles based on the inconsistency of the definition and measure of fear, while others have focused on developing-theory based models. Prior to designing a research model, it is necessary to synthesize what

scholars have done to define the concept of fear and to build models for factors of fear of crime.

1. Concepts of Fear of Crime

(1) Concepts

Fear of crime refers to a wide variety of subjective and emotional assessments and behavioral reports (DuBow et al., 1979, p.1) and lack of consistency of definition and measurement is in part responsible for conflicting findings in the studies concerning fear of crime (Hale, 1996). The phrase "fear of crime" has acquired so many divergent meanings that it may not be reasonable to directly compare the explanatory magnitude and directional consistency of predictors of fear of crime across various studies. Skogan and Maxfield (1981) explained fear of crime as a physiological state and expressed attitude and described the physical manifestations of fear as "a rapid heartbeat, high blood pressure, and an increased flow of blood to the large muscles, etc." (p.49). More specifically, Ferraro and LaGrange (1987) defined it as "a negative emotional reaction to crime or the symbols associated with crime" (p.72). Considering most elements suggested by scholars, Garofalo (1981) comprehensively defined fear of crime as "emotional reaction characterized by a sense of danger and anxiety produced by the threat of physical harm elicited by perceived cues in the environment that relate to some aspect of crime" (p.840). Consistent with these definitions, Maxfield (1984) noted that since fear is "an emotional and physical response to a threat," people experience physiological changes when confronted with a dangerous situation (p.3). Many scholars have defined fear with psychological and physiological reasoning, yet existing research has used multiple measures of fear of crime due to the lack of consistency in the definition.

A major problem in conceptualizing fear of crime is its confusion with risk assessment. Fear of crime is different from general concern for safety, that is, risk assessment. Fear of victimization is conceptualized as being afraid, worried, and concerned with being victimized, compared to a cognitive perception of perceived risk (Ross & Jang, 2000). Ferraro and LaGrange (1987) compared both the cognitive dimension of perceptions of the risk of victimization and the emotional dimension of psychological or physiological reactions to the threat of victimization and argued that measures which did not differentiate emotional reactions from judgments of general safety are invalid measures. Risk assessment occurs when the measure of fear relies on judgment without considering any emotional component. An example of how risk assessment is measured is the item "how likely it is that a person walking around here might be held up or attacked?" This is related to the safety assessment of the community in general (Ferraro & LaGrange, 1987, p.283). Such a measure has often been used to assess fear of crime. Therefore, Garofalo and Laub (1978) argued that what has been measured in research as the fear of crime is "simply not fear of crime," but rather a concern for community and quality of life. In addition to fear of crime, therefore, what we call "fear" has perhaps been a measure of some other concepts which might be characterized as "insecurity with modern living, quality of life, perception of disorder, or urban unease" (Hale, 1996, p.84). Similarly, DuBow, McCabe, and Kaplan (1979) found that fear, risk, concern, worry, or anxiety have often been interchangeably used in much research, suggesting a serious lack of both consistency and specificity. Calling for a distinction between risk assessment and fear, Ferraro and LaGrange (1987) explained that risk to others or self, concern about crime to others or self, and fear for others'

victimization were distinct from fear of self-victimization, indicating that emotions of self-victimization should be differentiated from judgments and values of others or their own risk. Also, it is important to note that the measure becomes a risk assessment when it does not include an imminent threat even when it is about the self (Hale, 1996). To avoid the general judgment of risk, the measure should include some stimulus of fear, such as walking alone at night (Skogan & Maxfield, 1981).

Closely linked to the risk assessment dimension, fear has often been used without considering a personal perspective. One of the most important components of fear is that it is a response to a threat to oneself. In that way, it was differentiated from perceptions of crime as a general problem or concern for others. Maxfield (1984) believed that fear involves a personalized threat rather than abstract concern or beliefs about crime in general as a problem or concern for others' victimization. Warr (1984) stated that fear should actually be fear of victimization defined as fear of criminal acts committed against one's own person or property. Likewise, Furstenberg (1971) separated fear and general concern by explaining that "fear of crime is usually measured by a person's perception of people's own chances of victimization and concern by their estimation of the seriousness of the crime" (p.603). In his Baltimore study, he realized that the majority of the respondents believed crime had risen, yet such an opinion of crime did not correspond to their fear of crime. Therefore, individual's attitudes about crime in general as well as an individual's assessment of others' risk are distinct from fear of personal victimization. Fear involves a personalized threat rather than abstract beliefs about crime since, for example, "one might be easily concerned about the rising trend of a certain crime in society but not at all afraid of being personally attacked" (Maxfield, 1984, p.3).

Consistently, Ferraro and LaGrange (1987) argued that fear becomes a general concern when it does not include personal threat even though an emotional dimension is considered.

Fear is an emotional and physical response to a threat (Maxfield, 1984). It is "the emotional dimension of people's response to crime that most appropriately includes measures of fear" (DuBow et al., 1979, p.5). One might be concerned with a murder case reported in the newspaper but not be emotionally afraid of being attacked. Hale (1996) also realized that fear was appropriate when it was perceived as "the negative emotional reaction generated by crime or associated symbols" (p.92). Emotion necessarily accompanies irrationality. Fattah (1993) noted that emotional fear by definition is not based on rational objective assessments of the chances of becoming a victim, rather it is irrational. Therefore, the concept of fear contains a situation-specific stimulus component that includes specific kinds of risks and potential consequences to stimulate fear irrationally and emotionally (Skogan & Maxfield, 1981). An emotional threat was illustrated as "a possible danger to oneself in the course of walking home from a late evening visit to a bar" (Maxfield, 1984, p.3). The major attention to street crime as a stimulus of fear might be related to this emotional dimension because of its association with signs of imminent danger in a helpless situation.

Fear of physical harm was also differentiated from worry about property crime. Maxfield (1984) differentiated fear from worry even though he suggested that the concept of fear included both themes. Garofalo (1981) argued for the necessity of differentiating fear of physical harm from worry about property loss indicating that "our losing of some property is related to calculating, while physical threat especially at night on the street is

emotional and irrational because of the possibility of the physical harm" (p.854). Skogan and Maxfield (1981) noted that the main definition of fear in terms of street crime in the neighborhood at night is persuasive in this regard since people are concerned with their physical harm rather than property loss when they meet a stranger in such a situation.

Anticipated fear was also differentiated from actual fear. Fear at the moment of interview may not be considered actual but anticipated fear. It is reasonable to think that "the person walking alone in a high crime area at night is experiencing something quite different than the subordinate who is telling an interviewer that he or she would be fearful in such an area at night" (Garofalo, 1981, p.841). It was also recognized that anticipated fear is more influenced by distorted information about crime, while actual fear is more influenced by the objective threat of crime (Garofalo, 1981; Skogan & Maxfield, 1981). However, researchers cannot interview people in the fear-provoking situation. Therefore, Garofalo (1981) suggested measuring actual fear by asking how often people find themselves in specific situations and how strongly they have emotionally reacted to such situations in the past, arguing that if the question is hypothetical in nature, it may be more likely to have tapped into anticipated fear but not actual fear.

Specific fear was emphasized over global fear. One general shortcoming in early research on fear of crime is the failure to differentiate fear for various crime types, which is the result of over-reliance on global measures of fear (Warr, 1984). Global fear is fear that is measured without referring to any crime type. Even though scholars attempted to separate worry of property crime from fear of personal attack (Garofalo, 1981; Skogan & Maxfield, 1981), others suggested that fear needed to be further specified (Fattah, 1993; Warr, 1984). Fattah (1993) argued that women might be afraid of rape and the elderly

might fear burglary especially when they are at home. Fear of crime research has failed to consider the obvious fact that fear varies from crime to crime as its seriousness and consequences are divergent, by measuring fear globally or by mostly focusing on street crimes (Fattah, 1993; Warr, 1984). It may be necessary to measure fear of crime for each crime type (Warr, 1984), since one single crime type (i.e., rape, burglary) may capture overall attitudes about crime and safety only for some people (i.e., women, elderly). Also, the global approach may not capture explanatory factors of fear that vary by different types of victimization.

Even though scholars argue that fear should contain emotional reaction to imminent personal danger of specific crime (Garofalo, 1981; Skogan & Maxfield, 1981; Taylor & Hale, 1986; Warr, 1984), fear has often been studied as a perception or an attitude toward overall safety issues of global crime due to the difficulty of interviewing people in a fear-provoking specific situation (Garofalo & Laub, 1978; Hale, 1996). Most of all, it is necessary to differentiate specific fear from both general concern of safety and global fear. That is, it is necessary to distinguish specific fear, global fear, and risk assessment. Maxfield (1984) argued that while expressing doubts about one's safety on the streets at night reflects "a rather narrow set of anxieties that may or may not be linked to other threats faced daily by urban residents, broader concern about crime and how it affects the lives of people who may not be unsafe, but rather anxious, concerned, or worried is more accurate and more important as a policy issue" (p.4). Haghighi and Sorensen (1996) indicated that researchers have neglected the more common non-violent victimizations by limiting their focus to fear of violent victimization. Rountree (1998) found that crime experiences have differential effects on fear of violence in comparison

to fear of burglary. In her Seattle neighborhood study, violent victimization increased both fear of violence and fear of burglary, but burglary victimization increased only fear of burglary. Most of all, it is necessary to theoretically and empirically distinguish risk assessment and emotional fear as well as global fear and specific fear (Rountree, 1998).

(2) Standard Measures

As stated, the conceptualization behind the composition of fear of crime has been problematic due to the lack of consistent and standardized measure. The measure of fear has also been divergent in its definition. In general, Hale (1996) reviewed research on fear of crime and addressed some elements that have been associated with the measure of fear: it was measured quantitatively, it has been focused on ordinary street crime, and it was considered to be an emotional or psychological property of certain people. One of the most popular measures of fear of crime is in the National Crime Survey, which is also referred to as the National Crime Victimization Survey, based on the question "how safe do you feel or would you fear being out alone in your neighborhood at night?" (Garofalo & Laub, 1978; McGarrell et al., 1997; Skogan & Maxfield, 1981; Taylor & Hale, 1986). By being out alone at night in the neighborhood, people may fear physical violence through personal confrontation with a stranger since it can result in injury or death (Skogan & Maxfield, 1981). Also, this situation may arouse emotional fear because of the anxiety generated from the unpredictability of a stranger. Therefore this measure has been considered to include most elements required for fear.

Although popular, this measure is controversial. More than anything else, it limits types of threats. Even though this measure has been advantageous in defining fear as "a dangerous street crime in the neighborhood at night," the narrow definition misses

the frequent crime "burglary" which may cause physical damage as well as property loss (Skogan & Maxfield, 1981, p.50). Rountree and Land (1996) suggest a more specific measure of affective, personal, or emotional reactions to the possibility of being victimized by a specific type of crime by using the question "how afraid are you of becoming a victim of rape, robbery, murder, etc?" (p.1354). Their suggestion was consistent with Warr (1984) and Fattah's (1993) argument about global versus specific fear. Other scholars criticized the NCS measure as just reflecting general risk assessment rather than emotional fear. "Most people do not routinely walk alone in the neighborhood at night and so this question reflects a general safety concern" by forcing people to imagine and assess their expected fear (Haghighi & Sorensen, 1996, p.17). Also, Skogan and Maxfield (1981) argued that, without stating the term "crime," urban dwellers might include their fear of meeting an African American on the street at night as fear of crime, stating that fear of crime among whites often represents fear of blacks. Their arguments suggest, at least, that the NCS measure of fear is not independent of other concerns. Garofalo (1981) also cautioned that there were other potential physical harms that are not generally classified as crimes such as car accidents or natural disasters.

Another criticism is related to the quantitative assessment. Maxfield (1984) indicated that this measure concealed the true extent of fear among men due to the tendency of men's reluctance to show their weakness when they respond to the quantitative scale. Another general measure of fear is used in the General Social Survey (GSS) by asking "is there any place right around here, that is, within a mile, where you would be afraid to walk alone at night?" (Haghighi & Sorensen, 1996). Flaws similar to the NCS measure were raised in the GSS measure. The reference to crime is implied

rather than explicit, single item indicators are more error prone than multiple-item indicators, and the variation in fear of different types of crime is not to be captured in this way (LaGrange & Ferraro, 1989). Even with the controversy, most assume that "the standard National Crime Survey measure captures the fear people anticipate" due to the possibility of violent crime at night on the street (Hale, 1996; Taylor & Hale, 1986, p.153). However, considering the criticism of the NCS item, adopting multiple items, including more crime types, and clearly stating crime in the question, would seem to increase the validity of the fear of crime measure.

2. Models of Fear of Crime

In the course of revealing predictors of fear, scholars have developed several theoretical models. These models include the victimization model, the disorder model, the community control model, the subculture diversity model, and the community context model (DuBow et al., 1979; Hale, 1996; Lane & Meeker, 2000; Taylor & Hale, 1986). The most traditional victimization model was related to the link between direct or vicarious experience with crime and fear. People are afraid of crime because they know the pain of crime victimization based on their own, or their friends' experience, or through the media as well as their awareness that they are socially or physically vulnerable to crime. The disorder model, based on the social disorganization and broken window thesis, proposes that perceived disorder stimulates fear. The community control or concern model explains that the perceptions or concerns of the deterioration of social control in the community are sources of fear. On the other hand, the subcultural diversity model focuses on racial and ethnic diversity as a factor predicting fear of crime, based on the notion that people are afraid of those who are racially and ethnically different from themselves due to the difficulty of understanding others' culture.

More recently, methodological advancement in multilevel analysis allows simultaneous assessment of various community conditions in the community-context model. Different from demographics and personal experiences in the victimization model, as well as perceptions or concerns of community issues in the disorder and the community control/concern model, this model investigates the impact of actual indicators of community conditions. Also, this community context model goes beyond the subcultural diversity model and the disorder model by considering a broader range of indicators such as crime rates, instability, concentrated disadvantage, etc. Dimensions of direct victimization, vulnerability, and indirect victimization are personal factors in fear of crime. In contrast, aspects of disorder, community concern or control, subcultural diversity, and community context models are social contextual factors.

(1) Personal Factors: The Victimization Model

The victimization model is one of the oldest among the well-reported models of fear of crime. As a common sense approach, the initial idea was a direct linear relationship between victimization and fear. Later, the vulnerability thesis was developed to explain the fear among the physically and socially weak. It was also recognized that people experience crime not only by directly encountering it as a victim, but also by learning about it indirectly from a family member, friend, neighbor, or the mass media. Therefore, this victimization model attempts to address the effect of personal experience of victimization, perceived social or physical vulnerability, and vicarious experiences with victimization through stories of people they know or the media (Hale, 1996).

Victimization

In the direct victimization approach, researchers tended to assume that those who experienced criminal victimization would be more fearful of crime in their daily lives because of the painful memory of physical and/or psychological harm (DuBow et al., 1979). Being a victim may make people more cautious, but it remains unanswered whether the experience makes people more fearful (DuBow et al., 1979; M. Lee, 1998). It is often indicated as one of the most obvious paradoxes regarding fear of crime that those who were victimized the most (i.e., young males), had the lowest level of fear of crime, while those who were victimized the least (i.e., the elderly and women) had the highest fear (Sacco, 1990). In addition to the paradox, Agnew's (1985) explanation, that victims may experience less fear because they tend to neutralize their experience by learning effective defense tactics and other ways to avoid further victimization, counters the direct victimization thesis.

Empirical evidence supporting a relationship between direct personal victimization and fear of crime is not consistent. Prior victimization, as an individual level factor, was important in explaining fear of crime in a number of studies (Bursik & Grasmick, 1993; Katz et al., 2003; Skogan, 1987; Skogan & Maxfield, 1981), but in other research, victimization experience did not stimulate the feeling of fear of crime or the relationship was very weak (Garofalo, 1979; Liska et al., 1988; McGarrell et al., 1997; Rifai, 1982). Skogan (1987, p.135) concluded that "victimization affects both fear-related attitudes and behavior in a clear and consistent manner," while Rifai (1982) reported that victimization had little effect on fear and daily lives of victims through a number of case studies of burglaries and thefts. The indirect victimization model, based

on vulnerability or indirect experience with victimization, was developed as a potential answer for this inconsistency.

A methodological issue regarding the measure of fear in relation to vulnerability also deserves attention. For example, regardless of their victimization, women and the elderly may inflate fear of crime in the case that they are asked about a general safety issue rather than a specific or emotional fear especially when specific crime type is not mentioned in the question (Smith & Hill, 1991), due to their generally high concern for community safety. Types of threat were important. Miethe and Lee (1984) found that prior victimization was associated with fear of violent crime but not fear of property crime. Rountree (1998) reported that violent victimization increased both fear of violence and fear of burglary, but burglary victimization increased only fear of burglary.

Some unexpected findings have been reported. Interestingly, Smith and Hill (1991) found property victimization rather than personal victimization as a significant predictor of fear of crime. Skogan and Maxfield (1981) found that while victims were more fearful than those who have not been victimized, many of those fearful were not actually victimized, suggesting that personal experience with crime may not explain much. Therefore, when direct victimization is included as a predictor of fear, it would be necessary for researchers to design a fully specified model especially controlling for social and physical vulnerability between countering groups (i.e., age, gender, race, and groups with different levels of socioeconomic status) and indirect experience with the victimization (i.e., victim friend, violence in the media).

Vulnerability

The indirect victimization model includes the idea that social and physical vulnerability, based on personal characteristics such as gender, age, race, and socioeconomic status, accelerates fear of crime. Vulnerability is related to the ability to defend, avoid, and solve the harmful event when the attack occurs (Pantazis, 2000). Physical vulnerability was generally measured based on demographic characteristics, while social vulnerability was measured by "the actual risks faced by population groups and by their resources for dealing with consequences of crime" (Skogan & Maxfield, 1981, p.73). Three key factors of fear proposed by Killias (1990) in relation to vulnerability included exposure to non-negligible risk, lack of effective defense, and anticipation of serous consequences. According to this explanation, women are exposed to sexual attacks, both women and the elderly are expected to have serious and lasting crime consequences, and they are less able to defend themselves. Also, social vulnerability posits that those who have risky jobs (i.e., taxi drivers, jobs with late closing hours, prostitutes, etc.) are more likely to be exposed to risk, those without a network of social support and adequate resources would expect serious crime consequences, and these people tend to see difficulty in defending themselves due to the high levels of risk. Similarly, it has been noted that women and the elderly are physically vulnerable because of their difficulty in resisting attacks, and that racial minorities and those in a lower social class are socially vulnerable because of their frequent exposure to crime and insufficient resources to handle the consequences (Box et al., 1988; Killias & Clerici, 2000; Taylor & Hale, 1986). Those with less physical or social ability would be more fearful of crime because of their expectation of the consequences when they confront an attack.

The bitterness of the gender specific crime, especially rape, would partly be responsible for the high levels of fear among women since fear of sexual assault in everyday life may shadow women's fear of other crimes. As evidence, Killias (1990) noted women's higher levels of fear with higher exposure to risk in relation to sexual attacks and Ferraro (1996) revealed that fear of sexual assault substantially increased the explained variance in fear, especially personal crime. Others explain vulnerability in terms of gender specific socialization. Gender role socialization creates stereotypical female gender characteristics such as passivity, dependency, and timidity, which force women to avoid risk-taking or toughness and eventually promote the feeling of vulnerability (Garofalo, 1979; M. Lee, 1998; Sacco, 1990). Differential sensitivity as well as frailty is the element to explain vulnerability among the elderly. The elderly are more sensitive to offenses and risks than younger people (Warr, 1984), which intensifies their feeling of vulnerability. The common paradox, that despite their lower objective risk of criminal victimization older persons show significantly higher fear levels than younger ones, may be due to the fact that the elderly are more sensitive to offenses and behave in an appropriately cautious manner, thus yielding less victimization (Hale, 1996; Pantazis, 2000). Also, the lower levels of victimization among the elderly and women was explained in relation to routine activities since they tended to be more cautious and reluctant to go risky places (Fattah & Sacco, 1989).

On the other hand, social vulnerability was expressed as "daily exposure to the threat of victimization and limited means for coping with the medical and economic consequences of the victimization" (Skogan & Maxfield, 1981, p. 69). Those who live in a disadvantaged area would be vulnerable because of their everyday exposure to crime

(Pantazis, 2000; Skogan & Maxfield, 1981), and those individuals who lack financial resources to protect themselves or recover from injuries or recover properties tend to be more fearful of crime (Hale, 1996). Minority status as well as low income and education were often used as indicators of social vulnerability (Pantazis, 2000; Skogan & Maxfield, 1981; Taylor & Hale, 1986). Minorities and those of lower socioeconomic status were more likely to live in a disadvantaged area where disorder and crime rates were high (Covington & Taylor, 1991). People in such a situation are more fearful of crime because of their fear-provoking surroundings. The integration and collective efficacy to enhance community quality is usually low in these areas because of their lack of sufficient resources, thus further provoking their feelings of vulnerability (Sampson et al., 1997a). As well, Hale (1996) indicated racism as an issue related to fear of crime among racial minorities.

In previous studies in general, racial minorities, seniors, and females were more likely to be fearful of crime because of their social or physical vulnerability, even though they are, in many cases, less likely to be victimized than their counterparts such as the racial majority, young people, and males (Kury et al., 2000; Nieuwbeerta, 2002; Skogan & Maxfield, 1981; Taylor & Hale, 1986). In one of the first tests of the vulnerability thesis, Skogan and Maxfield (1981) found that throughout all cities in the study, women, the elderly, blacks, and those with lower education and income tended to have higher fear of crime than their counterparts. In this study, physical vulnerability explained more variance in fear than social vulnerability. They also demonstrated that physical vulnerability was strongly related to the frequency of adopting protective tactics. Their study, therefore, provides a partial answer for the paradox. The least victimized (i.e., the

elderly and women) were more likely to be the most fearful and took protective actions even though they were less likely to use those measures, all due to their vulnerability (Skogan & Maxfield, 1981). Supporting the vulnerability thesis, Killias (1990) recognized dimensions of vulnerability as exposure to risk, seriousness of consequences, and loss of control in relation to physical and social vulnerability. Garofalo (1979) found, in an eight American city study, that the fear of crime was not simply a function of the risk of and actual experiences with victimization, rather, social role expectations represented as gender and age in particular are important factors regardless of their objective risk of victimization, thus indicating that gender or age specific role socialization stimulates fear. Overall, the evidence of the importance of the measures of vulnerability in predicting fear of crime is relatively consistent and extensive (Hale, 1996), but some controversial findings are addressed in the following section.

Regarding gender, most research supported the position of a higher level of fear among women in relation to their physical vulnerability (Covington & Taylor, 1991; Garofalo, 1979; Haghighi & Sorensen, 1996; Maxfield, 1984; McGarrell et al., 1997; Taylor & Hale, 1986; Warr, 1984). Some others explained women's greater fear in relation to their lack of power in society (Stanko, 1995), or the impact of gendered socialization process (Goodey, 1997). These studies in general have supported women's vulnerability thesis, just in ways mostly focusing on physical vulnerability and giving slight attention to women's social position. Several controversial issues have been addressed. Goodey (1997) argued that the stereotypical image of women's fear and men's fearlessness was just the socialized expression of femininity and masculinity regardless of their actual levels of fear, suggesting that general survey methods failed to

capture the full nature and extent of women's fear. Sacco (1990) also explained the gender gap in fear in relation to the gender specific socialization that discouraged risk-taking among women and encouraged it among men. Stanco (1995) argued that lack of power in society generated hidden violence against women such as domestic violence and sexual harassment, which was responsible for women's higher levels of fear. Also, fear of crime was predominantly fear of rape among women (Warr, 1984).

Recently, Haynie (1998), using standard opinion survey data of the General Social Survey (1973-94) and the U.S. Uniform Crime Reports, revealed that although women were much more likely than men to fear crime, the gender gap has narrowed as men's reported fear of crime has slowly increased over time while women's has remained stable. Also, even though gender itself was the overriding determinant of women's fear of violent crime, social and economic factors compounded it (Pain, 1997). Through qualitative interview data, Gilchrist, Bannister, and Ditton (1998) revealed striking similarities between men and women regarding their fear of crime, the steps taken to avoid crime, and the impact of crime in their everyday lives. They argued that the stereotypical responses might be attributable to the survey methodologies employed in previous studies. In addition to the general vulnerability thesis of gender differences in fear of crime, researchers may have to give attention to the methodology to capture true expression of fear as well as the gender specific socialization process.

Regarding age, Hale (1996) noted the general lifestyle of the elderly in the U.S.A. that "they isolate themselves from the outside world, live a life of self-imposed confinement and are captives in their own homes" (p.100), partly due to fear of crime. The effect of age on fear of crime appeared to be less consistent or weaker than that of

gender. Contrary to the literature that suggested great fear among the elderly (Box et al., 1988; Hale, 1996; Skogan & Maxfield, 1981; Taylor & Hale, 1986), some scholars reported no association between age and fear (Chadee & Ditton, 2003; Kury, Obergfell, & Ferdinand, 2001; LaGrange & Ferraro, 1989). Yin (1982) found that crime was less important than health and money as a source of personal concern among the elderly, suggesting that fear of crime might not be the reason for their staying at home. Also, throwing into question our belief that fear of crime is primarily a problem of the aged, young women had the greatest fear of crime in Germany (Kury et al., 2001). In addition, in the study using the General Social Survey conducted in Canada, most indicators of fear did not suggest that people steadily grow more fearful as they age, thus suggesting that broad generalizations about the greater fearfulness of the elderly might be exaggerated (Sacco & Nakhaie, 2001).

It was suggested that the mixed results of age effect on fear might be related to compounding effects of environmental conditions, routine activities, and measurement of fear. Review of prior research on the elderly's fear of crime by Fattah and Sacco (1989) and Hale (1996) suggested that fear was higher in disorganized areas, fear in the elderly might not drop after considering their lower exposure to crime, and the elderly tended to inflate their fear on questions about general safety issues. Older adults did not have higher levels of fear on both personal and property crime when the alternative specific measures of fear instead of the standard NCS measure were used (LaGrange & Ferraro, 1989).

Through a critical assessment of the research on fear of crime among the elderly, LaGrange & Ferraro (1987) argued that the amount of fear experienced in the everyday

lives of most older persons has been overstated due to the poor operationalization of fear of crime. The elderly tended to show greater fear when they were asked about a general safety issue rather than emotional, actual, and specific fear (LaGrange & Ferraro, 1989). In other studies, it was suggested that the effect of age on fear might be conditional to social status or environment. That is, old age combined with low income produced greater fear (Baldassare, 1986). Consistent with such a result, the interaction effect between age and urban residence was greater than the individual effects of the two variables (Baumer, 1985; Jeffords, 1983). In this regard, Maxfield (1984) argued that the elderly were more fearful of crime in deteriorated areas since they were sensitive to the presence of social and physical incivilities compared to younger people. The effect of age deserves further tests controlling for measurement error and community conditions.

Regarding social vulnerability, much research has supported the notion that minorities and those of lower socioeconomic status were considered to be more socially vulnerable because of their disadvantaged contexts and limited resources either to improve their environments or to handle consequences of crime (Box et al., 1988; Fishkin, Rohrbach, & Johnson, 1997; Garofalo, 1981; Gomme, 1986; Hale, 1996; Skogan, 1986; Taylor & Hale, 1986). The poor, the less educated, and blacks were more likely to fear crime in their neighborhood than their counterparts (Erskine, 1974). All else being equal, people with higher levels of education and income tended to be less anxious for their safety (Grabosky, 1995). In an early study, Biderman, Johnson, McIntyre, and Weir (1967) found that those with highest income status showed the lowest anxiety of crime and they interpreted that people with sufficient financial resources were better able to protect themselves from harm and to afford to live in a safe neighborhood. Also,

Moeller's (1989) review of the studies of the effect of social vulnerability on fear of crime showed that, overall, blacks expressed more concerns about crime than whites. It was interpreted based on Brooks's (1981) argument that blacks were more likely to be involved in crime with other Blacks than were Whites, and they were more likely to become victims of crime and to be fearful of crime. Consistently, Skogan and Maxfield (1981) argued that higher fear of crime among blacks and other minorities would be explained by environmental and contextual factors of incivilities and criminogenic conditions.

Along the same lines, it was reported that living in lower socioeconomic-status neighborhoods increased fear (Covington & Taylor, 1991; Hale, Pack, & Salked, 1994) probably due to residents' exposure to disorder and crime. Burby and Rohe (1989) emphasize the importance of environmental conditions in their survey of a random sample of 127 residents with very similar socioeconomic status residing in 8 public housing units, half of them located in black neighborhoods in the inner city, and the other half outside the inner city. Compared with inner city residents, those living in less concentrated developments were more satisfied with their living arrangements and less fearful of crime. Their study was not focused on the effect of social vulnerability but it suggested that people who were forced to live in disadvantaged areas due to their lack of material or social resources would be more concerned with their safety. Findings contrary to the social vulnerability thesis were also reported. In opposition to general support to the social vulnerability thesis, some reported that race was not a significant factor (Gibson et al., 2002), regardless of the levels of disorder in the neighborhood (McGarrell et al., 1997), or race was somewhat less important than has generally been

supposed and the socioeconomic variables, such as income and education also had minor effects (Clementer & Kleiman, 1977). These mixed results suggest that in certain situations, factors in social vulnerability might interact with each other or with community conditions, reducing the utility as an independent predictor of fear.

Indirect Experience of Crime

A small number of people are actually victimized, but many experience victimization indirectly by learning about a crime through friends, relatives, or the media. The indirect victimization perspective explains the incongruity between fear and crime in which fear of crime is much more widespread than actual crime, related to vicarious experiences of victimization (Covington & Taylor, 1991). That is, those who hear from a victim, observe a crime, or watch crime news become fearful of crime. Taylor and Hale (1986, p.157) noted this as a "crime multiplier" in that people who hear about a crime through conversations with victims or observations in neighborhoods become indirect victims. Hearing of the victimization from a relative, neighbor, or friend, allows "one's imagination full scope" (Hale, 1996, p.105). People get impressions about the nature and magnitude of crime in such a way. Both media and informal social networks were indicated as sources of vicarious information about crime (Skogan & Maxfield, 1981; Taylor & Hale, 1986).

A body of research focusing on the media effect on fear has emerged asking whether exposure to violent or crime related programs in the media stimulates people's fear of crime. Empirical evidence on this issue is quite mixed. Some studies reported a positive association between exposure to violent programs or news in televisions or newspapers and fear (Garofalo, 1979; Haghighi & Sorensen, 1996; Tyler, 1980). Using

two different samples, those in suburban areas and in three major U.S. cities, Tyler (1980) found that crimes learned from the media significantly increased fear of crime in both samples. Other studies reported a different effect of television and newspapers. The frequency of watching television news and listening to news on the radio was significantly related to fear of crime, yet reading newspapers and newsmagazines were unrelated to fear of crime (Chiricos, Eschholz, & Gertz, 1997). In a study of White and Latino residents in California, Lane and Meeker (2003) realized that for Whites, relying on the newspaper had a negative indirect impact on fear through perceived risk, but television had no effect. On the other hand, among Latinos, newspapers had no effect on fear while television had both a positive direct effect and an indirect effect on fear through perceived risk. This variation of effect based on the type of media may be explained by the possible education disparity between Whites and Latinos since in general those more educated tend to read newspapers more. Still others showed that regular watching of crime dramas was weakly related to fear of crime (Dowler, 2003).

Doob and MacDonald (1979) found that significant association between media exposure and fear of crime disappeared when neighborhood crime was controlled, suggesting that media messages might have an impact only in high crime areas due to the high risk of victimization in relation to their crime information. On the other hand, Sacco (1982) found that exposure to both television and newspapers did not influence the levels of fear of crime. Skogan and Maxfield (1981) also reported television influences to be unrelated to fear of crime and they argued that media effect would not be significant since in most cases it is about crime events remote from the neighborhood, and does not contain useful or specific information for readers to assess their own risks. In his later

review of literature, Tyler (1984) also observed that citizens failed to use the mass media as a source of information about personal crime risk since they did not find media reports informative. In the studies of media effect on fear, the confounding role of community conditions and education, especially when newspapers are used as an indicator, need to be considered further.

In addition to the media, people learn about crime by talking with friends, neighbors, and other acquaintances. People's beliefs about the nature of crime were greatly influenced by others who share their experiences (Maxfield, 1984). Unlike the media, getting information through local social networks is more specific, contains useful details to assess people's own risk of victimization, and is usually about a crime event close to people's residential location (Skogan & Maxfield, 1981). People would be more fearful when they know a serious crime has occurred in the neighborhood than when they learn such a crime in a far away place and their magnitude of fear would be greater when they know details about the crime. The thesis that geographical proximity played an important role and learning about crime in their neighborhood was related to people's assessments of their personal safety is persuasive. Perceived seriousness of the offense and perceived likelihood of being attacked were proximal causes of fear (Warr & Stafford, 1983). Along the same lines, Skogan and Maxfield (1981, p.181) found that "urban residents learned about crime from each other concentrating on stories on crimes of violence and knowing crime victims was related to higher levels of fear especially when such an event occurred close to home." Therefore, knowing a crime victim was related to higher levels of fear, especially when those cases occurred close to home (Hale, 1996).

Arnold (1991) provided much support for the indirect victimization thesis by reporting that vicarious victimization but not direct victimization was a significant predictor of fear of crime in all three different samples from the U.S. and Germany. Similarly, Box et al. (1988) found that indirect victimization but not direct victimization was significantly associated with fear. Local social contacts would serve to amplify the fear-stimulating impact of local crime. Taylor and Hale (1986) included local social networks as positive predictors of fear of crime, arguing that "those with more local ties will be more fearful because victimization information is transferred through the network" (p.161). In this study, however, community networks significantly increased worry of property crime but not fear of physical harm.

Mixed results were also reported. Tyler (1980) found that crimes learned about from others were significant predictors of ratings of the crime problem in the city sample but not in the suburban sample. This may be interpreted based on the contextual difference between cities and suburban areas. People may link their crime information to their own risk in high-crime urban areas, which may not be the case in relatively safe suburban areas. Importantly, Hale's (1996) review of literature provided a strong argument about the link between crime rate and fear of crime in relation to indirect victimization. People might have more crime information in high-crime areas in relation to their risk assessment but it has often been reported that total levels of fear and crime did not match (Haghighi & Sorensen, 1996; Hale, 1996; Skogan & Maxfield, 1981; Taylor, 2001; Taylor & Hale, 1986). It appears that the crime rate could also be discussed along with other conditions in the community context model since not only crime rate but also other community conditions would influence residents' assessment of

their safety. As stated, however, community conditions of crime should be considered in the investigation of indirect victimization as a predictor of fear. It may be responsible for some mixed results in prior studies.

(2) Community Based Factors of Fear of Crime

Theory in Brief

There are many factors that tie one's personal life to one's local community. Irrespective of their personal experiences or level of vulnerability, people will be affected by neighborhood conditions (Skogan & Maxfield, 1981) in as much as their lives are tied to the community. Shaw and McKay (1942) theorized that economic hardship, instability, and ethnic heterogeneity in neighborhoods caused a state of social disorganization characterized by a lack of informal social control mechanisms. They understood that this disorganization was linked to increased delinquency, thus suggesting that social patterns of the urban environment produce social disorganization, which stimulates crime and deviance and possibly fear of crime. Social organization involves an integration of customs, teamwork, high morale, and bonding, which formulates a harmonious community. Sampson and Groves (1989) measured community social organization as local friendship networks, control of street-corner teenage peer groups, and prevalence of organizational participation. Further developing social disorganization theory, Bursik and Grasmick's (1993) systemic approach to social control posits that neighborhood-level social control is influenced through the effects of social disorganization on the private (i.e., relationships among family), parochial (i.e., informal networks of friends and neighbors), and public (i.e., neighborhood networks with formal agencies) dimensions. They realized that crimes were most likely to develop in communities with limited ability

to regulate behaviors at the parochial (community) and public levels (Bursik & Grasmick, 1993) by decreasing community efforts to keep strangers out and to promote informal social control. This systemic approach, therefore, embraces both informal and formal social control dimensions and the partnership with formal authorities as well as factors affecting crime and fear reduction.

In relation to explanatory models of fear, both perceived disorder and concern with deterioration of social control are positively linked to dimensions of social disorganization. Also, consistent with initial explanations of social disorganization thesis, factors for subcultural diversity (i.e., racial composition) and community context models (i.e., instability, crime rate, concentrated disadvantage) are causes of social disorganization accompanying problems of disorder and concern with community deterioration. Therefore, all these community-based models, that is, the disorder model, the community concern model, the subcultural diversity model, and the community context model, build on the broader social disorganization framework.

The Disorder Model

As a quality of life model, the disorder model considers perceptions of poor quality of life and neighborhood incivilities as predictors of perceptions of increased fear of crime. It is based on the notion that perceived social and physical disorders are associated with fear of crime (Cole & Kelly, 1992). This perspective considers both social and physical disorders. "Social disorder is a matter of behavior that people can see it (public drinking, prostitution), experience it (catcalling or sexual harassment), or notice direct evidence of it (graffiti, or vandalism), while physical disorder involves visual signs

of negligence and unchecked decay such as abandoned or ill-kept buildings, broken streetlights, trash-filled lots, and alleys strewn with garbage" (Skogan, 1990, p.4).

According to Ross and Jang (2000) social disorder was related to situations such as people hanging out on the streets, public drinking, drugs, and panhandling, while physical disorder was the appearance of a community such as noise, dirt, run-down buildings, vandalism, and graffiti. In general, as Skogan (1990) noted, social disorders appear to be a series of events, while physical disorders tend to be ongoing conditions. Also, extreme disorderly acts become crimes. Therefore, even though some researchers tend to separate disorderly reports from other major crimes (Skogan, 1990), others were reluctant to separate crime from disorder (Bursik & Grasmick, 1993).

In this disorder perspective, the research focus was on perceptions rather than objective incivilities (Taylor & Hale, 1986). Perceptions of disorder are related to people's concern for their safety since disorder signals "physical-lack of concern about the neighborhood, social-lack of adherence to norms of public behavior" (Taylor & Hale, 1986, p.154). Disorder in this case also represents "weakened local social control and the attenuation of traditional norms" (McGarrell et al., 1997, p.481). Wilson and Kelling's (1982) broken window thesis signifies the significant role of neighborhood disorder in community deterioration. According to the thesis, community disorder persisting in the neighborhood is likely to further develop into serious crime. Disorder demonstrates that people in the community are indifferent or less willing to intervene to maintain public order such as supervising groups of rowdy teenagers or addressing physical signs of deterioration. Recognizing this, teenagers and other possible offenders become bolder and intensify their vandalism or even crime, which makes residents retreat due to fear.

The rowdy situations are developed further and attract offenders from outside the community since they feel that the community has become a vulnerable or less risky place for illegal activities (Bursik & Grasmick, 1993; Wilson & Kelling, 1982). People in the community perceive even higher levels of fear and begin to withdraw from community activities or decide to move out, which eventually further deteriorates the community.

Similarly, Skogan's (1990) disorder and decline thesis also linked disorder, crime and fear, and community decline. Rooted in social disorganization theory, his disorder and decline thesis posits that neighborhood conditions such as racial heterogeneity, low socioeconomic status, and instability cause signs of disorder, which is eventually connected to neighborhood changes in victimization, fear, desire to leave, and further declines of community structure (Skogan, 1990). More recently, modeling the link among cohesion, disorder and crime, and fear, Markowitz, Bellair, Liska, and Liu (2001) suggested a feedback loop in which decreases in neighborhood cohesion increase crime and disorder, raising the level of fear, which, in turn, further decreases cohesion. All these theses take into account that people's perceptions of disorder in the neighborhood stimulate not only generalized anxiety but a specific fear of crime by signaling that they are surrounded by symbolic or actual threats, and that their neighborhood is declining (Hale, 1996).

The thesis that perceived disorders in the neighborhood increase fear of crime has been widely supported (Box et al., 1988; Garofalo, 1981; Gibson et al., 2002; Hale, 1996; Markowitz et al., 2001; Maxfield, 1984; McGarrell et al., 1997; Skogan, 1990; Skogan & Maxfield, 1981; Taylor & Hale, 1986). For example, Skogan (1990), in his study of 40

urban neighborhoods, observed the evidence of Wilson and Kelling's proposition that "disorder spawns more serious crime" reporting that social and physical disorder were linked to both actual victimization and fear of crime (p.74). More specifically, the effect of social disorder was significant in sparking residents' fear since "disorderly people were unpredictable and were potentially violent" and physical decay was also associated with fear, recognized as a"sign of crime" (Skogan, 1990, p.48). Some studies reported different levels of effect of social and physical disorder on fear. Rohe and Burby (1988) realized that social incivilities were stronger predictors than physical incivilities due to their link to direct danger of being attacked by disorderly people. LaGrange, Ferraro, and Supancic (1992) found both showing significance as predictors of fear but they reported social disorder as a stronger predictor of perceived risk. Importantly, Taylor and Hale (1986) cautioned against the spurious relationship between perceived disorder and fear due to social class, suggesting that researchers should consider the fact that disorder is more commonly perceived in a lower-class neighborhood. Also, Ross and Jang (2000) observed a buffering role of social ties in that perceived neighborhood disorder and social ties significantly interacted and informal social ties with neighbors reduced fear even when people perceived disorder. That is, the effect of perceived neighborhood disorder on fear was mediated by social ties.

Although most studies have focused on people's perceptions of disorder at the individual level, several scholars have attempted to investigate the effect of objective measures of community disorder usually through observation. That is, objective conditions of community disorder as well as perceptions of disorder were used in some limited studies. Covington and Taylor (1991) in their study of 66 Baltimore

neighborhoods realized that both perceived and objective measures of disorder were significant predictors of fear but the effect of perceived disorder was stronger than the objective measure of disorder. Taylor (2001) also realized that the connection between disorder and fear was mostly in individual levels of perception instead of neighborhood levels of objective indicators. Recently, Robinson, Lawton, and Taylor (2003) conducted a panel study of urban residents on 50 Baltimore street blocks, interviewing two times in one year. They found that changes in perceived incivilities accompanied changes in resident satisfaction and fear at individual levels. At the street-block level, however, objective disorder failed to demonstrate expected lagged impacts on fear of crime. Interestingly, however, changing objective disorder was accompanied by changing community satisfaction and perceptions of relative risk, but not fear.

Overall, perceptions of both physical and social disorder were significantly associated with fear of crime, social disorder showing stronger effects in some cases. Also, the effect of perceived disorder was more consistent than actual indicators of disorder in the neighborhood, implying that there would be contextual or other factors that affect symbolic interpretation of objective disorder even in the same neighborhood.

The Community Concern/Control Model

The community concern/control perspective proposes that fear rises as concerns of the neighborhood increase. Following the social disorganization tradition, neighborhoods high in social disorganization are less able to exert social control over residents, and provide fewer opportunities for residents to obtain needed social support (Sampson et al., 1997), which would increase concern with community problems and reduce feelings of safety. Crime instigates fear when residents' perceptions of

community dynamics developed into concern for the community (Taylor & Hale, 1986). Box et al. (1988) conceptualized neighborhood concern as a perception that the neighborhood is declining economically, and eventually environmentally. Garofalo and Laub (1978) explained that the sum of anxieties of public deviance is the basis for the concern with community, and since fear reflects urban unease (Garofalo & Laub, 1978), those who are concerned with neighborhood deterioration are more likely to fear crime.

This model also explained fear by way of social control dimensions. Fear is not just a consequence of a subjective response to victimization, it is a consequence of the erosion of social control (Ross & Jang, 2000). Neighborhood social control is "the ability of neighborhoods to control themselves and their environment through formal and informal relational networks so that the risk of crime is minimized" (Bursik & Grasmick, 1993, p.12). Rooted in systemic neighborhood control theory (Bursik & Grasmick, 1993), this perspective proposes that formal, informal, and private level social control dynamics are important in addressing crime and fear related issues. That is, reduced collective efficacy and increased social disorganization progress in both internal dynamics and external ties (i.e., public control), which increase concerns for safety (Taylor, 2001). This perspective is closely related to the disorder perspective since disorder represents the deterioration of local social control. Along this line, Taylor and Hale (1986) proposed a general path model in which perceptions of disorder as well as individual and environmental characteristics were linked to community concern, altogether predicting fear.

In prior studies, this perspective took into account concerns of neighborhood deterioration (Taylor & Hale, 1986), erosion of local social control (Lewis & Salem,

1986), and social instability and moral decline (Garofalo & Laub, 1978), as facilitators of fear. In a reverse direction, social ties or social integration (Gibson et al., 2002; Lewis & Salem, 1986), neighborhood collective efficacy (Gibson et al., 2002), and ties to local power structure, government responsiveness, or confidence in the local police (Box et al., 1988; Lewis & Salem, 1986; McGarrell et al., 1997) were considered as inhibitors of fear of crime. That is, community quality was maintained either by local customs, norms and informal sanctions, or by official rules and regulations usually through government institutions. Perceptions of deterioration of these informal and formal social control mechanisms were considered serious community concerns that increase fear of crime.

Much attention was given to informal social control dimensions in the belief that perceptions of neighborhood integration conceptualized as the capacity of a community to exert social control over its members and even strangers would enhance feelings of safety (Bursik & Grasmick, 1993). It was suggested that strong relational ties tended to formulate higher feelings of safety and less fear (Baumer & Hunter, 1979; LeBailly & Gordon, 1981). Also, collective efficacy, conceptualized as "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (Sampson et al., 1997, p.918), was considered as an agent of informal social control (Gibson et al., 2002).

Skogan and Maxfield (1981, p.120) tested two different measures of social integration, "cognitive and sentimental." Cognitive integration indicated people's awareness of their communities and knowledge of their prominent features, while sentimental integration represented emotional attachment, identification, positive evaluations, and other affective components. Their thesis was that fear would be low

when people knew about the areas of danger and safety and when community members expressed their willingness in their collective efforts to solve community problems based on their knowledge about local community conditions. As expected, both residential commitment and integration into local community systems were significant predictors of reduced fear. McGarrell, et al. (1997) realized that perceptions of informal social control, social support, and integration were related to lower levels of fear. Consistent with theoretical positions, they found that the more one perceived one's neighbors responding to rowdy youths, and the more one felt rooted in the community, the less one felt fear. Along the same lines, Box et al. (1988) found that people who perceived that their neighbors helped one another experienced lower fear. Similarly, research has reported that the effect of social integration on fear was mediated by collective efficacy, defined as the trustworthiness of neighbors and their willingness to intervene as informal social control agents (Gibson et al., 2002).

Some contrary results were also reported for the proposed association between community concern and fear of crime. LeBailly and Gordon (1981) investigated the effects of four forms of community involvement: neighborhood bonds measured as feeling of attachment to the locality, residential ties, social interaction with neighbors, and use of local facilities. Social interaction with neighbors and use of local facilities were not significant predictors of fear of crime even though neighborhood bonds and residential ties to the community were significantly related to the reduction of fear of crime. Katz et al (2003) attributed these mixed results to the wide range of variation in the conceptualization and the lack of simultaneous investigation of the various

dimensions of community concern on fear. Overall, much support for the community concern in informal social control dimensions and fear was evidenced.

The community concern perspective also takes into account perceptions of public social control in the community. Public control refers to the "ability of the community to secure public goods and services that are allocated by agencies located outside the neighborhood" (Bursik & Grasmick, 1993, p.17). The agencies with the most obvious relevance to crime control are law enforcement agencies. Confidence in the police and perceptions of government responsiveness have been recognized as two such dimensions (Box et al., 1988; McGarrell et al., 1997; Velez, 2001). In addition, the recent popularity of community policing is related to this theoretical development. One of the important goals of community policing strategies includes the reduction of fear of crime through diagnosing and managing problems in the community, fostering closer relationships with residents to facilitate mutual support, and building self-defense capabilities in the community (Trojanowicz, Kappeler, & Gaines, 1998). That is, police activities are expected to control local problems either directly by working closely with the neighborhood or indirectly via helping build informal social control abilities among residents (Trojanowicz, 1985).

Conceptualizing public social control as community ties to the local government and the police, Velez (2001) reported that public social control reduced household and personal victimization risk. Similarly, McGarrell et al (1997) found that perceptions of government responsiveness as well as informal social control in the neighborhood were important predictors of fear. It was also realized that people were less likely to fear crime if they believed the police were effective in crime prevention and clearance as well as

handling calls for services (Baker, Nienstedt, Everett, & McClery, 1983). Box et al (1988) also found that those who were confident in the effectiveness of the police for prevention and apprehension showed less fear. Also, people were less fearful of crime when they believed their neighbors would call the police if they noticed graffiti painting in progress (Covington & Taylor, 1991). The effect was greater in disadvantaged neighborhoods. "Public social control yielded greater benefits in neighborhoods with prevalent structural disadvantage than in neighborhoods with more affluence" (Velez, 2001, p.858).

Similarly, strong support for these assumptions was reported in neighborhood foot patrol program (Trojanowicz, 1985), and in the comparison between community policing neighborhoods and neighborhoods without elements of community policing (Cole & Kelly, 1992). In contrast some studies have found no significant effect in the assessment of the community contact program (Bennett, 1991) and in citizen perceptions of community policing activities (Dietz, 1997; Scheider et al., 2003).

The Subcultural Diversity Model

The subcultural diversity perspective has recently gained more attention in explaining fear of crime. Community conditions as stimulators of social disorganization include racial heterogeneity along with low socioeconomic status and residential mobility, which are proposed to be linked to crime and fear via social disorganization (Sampson & Groves, 1989; Shaw & McKay, 1942). Rooted in this key point of the social disorganization theory, the subcultural diversity perspective posits that the difference between one's ethnicity and that of surrounding neighbors stimulates fear because of the uncertainty and distrust coming from the difficulty of understanding values, attitudes, and

norms of people with different cultural backgrounds (Katz et al., 2003; Lane & Meeker, 2000). That is, the manners and behaviors of "others" are difficult to interpret, which lead to unease and fear (Katz et al., 2003, p.105). Since fear results from living near persons who have different cultural backgrounds, the extent of cultural or racial diversity in the neighborhood is related to levels of fear (Merry, 1981). Skogan and Maxfield (1981) noted that expression of concern about crime by many Caucasians was assumed to be rooted to a significant degree in their fear of African-American people. Merry (1981) also observed that Chinese residents were afraid of African-Americans because they could not understand the loud and unruly life style of African Americans in comparison to the quiet and Confucian culture of China. Therefore, racial heterogeneity was a major step toward explaining fear according to this perspective focusing on the variation of subculture in different racial and ethnic groups.

Research based in the subcultural diversity perspective generally have reported a significant link between racial dissimilarity or heterogeneity and fear of crime (Bennett & Flavin, 1994; Covington & Taylor, 1991; Katz et al., 2003; Lane & Meeker, 2000), suggesting the conflict of various backgrounds and cultures as a facilitator of fear of crime. Katz et al. (2003) found that concern about diversity had a significant impact on both general fear of crime and fear of gangs, suggesting that policy-makers need to reduce the public's fear of persons who were viewed as different from them to reduce fear of crime. Liska, Lawrence, and Sanchirico (1982) suggested that whites were less fearful where blacks and whites lived separately, and for nonwhites, fear of crime was influenced by the presence of other nonwhites. The authors concluded that cultural beliefs and stereotypes linking nonwhites to crime increased fear not only for whites but for

nonwhites as well. Covington and Taylor (1991) also reported that subculture differences among people living in the same neighborhood increased fear. Also, they suggested that the link between diversity and fear would be processed in the racially changing neighborhoods but not in the integrated ones, suggesting the importance of historical background of communities rather than simply exploring ethnic diversity alone. Racial prejudice was also considered important. St. John and Heald-Moore (1996) found that prejudiced Whites were more fearful than nonprejudiced Whites when they encountered a Black stranger.

However, Katz et al. (2003) cautioned that studies of race based in the subcultural diversity perspective could be misspecified because of its focus on the interpretation and perception of the behavior of "others" instead of the image or symbolism that "others" represent. They argue, based on conflict theory, that the majority group members may be threatened by the symbolism of the presence of the minority populations, but not the personal perceptions of different culture. Their arguments are consistent with Blumer's (1958) group position perspective of race prejudice in that a symbolic sense of group position based on structural power relationships is more important than feelings of individual members of different racial groups in explaining race-based prejudice and fear.

The Community Context Model

Community based predictors of fear of crime include perceptions of disorder, concerns of community social control, and different subcultures among racial or ethnic groups. Left out are other community conditions. These community conditions include the crime rate, concentrated disadvantage, and community instability, which are understood in the community context model. As social disorganization theory suggests,

community characteristics such as the economic gap, instability, and ethnic heterogeneity in neighborhoods are negative outcomes of urbanization (Sampson & Groves, 1989; Shaw & McKay, 1942). These negative conditions in an urban society lead to disorganized social values and norms, therefore providing crime-prone environments and stimulating offenders, all of which are responsible for crime and fear in the community.

Pioneered by Park, Burgess, Shaw, and McKay, the Chicago school influenced the early work on the effect of social conditions (i.e., economic disadvantage, population turnover) on social disruption (Vold, Bernard, & Snipes, 1998). Dividing the city of Chicago into five concentric zones, Park and Burgess (1925) explained that crime and delinquency burgeoned in the most disorganized area, Zone II, characterized as the area immediately around zone I, the central business district. Supporting this evidence, in their analysis of Chicago neighborhood characteristics and official records of juvenile delinquency, Shaw and McKay (1969) found that neighborhoods in transition showed the highest levels of delinquency. They explained the result based on the reduced capacity for social control and the weakened community social organization in urban communities. They recognized that neighborhoods characterized by economic disadvantage, residential mobility, and population heterogeneity were less likely to produce social organization and informal social control due to the lack of resources, time, and cultural commitment. Unlike the overemphasis on dimensions of disorganization of early social disorganization perspectives, the systemic model emphasizes social control based on social networks such as friends, family, and institutions (Bursik & Grasmick, 1993), as a mechanism to increase residents' capacity for social control. Simply put, social ties among family members, neighbors, and local institutions enhance residents' ability to control juveniles,

recognize strangers, and engage in guardianship behavior. Developing inquiries of Shaw and McKay (1942; 1969), Sampson and Groves (1989) reported that neighborhood cohesion mediates the relationship between social disorganization and crime. They explained the chain in that economic disadvantage, residential mobility, ethnic heterogeneity, and family disruption generated social disorganization (i.e., sparse local friendship networks, unsupervised teenage groups, and low organizational participation) which in turn, increased crime and delinquency in communities. More recently, Sampson et al (1997) found that collective efficacy, the combination of social cohesion and informal social control, had the potential to reduce and or reverse the effect of social disorganization on crime and fear of crime.

In addition, new urban sociology proposes that socioeconomic status and racial composition are important in situations for social control in the community. Rooted in conflict theory, this perspective posits that communities low in economic status and high in racial minorities would have fewer resources and less political power for community development (Sampson & Wilson, 1995; Taylor, 2001; Wilson, 1996). Fewer public service investments will be made in these communities compared to the affluent neighborhoods of a dominant race, thus hindering positive development and social organization in the community. Related to this perspective, Bursik and Grasmick (1993) emphasize the importance of the social control processes through the connection with the external coalitions and public agencies, suggesting that some communities are better connected than others and more effective in their social control on a parochial level. These theories suggest that community conditions are important in relation to community development and reduced violence and fear. Therefore, community-based models of fear

should include these indicators of community conditions, without restricting their scope to a few factors (i.e., disorder, racial composition).

In general, this community context approach differs from other community-based models (i.e. the disorder model, the community concern model, subcultural diversity model) in that the unit of analysis is not the individual (micro-level) but the neighborhood (macro-level) and in that the scope is beyond disorder and racial heterogeneity. The interests of the prior community based models are how neighborhood conditions are interpreted by various individuals instead of how such conditions directly influence people's fear of crime (Taylor, 2001). Closely related to the disorder and the subcultural diversity model, this community context perspective holds that community conditions such as crime rates, concentrated disadvantage, and residential stability would stimulate people's fear of crime (Cancino, 2002; Rountree & Land, 1996; Sampson et al., 1997a; Taylor, 2001). Ever since the broken window thesis (Wilson & Kelling, 1982), disorder has been considered to be a main accelerator of community decline. However, Taylor (2001) demonstrated that the magnitude of the impact of disorder on community deterioration was no more so than other community conditions such as high poverty rates and high initial crime rates. Sampson et al (1997) also demonstrated a significant association between variations in violence and three community conditions: concentrated disadvantage, immigrant concentration, and residential stability. Concentrated disadvantage was measured as the proportion of residential income below the poverty line, the proportion of households on public assistance, the proportion of female-headed families, the proportion of persons over 16 who are unemployed, the proportion of the population that is African-American, and persons under 18 per square mile (Sampson et

al., 1997, p.920). This study clearly demonstrated that models of fear of crime as well as crime itself should be broadened to include a wide range of indicators of community conditions.

Methodologically, research in this community context approach has combined citizen level surveys, census data for community characteristics, and police statistics for crime rates. Techniques for multilevel data analysis inevitably consider how community conditions are linked to fear of crime directly and indirectly through individual level perceptions (i.e., perceptions of disorder, community concern), providing the sound structure of this community context perspective. Such a design is consistent with the social disorganization theory proposing the association between neighborhood conditions and crime, and possibly fear, which is designed to be indirect via social disorganization in the neighborhood (Bursik & Grasmick, 1993; Shaw & McKay, 1942).

Multilevel research on fear of crime, based on this perspective, is relatively new and limited compared to investigations of the effect of community conditions on crime and delinquency. Relying on block to block field studies conducted in Baltimore in 1980 and 1994 and analysis of data collected in some official statistics, Taylor (2001) found that high poverty rates, high initial crime rates, racial composition, neighborhood exchange value, and home ownership were strong predictors of fear. He also observed that these structural factors were stronger than disorder in predicting fear, thus suggesting the position of theories and policies on neighborhood development would need to be furthered from the dominant focus on disorder to consider other factors such as economic well being as a long term strategy to reduce fear and crime.

By using the data from a victimization survey and annual police statistics in Seattle, Rountree & Land (1996) demonstrated the importance of social context as well as individual level factors in understanding increased levels of fear of crime. In this study, crime rates, measured by tract-level burglary rates, had important direct positive effects on perceived crime risk. In a non-metropolitan setting, using survey data from 1,125 citizens nested in 31 residential units located in Michigan, Cancino (2002) demonstrated that citizens from residential units with higher concentrations of property crime report higher levels of perceived fear. Also, using multilevel statistical analysis for the community, crime, and health data in Illinois, Ross, Mirowsky, and Pribesh (2001) found that residents of disadvantaged high crime neighborhoods have a higher sense of powerlessness to avoid the threat. Based on the perspective of this model, therefore, where one lives affects one's overall perceptions of fear of crime.

(3) Implications for Research

Predictive models designed to find factors of fear of crime have been addressed and research evidence has been reviewed. As stated, inconsistency in the measure of fear of crime was partly responsible for the mixed results of some models of fear. It is necessary to distinguish cognitive fear (or risk assessment) and emotional fear as well as global fear and crime-specific fear. Taylor and Hale (1986) indicated that outcome measures have been limited focusing on the popular NCS format, which raised methodological weaknesses discussed above. As an effort to overcome these shortcomings, Ferrero (1995) proposed a multi-item, specific, and emotional measure of fear of crime. That is, offense-specific measures were suggested to measure specific types of crime (Ferraro, 1995; Ferraro & LaGrange, 1987; Warr & Stafford, 1983).

Among several models of fear of crime, the community concern/control model appears to be less developed than others. Community concern based on the public, parochial, and private levels of social control needs attention, especially in relation to police-initiated endeavors for community safety. The popular debate over the efficiency of community policing in fear reduction could be addressed in this regard. The mixed results of community policing efforts on fear encourage further research. Box et al. (1988) reported that confidence in the police was an important predictor of fear of crime. In addition, the community policing thesis emphasizes that residents can address problems of crime and safety by securing ties with the police (Kelling & Coles, 1996; Trojanowicz, 1985), suggesting that the police could become an important ally. Hence, police-initiated endeavors to improve neighborhood quality and safety may be studied simultaneously with public satisfaction with police to clarify which of those dimensions are linked to reduced levels of fear of crime. In addition, the western ideology of community policing was introduced as a form of reform programs in many developing countries, but the effectiveness of such programs has not been tested empirically in those countries. It will build on our current knowledge to empirically identify the role of community - policing activities on fear of crime especially in the contexts that recently introduced Western forms of community policing.

In addition, the community context model was constructed to include community conditions that were not considered in prior community based models (i.e., the community concern model, the disorder model, the subcultural diversity model). These community conditions included crime rates, concentrated disadvantage, and community instability. Taylor (2001) reported that these community conditions were stronger

predictors of fear than the popular predictor, disorder. In this regard, he suggested that resident groups working in close collaboration with police and other city agencies and targeting needed resources to the community would be more important than strictly regulating order maintenance. To further imagine the magnitude and direction of the effect of the overall community conditions on fear, these community characteristics need to be simultaneously modeled along with disorder and individual level factors. Additionally, larger social contexts need to be taken into account for the explanation of fear. Based on the theory's definition of community, a multilevel approach on these community issues has given attention to small jurisdictions, narrowing the focus to micro-level communities or neighborhoods (Lauritson, 2001). Emphasis on micro units of community is important since community is a place where residents share basic social life and norms (Bursik & Grasmick, 1993; Wooldredge, 2002). Researchers, therefore, have given attention to small units defending their choices on the basis of within-group homogeneity in street block groups, tract groups, or census tracts that are similar on various census indicators (Wooldredge, 2002). Yet, the aspects of social contextual approach deserve further testing in bigger units. In a cross-national study of criminal victimization in 19 countries, for example, researchers realized that the chance to become the victim of crime was not only determined by the opportunities and conditions associated with the neighborhood's capacity to exercise social control, but also by aspects of larger social structures such as districts, cities, or countries (Van Wilsem, De Graaf, & Wittebrood, 2000).

All of the predictive factor models reviewed so far could be designed in a testable causal model. Some relatively early research attempted to explain the causal link

connecting predictors and fear of crime. Garofalo's (1981) general model proposed both causes and consequences of fear of crime in a causal path from the position in social space to social outcome via fear of crime. According to the model, socioeconomic structure decides a position in social space (i.e., different life style for daily activities, vocation, leisure, etc.). The position in social space influences the perceptions of the amount and the nature of crime to which the person is exposed, which influences their risk of victimization assessment based on the information obtained about the prevalence of crime, likelihood, physical vulnerability, and consequences of possible injuries. This risk assessment eventually shapes actual and anticipated fear. Also, the level of fear generates responses such as avoidance and protective behavior, etc. Again, these responsive behaviors have some feedback effects, for example, on risk assessment by decreasing the risk through avoidance or protection. Eventually, this process, from the position in social space to responsive behavior, is linked to both positive and negative outcomes in society. Skogan and Maxfield (1981, p.17) proposed another causal but very complex model suggesting multiple predictors such as "personal and household vulnerability, city of residence, neighborhood conditions, victimization experience, media exposure, personal communication networks, knowledge of events, knowledge of victims," which are all structurally related to fear of crime that eventually generates responsive behavior (e.g., role constraints).

Garofalo's (1981) and Skogan and Maxfield's (1981) models were designed with the intention to capture the causal link among predictors, fear of crime, and personal and social consequences. However, they do not fulfill an important element of theory, which is testability (see Lee, 1998; Taylor and Hale, 1986). These two general models

exacerbate the difficulties of empirical tests by not connecting together different propositions and not providing a testable range of design. To overcome this limitation, Taylor and Hale (1986) designed three separate causal models in a testable range: the victimization, the disorder, and the community concern models. Among the three causal models, the community concern causal model is more comprehensive than the others because it includes community conditions and perceived disorder and community concern in one causal dimension. Taylor and Hale's (1986) three separate models, however, beg the question of how to link these models to test them simultaneously. Ferraro (1995) proposed one of the most comprehensive models in a testable format (see Figure 1). His model considered both macro and micro conditions as well as perceived risk and behavioral adaptation as causal predictors of fear.

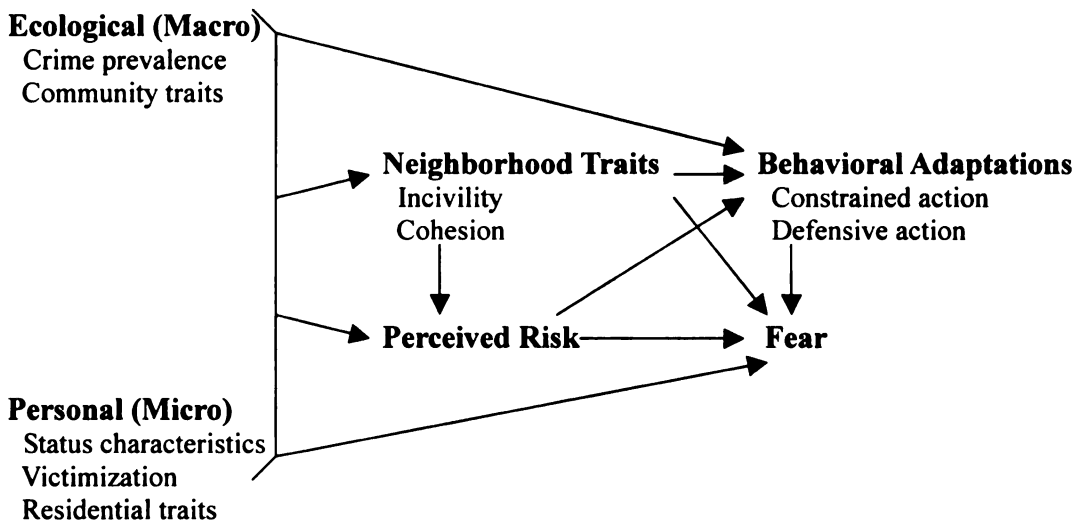

Figure 1. Risk Interpretation Model (Ferraro, 1995)

Ferraro (1995) explained how macro and micro level factors shape individual perceptions, risks of victimization, behavioral changes, and eventually fear of crime. Adding to the three models by Taylor and Hale, Ferraro's model included risk assessment

and behavioral adaptations as major factors. Ferraro's (1995) model is more inclusive than Taylor and Hale's (1986) three separate models by framing all predictors together. Lee (1998) extended Ferraro's works by furthering the predictors at both macro and micro levels and successfully investigated factors of fear of crime among Korean Americans residing in metropolitan Chicago, but the basic structure of Lee's (1998) model was the same as Ferraro's risk interpretation model. While Ferraro's model significantly enhanced our knowledge on the causal factors of fear of crime, there appear to be some ways to improve this model. First, it is possible to explain all predictors in theoretical or conceptual perspectives. As described in this chapter, scholars have recognized the community context model, community concern/control model, disorder model, and victimization model in explaining fear of crime. The causal frame is more theoretically parsimonious when all of the variables in the causal process are considered in conceptual or theoretical models that have been developed to explain theoretical links between these factors and fear. Second, different from previous causal models, Ferraro (1995) included behavioral adaptations as one of the factors of fear instead of considering it as the result of fear. In the risk interpretation model, therefore, behavioral adaptation plays the role as reaction to perceived risk and as a predictor of fear. This design was based on a reciprocal relationship between fear and constrained behavior such as an escalating loop exists (Liska, Sanchirico, & Reed, 1998). While such a design helps explain how constrained behavior further enhances fear, the impact of fear on varying behavioral adaptations cannot be investigated even though this has been one of the major interests in studies of fear of crime (see Garofalo, 1981; Skogan & Maxfield, 1981). Earlier causal models considered behavioral adaptations as the negative result of fear

This trend is in contrast to the analysis of urban life in major U.S. cities where poverty is clustered right next to the business district. Park and Burgess (1925), for example, identified five concentric zones radiating out from the center of Chicago. Unlike in Seoul, the zone in transition characterized by poor residents, population turnover, and abandoned buildings was located right next to the central business district in Chicago. This difference in the process of city development in Seoul, compared to major U.S. cities, may generate unique patterns in the effect of district-level predictors on fear of crime in Seoul.

Table 1. Administrative Districts, Population, and Sample Size in Seoul

Gu (District)	Dong (Community)	Tong (Sub-Community)	Population	Sample
1. Gangnam-Gu	26	988	536,031	40
2. Gangdong-Gu	21	766	479,270	32
3. Gangbuk-Gu	17	368	362,094	25
4. Gangseo-Gu	22	543	539,673	28
5. Gwanak-Gu	27	723	526,971	25
6. Gwangjin-Gu	16	530	388,659	13
7. Guro-Gu	19	576	419,438	24
8. Geumcheon-Gu	12	383	267,355	26
9. Nowon-Gu	24	945	633,934	45
10. Dobong-Gu	15	512	378,166	12
11. Dongdaemun-Gu	26	608	386,814	24
12. Dongjak-Gu	20	615	413,204	26
13. Mapo-Gu	24	666	383,629	27
14. Seodaemun-Gu	21	552	361,754	14
15. Seocho-Gu	18	732	400,220	27
16. Seongdong-Gu	20	489	343,929	26
17. Seongbuk-Gu	30	565	456,535	25
18. Songpa-Gu	28	979	623,267	40
19. Yangcheon-Gu	20	489	489,257	42
20. Yeongdeungpo-Gu	22	695	410,952	19
21. Yongsan-Gu	20	473	240,723	13
22. Eunpyeong-Gu	20	669	476,843	41
23. Jongno-Gu	19	402	181,441	10
24. Jung-Gu	15	337	138,798	10
25. Jungnang-Gu	20	662	438,011	40
Total	522	15,267	10,276,968	654

Note: The source of the Census data is the Korea National Statistical Office (2005).

As described in Table 1, there are 25 autonomous "Gu" and these were under the control of the Seoul Metropolitan government, but have been functioning as self-governing administrative units since July 1995. Under the control of 25 Gu (district), there are total 522 sub-units of "Dong (community)" that provide close, first-hand services for the residents. As sub-units of "Dong," there are several thousand "Tong (sub-community)."

At the request of the KIC, a professional private research company in Seoul conducted door to door interviews with a sample of randomly selected citizens residing in the city. The survey strategy here is described based on Kim's (2003) explanation. A stratified sampling method was utilized to develop a representative sample of Seoul citizens. There are 25 Gus, 522 Dongs, and 15,267 Tongs in the city. To begin, 50 Dongs were selected. The number of selected Dongs in each Gu varied from one to three depending on the population size of the Gu. As the next step, two Tongs were randomly selected from each Dong. The total number of selected Tongs in 50 Dongs therefore total 100. The research administrators then chose six or seven households in each of the 100 Tongs and one family member of each household was interviewed. The first criteria for the selection of interview subjects was citizens between the ages of 20 and 70 years old. The survey administrator then decided one citizen in each household in a way to consider the even distribution of gender (50 percent of male and 50 percent of female) and age (20 percent for each of twentieth, thirtieth, fortieth, and fiftieth and over). After selecting the sample based on the telephone book and census data, the trained company employees contacted selected citizens in all 25 Gus in Seoul. The survey was based on door-to-door interviews. Respondents answered the survey by themselves in the presence

2. Data

To assess the effects of social conditions and individual level attitudinal dimensions on fear of crime, data were collected from three independent sources in Seoul, South Korea. These data sources include: 1) community survey data, 2) census data, and 3) official police crime records. The collection procedures are described in the following subsections.

(1) Survey Data

In Seoul, the Korean Institute of Criminology (KIC) directed the design and collection of the survey data. The participants in the study were citizens over 19 years old in Seoul, the capital city of South Korea. In order to provide insight into the geographical composition of Seoul, a brief description is provided based on information from the city's official publication (Seoul City Government, 2005). The fifth largest city in the world, the Seoul megalopolis has a population of about 10.3 million, which is about a fourth of the total population of South Korea. The total area of Seoul is 605.52 square kilometers, or 0.6 percent of the entire country. The Han River divides the city into two parts: northern (Gangbuk) and southern (Gangnam).

Figure 3 presents population density and Figure 4 presents population living in poverty in Seoul. The comparison between patterns of density and poverty indicates that the process of city development in this city is different from that of major U.S. cities. The density is intense except in the business district in the center of the city and the areas close to the city border (see Figure 3), while the poverty is clustered around the city border (see Figure 4). It indicates that wealthy citizens are residing in inner city areas in Seoul.

explain not only fear, but also perceived risk and behavioral adaptations. Structurally, perceived risk was considered as a major mediator between conceptual models and fear. Unlike Ferraro's risk interpretation frame, behavioral adaptation was considered as the reaction to fear as well as perceived risk. Every variable is understood in conceptual or theoretical perspectives and the hypothesized direction between fear and behavioral adaptation is straightforward in this causal frame. Interrelationships among exogenous variables were also specified in this revised model, but they may not be tested in a small sample situation, a possible limitation of this study.

Finally, it is not clear if models of fear of crime are applicable in culturally distinct settings due to the lack of sufficient empirical research to test these models beyond U.S. or Western contexts (Some exceptions in Eastern Asian context include Curran & Cook, 1993; Ito, 1993; Lee, 1997). Limited research implied that cultural differences might generate some unique patterns in Eastern Asian cultural context especially regarding age (Curran and Cook, 1993), and perceptions of informal and formal social controls (Lee, 1997). Tests of these models in a comparative context may help extend our understanding of the ability of these models to explain fear of crime.

This chapter described controversies regarding the concept of fear, reviewed conceptual factor models, and clarified research directions based on the knowledge drawn from the review of literature. To further investigate these research inquiries, the next chapter specifies the hypotheses to be tested, the methodological design, and identifies and defends the measurements of the independent and dependent variables. Hierarchical Linear Modeling (HLM) is also discussed in the next chapter as the major analytic strategy.

(Garofalo, 1981; Skogan & Maxfield, 1981), indicating that behavioral adaptations occurred as responses to fear as well as perceived risk. People constrain their actions or adopt defensive actions to deal with not only perceived risk but also fear (Skogan & Maxfield, 1981), and a passive life pattern among community members further deteriorated the community by decreasing liveliness and integration (Kelling & Coles, 1996; Moore & Trojanowicz, 1988). It will build on our knowledge to investigate the impact of fear on different types of life patterns by considering behavioral adaptations as the response to fear as well as perceived risk.

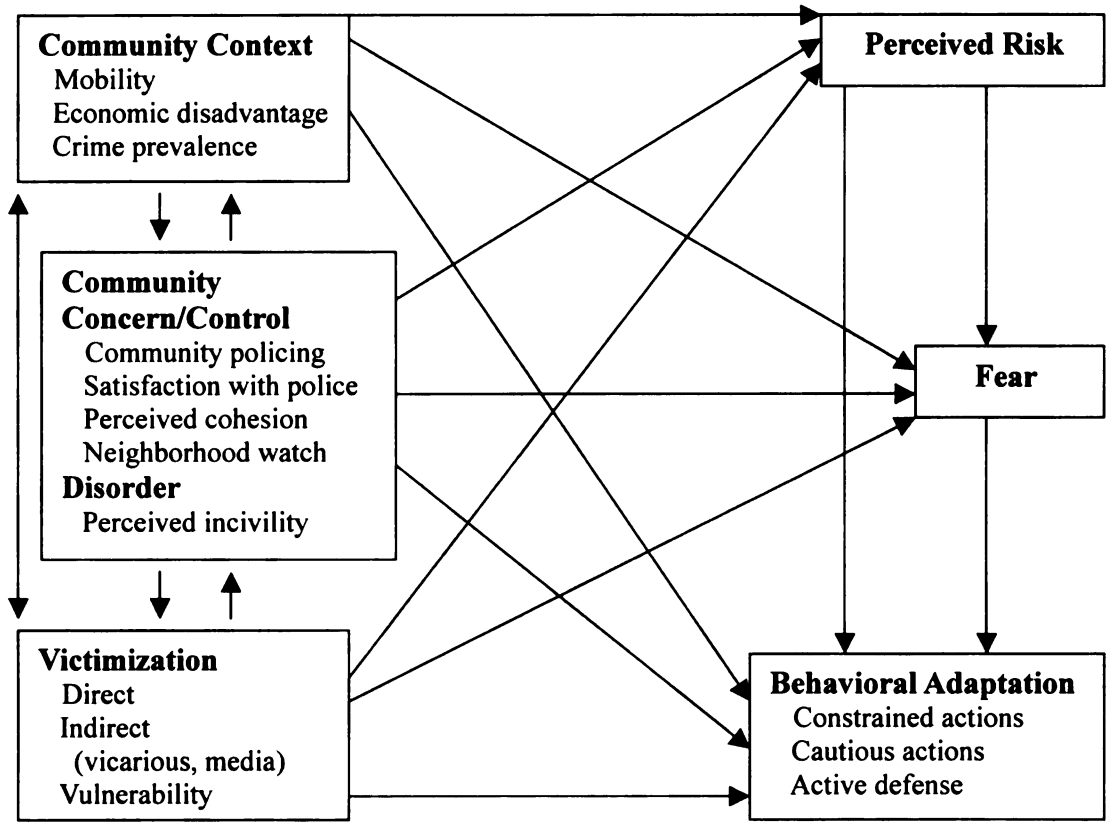

Figure 2. A Revised Causal Model

Figure 2 presents a revised causal frame for this study. All predictors of fear are included in four conceptual models in this causal frame. These four conceptual models

CHAPTER FIVE
METHODOLOGY

Following up on theoretical frames of fear of crime and the revised version of the risk interpretation model, this chapter specifies a series of research hypotheses to be tested. A detailed outline of the methodological procedures including a description of the sample and operationalization of variables is also provided in this chapter. In addition, this chapter provides an overview and justification of the analytic strategies that will be employed. Prior studies have recognized four different conceptual models applicable to fear of crime in Korean context: the victimization model, the disorder model, the community context model, and the community control model. This study tests these models in a causal frame in which risk assessment, fear, and behavioral adaptations are all predicted by these conceptual factors. In addition, perceived risk is considered as a mediator between these conceptual models and fear, and behavioral adaptations are designed as the response to fear as well as perceived risk. It is expected that, in addition to their direct effects on fear, conceptual factors increase perceived risk, and this eventually enhances fear. Then, both perceived risk and fear would force citizens to adopt behavioral adaptations. In addition, two of the conceptual models, the community context model and the community concern/control model, are major foci of this study, thus yielding two principal hypotheses. First, based on the extension of the community context model, those who live in a district with higher economic disadvantage, higher mobility, higher crime, and higher population density are likely to perceive a higher level of fear of crime than those who do not, holding constant the effect of demographics and other predictors of fear of crime. Second, based on the community concern/control perspective, it is expected that citizen perceptions of community-policing activities will

be related to fear of crime. Also, the inclusion of some control variables is essential to control for spurious effects in assessing fear of crime. This study therefore includes other factors of fear of crime such as length of residency, volunteer activities for crime prevention, and cross level interactions.

1. Hypotheses

(1) Social Conditions and the Community Context Model

As discussed, economic disadvantage and residential instability facilitates social disorganization while difficulties of informal social control in communities contribute to an increase in crime and violence and a decrease in the sense of quality of life (Sampson & Groves, 1989; Shaw & McKay, 1942). The mechanism of community deterioration is that social disorganization and the reduced ability of a community for informal social control increases social and physical disorder and stimulates fear of crime which in turn further deteriorates the community (Skogan, 1990). Poor neighborhoods lack social, political, and economic resources to build an organized community. Mobility, as an indicator of population turnover, reduces the ability to build mechanisms of social organization, which leads to crime and fear. Individuals in high crime areas are likely to perceive their vulnerability and tend to express fear due to crime in their neighborhood (Taylor, 2001). Finally, population density is recognized as a direct indicator of crime (Osgood and Chamber, 2000) or indirect factor via inhibiting community collective efficacy (Sampson and Raudenbush, 1999). It is expected that citizens in areas of higher population density are likely to higher levels of fear, considering the positive effect of crime on fear. Scholars have recognized, therefore, that aggregate levels of economic disadvantage, mobility, crime, and population density serve as predictors of fear of crime. The following relationships are hypothesized:

H1a: Citizens in districts of higher mobility are likely to express higher levels of fear of crime.

H1b: Citizens in districts of higher economic disadvantage are likely to express higher levels of fear of crime.

H1c: Citizens in districts with a higher crime rate are likely to express higher levels of fear of crime.

H1d: Citizens in districts with a higher population density are likely to express higher levels of fear of crime.

(2) Community Policing and the Community Concern/Control Model

Community concern/control dimensions include both informal and formal social control dimensions. Perceptions that public social control agents are reliable and community based crime prevention efforts are on the right track enhance the sense of safety and reduce fear of crime (Moore & Trojanowicz, 1988). In addition, the notion that neighbors are willing to support each other reduces fear of crime (Gibson et al., 2002). Importantly, community-policing practice was recognized under this model and it is expected that citizen perceptions of community-policing activities will be related to fear of crime. The following relationships are hypothesized:

H2a: Citizens who perceive community policing activities in their neighborhood are likely to express lower levels of fear of crime.

H2b: Citizens who are more satisfied with police are likely to express lower levels of fear of crime.

H2c: Citizens who perceive higher levels of community cohesion are likely to report lower levels of fear of crime.

H2d: Citizens who have a neighborhood watch team in their community are likely to express lower levels of fear of crime.

(3) The Victimization Model

The victimization model of fear of crime posits that direct and indirect victimizations predict fear of crime. In addition, the vulnerability thesis is also understood as a dimension of indirect victimization. Those who are less able to defend themselves and those who have less resources to handle the consequences of crime tend to be more afraid of crime (Smith & Hill, 1991). Thus, the following relationships are hypothesized:

Direct Victimization:

H3a: Citizens who have experienced victimization in the past are likely to express higher levels of fear of crime.

Indirect Victimization:

H3b: Citizens whose family members, relatives, or friends have been victimized in the past are likely to express higher levels of fear of crime.

H3c: Citizens who feel the media cover crime issues over other issues are likely to report higher levels of fear of crime.

Vulnerability:

H3d: Citizens with lower socioeconomic status are likely to express higher levels of fear of crime.

H3e: Female citizens are likely to express higher levels of fear of crime than male citizens.

H3f: Older citizens are likely to express higher levels of fear of crime than younger citizens.

(4) The Disorder Model

Disorder is a result of social disorganization and a symbol of the deterioration of community social control. Addressing disorder, as suggested by the "fixing broken windows" thesis has been considered an important measure to reduce both crime and fear of crime. Studies have recognized both social and physical disorders as predictors of fear

of crime (Kelling & Coles, 1996; Skogan, 1990). The following relationship is hypothesized:

> H4: Citizens who perceive higher levels of physical and social disorder in their neighborhoods are likely to express higher levels of fear of crime.

(5) Perceived Risk, Fear, and Behavioral Adaptations

Perceived risk of victimization produces a variety of outcomes including behavioral adaptations and fear of crime (Ferraro, 1995). Fear of crime eventually forces citizens to adopt constrained and cautious actions (Skogan and Maxfield, 1981). Based on the revised causal frame in Figure 2, the question of how perceived risk affects behavioral adaptation and how fear influences behavioral adaptation is tested here. The following relationships are hypothesized:

> H5a: Citizens who perceive higher risks of victimization are likely to express higher levels of fear of crime.
>
> H5b: Citizens who perceive higher risks of victimization are more likely to adopt constrained actions, cautious actions, and active defense.
>
> H5c: Citizens who perceive higher levels of fear are more likely to adopt constrained actions, cautious actions, and active defense.
>
> H5d: Citizens who perceive higher risks of victimization are likely to express higher levels of fear of crime which is likely to increase their constrained actions, cautious actions, and active defense.

A series of research hypotheses were specified above focusing on the predictors and the results of fear of crime. Even though all hypotheses are designed regarding fear since the focus of this study is investigating factors and results of fear, the analyses will include tests of the associations between the conceptual factors of fear and perceived risk as well as behavioral adaptations.

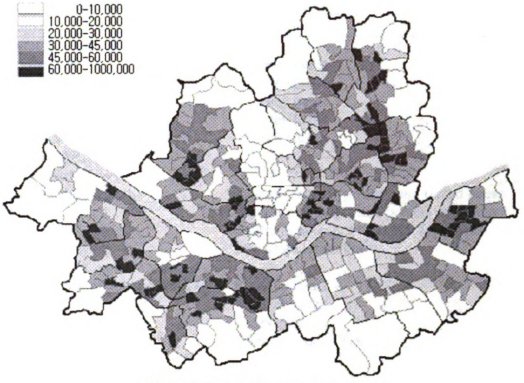

Figure 3. Population Density in Seoul

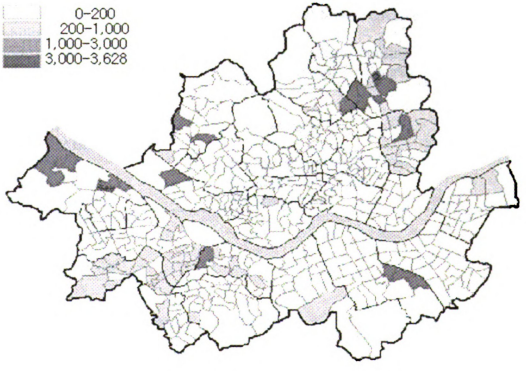

Figure 4. Population living in Poverty in Seoul

Table 2. Description of Variables

Variable Name	Description
ENDOGENOUS VARIABLE	
Fear of crime (a)	8 survey items
Perceived risk (a)	8 survey items
Constrained Actions (b)	5 survey items
Cautious Actions (b)	5 survey items
Active Defense (b)	2 survey items
EXOGENOUS VARIABLE	
Community Context Model	
Economic disadvantage (b)	Percent living in poverty and rented house
Mobility (b)	Percent moved out and percent moved in
Crime (b)	(crime/population)*100,000 for 9 types
Population Density (c)	Log (Population/km^2)
Community Concern/Control Model	
Perceptions of community policing (a)	6 survey items
Satisfaction with police (a)	7 survey items
Community cohesion (a)	5 survey items
Neighborhood Watch	Dummy coded (Yes=1)
Victimization Model	
Direct victimization	5 survey items: Dummy coded (Yes=1)
Indirect victimization	
Indirect experience	8 survey items: Dummy coded (Yes=1)
Crime on media	Dummy coded (Over covered=1)
Vulnerability	
Socioeconomic status (b)	Education, income, housing
Female	Dummy variable (1=female)
Age	Age in years
Disorder Model	
Perceived incivility (a)	7 survey items
CONTROL VARIABLE	
Length of residency	In years and months
Volunteer activities	Dummy coded (Yes=1)
Cross level interactions	see description

Note: (a) Factor based additive scale.
(b) Weighted factor score.
(c) Natural log.

Perceived Risk

As a measure of risk assessment, a perceived risk was a factor-based scale corresponding to the respondents' ratings of the general risk victimization for each of eight types of crime:

Street robbery

computers in the Korean National Police Headquarters. Nine types of crime data for the entire year in 2004 were obtained.

3. Measurement in the Study

(1) Endogenous Variables

Fear of Crime

The major outcome variable is fear of crime. As discussed, the popular measures of fear of crime research, especially those used for the National Crime Victimization Survey and General Social Survey, were criticized due to the vague nature. Specifically, they do not consider types of crime and emotional stimulus. Recognizing this shortcoming, Ferraro (2005) introduced a crime specific measure of fear in which respondents are asked to rate how fearful they would be being a victim of twelve different types of crime largely classified into personal and property crimes. This measure considers the emotional state of fear by including the phrase "how fearful" or "how afraid." This measure is also advantageous because it asks how individuals feel in everyday situations instead of hypothetical situations of walking alone at night. The measure used in this survey, therefore, follows Ferraro's (1995) specific measure of fear. Respondents were asked to rate how afraid they would be in their everyday life regarding these eight specific crimes:

Having somebody break into their home and steal money or valuables while they are away
Having somebody break into their home and take money or valuables by threatening or assaulting them and their family
Being pick-pocketed or purse-snatched on the street
Being robbed or mugged on the street
Being assaulted by a gangster or a stranger (except sexual assault)
Being sexually assaulted by a stranger
Having somebody kidnap or abduct them or their family
Having somebody break into their home and hurt their family

The response categories were provided based on the four point scale "not afraid at all, not afraid, afraid, very afraid." Exploratory factor analysis with Varimax rotation method confirmed that these items were associated with a single latent construct (Eigenvalue = 4.93, percent of variance = 61.63, factor loadings > .73). The magnitude of internal consistency (alpha=.91) indicated a high level of reliability among items. Fear of crime, therefore, was operationalized as both a factor based scale and a weighted factor regression score. A factor based additive scale was considered over a weighted factor regression score to allow for a meaningful interpretation of various results. A weighted factor regression score was also used in case standardized score is necessary for outcome variables for direct comparison purposes. It was checked, however, that the analyses using the weighted factor regression score did not show any substantial difference from the results of the analyses employing this factor based additive scale.

of an interviewer or they were assisted by the interviewer in case it was necessary due to age or other reasons. For example, the survey was read and filled in by the interviewer based on the answers from the respondents when the subjects preferred such a method. The survey was conducted for 20 days during the summer of 2003 and a total of 654 responses were collected by the use of this method.

(2) Census and Crime Statistics

In addition to the survey data, census statistics and crime data were obtained to measure district level social conditions. Since the citizen survey was conducted late in 2003, district-level statistics for the entire year of 2003 were considered to represent the district-level environments at the time of the survey response. Crime, however, was measured based on police statistics in 2004. In 2004, the Korean police introduced a new place-based crime recording system in which crimes were recorded based on the place it occurred, contrary to the previous system focusing on police stations that handled those crimes regardless of where they occurred. The place-based crime statistics were considered more accurate than those in the previous system. Furthermore, crime statistics were classified based on government jurisdictions in addition to police jurisdictions from the year 2004. For this study, it was necessary to classify both census statistics and crime data based on government jurisdictions because the survey was conducted in all government districts in Seoul.

In this study, social context is defined as districts (Gu) in Seoul. Census statistics to measure district level economic disadvantage, mobility, and population density for the entire year in 2003 were gathered from the Korean Statistical Office data archive. Police statistics regarding crime rates were obtained from the official statistics recorded in

Sexual assault by a stranger
Gang assault
Theft
Burglary
Kidnapping, abduction
Pick-pocketing, purse-snatching
Auto theft (including car accessories and other valuables)

Respondents were asked to indicate their assessment of the risk of victimization for each type of crime based on the scale "1: (very low), 2: (low), 3: (medium), 4: (high), 5: (very high)." Factor analysis and reliability test were employed to check the latent construct (Eigenvalue = 4.83, percent of variance = 60.44, factor loadings > .72) and the internal consistency (alpha = .91).

Behavioral Adaptations

Some of the important hypotheses for this study were that citizens adopt behavioral adaptations as their response to perceptions of risk and fear. To test the hypotheses, three different types of defensive actions were operationalized: constrained actions, cautious actions, and active defense.

These three variables were measured based on weighted factor regression scores. There were several survey items for various types of defensive actions. It was necessary to combine these items into scales to address the issue of multicollinearity and to build reliable variables. Factor analysis with oblique rotation method was used to guide this process. Each item incorporated a four-point scale ranging from never to always. Table 3 illustrates that these survey items are associated with three latent constructs, thus yielding a clear three factor solution (Eigenvalue = 3.41, 1.70, 1.53). Five survey items under factor 1 were associated with constrained actions for self-safety. Mean of items (1.97) indicated that citizens sometimes adopted constrained actions for self-safety such

as avoiding dangerous places, avoiding going out at night, not possessing cash or valuables, etc. Five survey items under factor 2 were associated with cautious actions. Mean of these items (2.11) indicated that citizens sometimes adopted cautious actions such as locking windows, leaving the light on while they are away, asking neighbors to watch their homes, etc. Two survey items under factor 3 were associated with active defense for self-safety. Mean of these items (1.29) indicated that citizens rarely adopted active actions for self-safety such as carrying a self-defense weapon, learning a self-defense tactic, etc.

Table 3. Rotated Factor Matrix of Behavioral Adaptations.

Variables	Factor I	Factor II	Factor III
	PL / PS (a)	PL / PS (a)	PL / PS(a)
Constrained Action (Mean = 1.97*)			
I avoid dangerous places even when it is time consuming	.79/ .76	.06/ .24	-.21/-.03
I avoid going out after 10 pm so not to be victimized	.60/ .67	.06/ .29	.26/ .40
I ask one of my family members to pick me up when I come home late	.64/ .71	-.01/ .26	.31/ .45
I ask someone to accompany me when I go out late at night	.74/ .77	-.05/ .21	.19/ .35
I do not carry much cash or valuables	.76/ .66	-.08/ .07	-.33/-.18
Cautious Action (Mean = 2.11)			
I always lock windows	-.06/ .10	.58/ .55	-.06/ .06
I keep my cash or valuables in a safe	-.08/ .16	.64/ .67	.22/ .34
I leave the light on at home when I go out	.30/ .11	.70/ .72	-.06/ .12
I ask my neighbor to watch my home when I'm away for one or two days	-.07/ .15	.71/ .70	.06/ .21
I arrange newspapers and milk not to be delivered to my home when I'm away for several days	.09/ .27	.73/ .72	-.16/ .02
Active Defense (Mean = 1.29)			
I carry a self-defense weapon such as gas gun or electronic shocker	.04/ .22	-.04/ .16	.85/ .85
I learn self-defense tactics	-.07/ .10	-.01/ .15	.80/ .78
Eigenvalue	3.41	1.70	1.53
% of Variance	28.35	14.19	12.72

Note: Principal Component Analysis of extraction and Promax with Kaiser Normalization rotation method.
(a) Pattern Loading / Pattern Structure.
* 1:Never, 2: Sometimes, 3:Often, 4: Always

Weighted factor regression scores were generated for these three factors. Item means indicated that citizens were most likely to adopt cautious actions, followed by constrained actions, and active defense.

(2) Exogenous Variables

Social Conditions

In addition to citizen-level measures, the current study also considered the impact of social conditions that are suggested to be correlated to fear of crime. In this study, social context is defined as districts (Gus) in Seoul. Social conditions are operationalized using four variables: economic disadvantage, mobility, crime, and population density. Previous research has demonstrated that residents of disadvantaged, high-mobility, and high-crime areas expressed higher levels of both crime and fear of crime than those in relatively affluent, high-stability, and low-crime areas (Lewis & Maxfield, 1980; Sampson, Raudenbush, & Earls, 1997; Skogan, 1986). Community-level population densities were also recognized as a predictor of both crime (Osgood & Chambers, 2000; Rasko, 1979), and subsequently fear of crime. It was expected that the situation would be the same with a context larger than areas or communities, in this case, districts. Census data included percent of individuals living in poverty, percent rented house, percent moved in, percent moved out, population, and size of each district. Crime statistics included murder, robbery, rape, larceny, assault, arson, drug offense (i.e., buying, selling, using), abduction, and gambling. Table 4 presents the loading pattern from the factor analysis among district-level variables. Three factors with eigenvalues greater than 1.0 were extracted. Given the loading pattern for three factors, three variables were constructed: economic disadvantage, mobility, and crime.

Table 4. Factor Pattern for Social Condition Variables (N = 25)

Variable	Factor I	Factor II	Factor III
ECONOMIC DISADVANTAGE			
Percent Rented House	.297	.170	.847
Percent living in Poverty	.017	-.404	.659
MOBILITY			
Percent Moved In	-.154	.850	-.119
Percent Moved Out	.069	.900	.158
CRIME			
Murder (b)	.520	-.227	-.329
Robbery (b)	.757	.277	.027
Rape (b)	.890	.128	.246
Larceny (b)	.872	-.013	.230
Assault (b)	.926	-.092	.229
Arson (b)	.865	-.249	.081
Drug offense (b)	.861	-.121	.230
Abduction (b)	.678	-.037	-.236
Gambling (b)	.912	-.028	.046
Eigenvalue	6.351	2.029	1.400
% of Variance	48.855	15.605	10.773

Note: Factor loadings greater than .50 are underlined.

(b) Number of crimes per 100,000 persons.

Economic disadvantage: This was a weighted factor regression score that includes percent below poverty level and percent renter-occupied housing units. These two census statistics for the year 2003 were obtained from the Korean Statistical Office. Items were selected referring to those designed by guiding theorists in the field (see Sampson et al., 1997). Some Census statistics available in the U.S. are not necessarily available in Korea. For example, census items such as percent black, percent female-headed household are available in the U.S. but not in Korea, and so these census items could not be included. Considering each item's differential contribution to concentrated disadvantage, a factor regression score was calculated to weight each variable by its factor loading.

Mobility was measured as a weighted factor regression score that included the following 2003 census items: percent moved in and percent moved out. It was based on

the percent of people moved in and moved out during the year 2003. Percent moved in and percent moved out were calculated based on the number of citizens moved in or moved out divided by population and multiplied by 100.

Crime: This is an important characteristic to gauge the district-level social condition. This variable was a weighted factor regression score based on nine-types of crimes. In Korea, crimes were generally classified as five-index crimes such as murder, rape, robbery, larceny, and assault. More recently, crimes are often classified as nine types adding arson, drug offense (i.e., buying, selling, using), abduction, and gambling. These crimes are slightly different from index crimes in the United States. The difference may come from the variation in societal recognition of crime as serious and frequent as well as the discrepancy in crime definition between the two countries. In the U.S., there are eight types classified as index crime: murder, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, and arson. The same definition is used for murder and rape in both countries, although assault in Korea is defined as both aggravated and non-aggravated assault. In addition, burglary is classified into either larceny or robbery in Korea. When someone enters a building with the intent to commit a felony or to steal valuable property, the terms "entering and larceny" or "entering and robbery" are used instead of "burglary" for legal process and punishment based on Korean criminal law. These crimes, however, are classified into either robbery or larceny in the police crime statistics, showing a discrepancy of the definition between statistical classification and legal procedure. For example, if someone enters a house and steals valuable property, it is classified into "entering and larceny" for legal procedure but "larceny" in police data archive. On the other hand, if she or he enters a house and

threatens people to take valuable property, it is classified into "entering and robbery" for legal procedure but "robbery" for statistical purposes. In each category (i.e., robbery, larceny), however, the specific method of crime such as entering and robbery, or street robbery, are explained in police statistics. Statistics of nine index crimes for the year 2004 were obtained from the Korea National Police Agency. Exploratory factor analysis confirmed that these nine types of crime are associated with a single latent construct (Eigenvalue = 6.12, percent of variance = 67.99). Factor loadings ranged from .52 to .93. Considering each item's differential contribution, a factor regression score was calculated to weight each crime by its factor loading.

Population density: Another indicator of social condition, population density was measured based on population divided by square kilometer for each district. This variable, therefore, measures number of residents per square kilometer. Due to the varying distribution of population from district to district, a natural log transformation was employed for this variable.

Community Concern/Control

Four variables were considered under this model: perceived community-policing activities in the neighborhood, satisfaction with police, community cohesion, and neighborhood watch.

Perceived community-policing activities: This variable was a factor-based scale. Citizen perceptions of community-policing activities in the neighborhood are measured based on citizens' perceptions of police activities related to community oriented policing strategies. Considering the definition of community policing, operational dimensions were classified into three categories: community partnership, problem solving, and

organizational change (Dietz, 1997; Trojanowicz et al., 1998). Among these three dimensions, police efforts for community partnership and problem solving were directly visible activities in the community. Six items were designed to reflect such activities:

The police in my community let residents participate in such activities as planning or evaluating crime prevention activities
The police in my community often promote a friendly meeting with residents
The police and residents work together in a high crime district
The police in my community visit residents' houses or business places to provide helpful advice for crime prevention and to promote public relations
The police in my community ask residents for active cooperation
The police in my community provide helpful information for crime prevention through a letter or neighborhood meeting

Respondents were asked to rate the police practices described above based on the four point scale "strongly disagree, disagree, agree, strongly agree." Factor analysis and reliability test were employed to check the latent construct (Eigenvalue = 3.85, percent of variance = 64.10, factor loadings > .74) and the internal consistency (alpha = .89).

Public satisfaction with police: This variable was a factor based-scale. Various aspects of police practice were considered regarding public satisfaction with police in seven items:

I trust the ability of the police in crime prevention
I can rely on the police for the safety of my family
The police are the best experts regarding crime issues
The police do their best for crime prevention
The police are sincere and kind
The police are prompt and proper in handling a report by a citizen
The police are fair in handling a report by a citizen

Respondents were asked to rate police practices described above based on the five point scale "strongly disagree, disagree, neutral, agree, strongly agree." Factor analysis and reliability tests were employed to check the latent construct (Eigenvalue = 4.06, percent of variance = 58.01, factor loadings > .70) and the internal consistency (alpha = .88).

Community cohesion: Perception of cohesiveness among neighbors was a factor based scale measuring five items:

Residents in my neighborhood help each other with difficulties
Residents in my neighborhood know about each other
Residents in my neighborhood talk about community issues
Residents in my neighborhood go to community events and meeting
Residents in my neighborhood share what they have

Respondents were asked to rate residents' cohesiveness based on the four point scale "strongly disagree, disagree, agree, strongly agree." Factor analysis and reliability test were employed to check the latent construct (Eigenvalue = 3.67, percent of variance = 73.36, factor loadings > .83) and the internal consistency (alpha = .91).

Neighborhood watch: A neighborhood watch team organized among residents was considered an important component for informal social control in communities. This was a dummy variable (yes=1) measured based on the question "does your community have a neighborhood watch team organized among residents for crime prevention?"

Victimization

The victimization model is considered the most traditional model to explain fear of crime. In addition to direct victimization, indirect experience and vulnerability are included under this model (Hale, 1996; Taylor & Hale, 1986). Three dimensions are considered under this model: direct victimization, indirect victimization (indirect experience and media effect), and vulnerability (SES, age, gender).

Direct victimization: This was a dummy variable measure based on whether the respondents have ever been victimized in each of the five types of crime described below:

Street Robbery
Sexual Assault by a Stranger
Assault by Gang

Burglary
Kidnapping, Abduction

All these crimes inflict physical harm that would instill fear. Respondents were asked to indicate their experience based on the scale "1: (never), 2: (1-2 times), 3: (3-4 times), 4: (5-6 times), 5: (7 times or more)." Factor analysis and reliability test were employed to check the latent construct (Eigenvalue = 2.54, percent of variance = 50.75, factor loadings > .64) and the internal consistency (alpha = .73). Scholars of victimization caution aggregating different types of crimes, yet exploratory factor analysis showed that these crimes could be aggregated as a single measure. The factor based scale was extremely positively skewed with the majority having not experienced victimization, and so a dummy variable was considered over an additive scale or weighted factor regression score to help avoid the skewing effect.

Indirect victimization: This dimension includes variables of indirect experience of victimization and media effect. Indirect experience was a dummy variable measure based on the question of whether the respondents have family members or relatives who have ever been victimized for the eight types of crimes (street robbery, sexual assault by a stranger, assault by gang, theft at home, burglary, kidnapping, abduction, pickpocketing, snatching, and auto theft including car accessories and other valuables). In addition to crimes related to physical harm, those types related to property were also included. Respondents were given five scales to choose from "1: (never), 2: (1-2 times), 3: (3-4 times), 4: (5-6 times), 5: (7 times or more)." As in the direct victimization measure, factor analysis and reliability tests were employed to check the latent construct (Eigenvalue = 3.85, percent of variance = 48.07, factor loadings > .66) and the internal

consistency (alpha = .82). The factor based-scale was dummy coded to help avoid the skewing effect in the multivariate analysis.

As a second component of indirect victimization, the media effect was measured based on if the respondents think newspapers or broadcasting stations cover crime issues over other issues such as politics, economy, or culture. It was measured based on the five point Likert type scale ranging from strongly agree to strongly disagree. For the multivariate analysis this scale was dummy coded (strongly agree and agree = 1, otherwise = 0). This variable, therefore, differentiated those who agreed or strongly agreed to the question about the over-coverage of crime on media from those who thought otherwise.

Vulnerability: this dimension includes variables for physical vulnerability (gender, age) and social vulnerability (socioeconomic status). Gender was measured based on respondents' self-classification of their gender as male or female. Age was measured by respondents' description of their age in years. Socioeconomic status was a weighted factor regression score based on three survey items: education, monthly income, and housing situation. Education was measured in six categories such as elementary school or under, middle school, high school, 2-year college, 4-year college, and graduate school. Monthly income was measured based on the following ten categories: less than $1,000; $1,000-$1,499; $1,500-$1,999; $ 2,000-$2,499; $2,500-$2,999; $3,000-$3,499; $3,500-$ 3,999; $ 4,000-$ 4,499; $4,500-$ 4,999; and more than $5,000. Housing situation was measured based on respondents' self report about their homeownership such as monthly rented room, long-term rented room, long-term rented house, and owned house. Factor analysis showed that these three survey items (education, monthly income,

and housing situation) were associated with a single latent construct (Eigenvalue = 1.53, percent of variance = 51.12, factor loadings > .60).

Disorder

Perceived incivility: As a measure of citizen perceptions of neighborhood quality of life, the variable "perceived incivility" was a factor based scale. To reflect both physical and social disorder in the neighborhood, five related survey items were considered:

> There are many dark and ignored places in my neighborhood
> There are some places where delinquent juveniles get together
> My neighborhood is dirty with rubbish
> I often see groups of juveniles wandering around
> I often see drunken people wandering around at night

Each item was measured based on the four point scale "strongly disagree, disagree, agree, strongly agree." Factor analysis and reliability test showed that these survey items were associated with one latent construct (Eigenvalue = 2.94, percent of variance = 58.77, factor loadings > .68) and with a high internal consistency (alpha = .82).

(3) Control Variables

Volunteer activities: Additionally, control variables were included to help control for potential spurious associations. First, scholars suggest that volunteer activities for crime prevention were associated with levels of fear of crime. People may volunteer for crime prevention activities to deal with perceived risk, but the nature of the relationship between volunteer activities and fear of crime is controversial. One study reported that volunteers participating in community-policing activities expressed fear of crime substantially more than ordinary citizens (Zhao et al, 2002). The authors interpreted that participation in crime prevention activities might heighten the suspicion of others or fear

could be a motivator for citizens to volunteer for crime prevention activities. In another study, however, patrol participation was related to a slightly lower fear of crime (Ronald & Dean, 1985). To control for this effect, therefore, the variable "volunteer activities" was measured based on whether the respondents have done any of the crime prevention activities described below:

> Member in a neighborhood watch team organized among residents for crime prevention
> Member in a community team for proper guidance of delinquent juveniles
> Member in a community advisory team for crime prevention
> Donated money to support crime prevention activities
> Participated in a campaign to improve a community situation for public safety

Respondents were asked to answer based on the scale "no, no but I would like to do it, yes." Factor analysis and reliability test were employed to check the latent construct (Eigenvalue = 2.50, percent of variance = 50.04, factor loadings > .59) and the internal consistency (alpha = .75). Since factor based scale was extremely skewed toward positive direction, this scale was dummy coded (yes = 1, otherwise = 0).

Length of Residence: Length of residence was recognized as another factor of fear of crime. Whereas the stability of the neighborhood is a measure of community environment, length of residency is a measure of personal situation for familiarity and intimacy in the neighborhood, which may act as an inhibitor of fear of crime. Prior studies showed that those who lived longer in the neighborhood expressed lower levels of fear of crime due to their familiarity in the community and intimacy with residents (Paul, Dennis, & Frank, 1983). To test this hypothesis, the variable "length of residence" was measured based on the question "how long have you lived in your present neighborhood?" This variable was measured based on the self-expression of respondents of their length of residence in years.

Cross-level interactions: Finally, not many researchers have given attention to the effect of interaction among predictors of fear. Box et al. (1988) found that previous victimization was a negative predictor of fear of crime, but it turned positive when it interacted with incivility. The authors interpreted those who had been victimized might take more precautions and be less fearful, but this did not work in areas of high incivility since victims might have to do more to take precautions in their environment of danger and threats. Also, in other studies, the interaction effect between age and urban residence was greater than the individual effects of the two variables (Baumer, 1985; Jeffords, 1983). Others considered the interaction effect through subgroup analysis. McGarrell et al. (1997) conducted a model assessment in each of the low-, medium-, and high-disorder neighborhoods to examine whether the role of victimization, perceived disorder, and community concern vary depending on levels of disorder in a neighborhood. They did find different effects of factors across those neighborhoods. The positive effect of victimization was significant in medium- and high-disorder neighborhoods, but not in low-disorder neighborhoods, suggesting an interaction between prior victimization and neighborhood disorder. The review of literature revealed that these important interaction dimensions were not considered in a majority of studies. To control for the effect of district-level conditions and individual-level perceptions the following interactions were considered: mobility and perceived incivility, economic disadvantage and volunteer activities, and crime and perceived risk. All of these interactions are assumed to have positive effects on fear of crime, considering their individually positive influences on fear.

4. Analytic Strategy

To begin, a correlation matrix for citizen-level variables will be estimated to check bivariate relationships as well as to provide a preliminary assessment of

multicollinearity. Next, multivariate analyses will proceed in two stages. First, Hierarchical Linear Modeling (HLM) analysis for fear of crime is conducted to investigate the effect of social conditions on fear of crime while holding constant the effect of individual level factors such as demographics and citizen perceptions of neighborhood quality and police service. HLM provides full-information maximum-likelihood estimates and allows for the simultaneous testing of the district-level and citizen-level predictors. Different from the conventional multiple regression analysis, this method provides statistical indexes of within- and between-group variation.

Second, turning to the structural approach to examine the mediating effect of perceived risk on the relationship between conceptual models and fear as well as the effects of fear on behavioral adaptations, additional HLM analyses are conducted for perceived risk, fear, and, behavioral adaptation measures. The comparison of HLM models between perceived risk and fear reveals the structural association between them. Finally, the comparison of HLM models between fear and behavioral adaptation measures (i.e., constrained actions, cautious actions, active defense) reveals the effects of fear and perceived risk on each of the behavioral adaptation measures.

5. Hierarchical Linear Modeling (HLM) Method

(1) HLM and Traditional Approach

Hierarchical Linear Model (Raudenbush & Bryk, 2002), Multilevel Model (Goldstein & Rasbash, 1996), or Random Coefficient Model was chosen as method of analysis for this study based on theoretical and statistical grounds. HLM is a particular regression technique that is designed to take into account the hierarchical structure of data. Illustrating a multilevel approach for survey data of citizens nested in communities,

this section briefly overviews the strength and weakness of the HLM analysis, compared to the conventional methods.

(2) Data Structure for HLM

Hierarchical Linear Modeling (HLM) is an estimation technique specifically designed for the analysis of multilevel data where individuals are nested or grouped (Raudenbush & Bryk, 2002). Researchers often encounter a multilevel structure in social science. Citizens are nested in communities or cities, students are nested in schools, and public officials are nested in agencies. In such a structure, researchers are interested in assessing the effect of level-2 predictors on level-1 issues, controlling for level-1 predictors. Community environment, school circumstance, and organizational culture or policies are possible level-2 factors predicting level-1 measures such as fear of crime, juvenile delinquency, and job satisfaction among public officials. Researchers expect a certain amount of between level variation controlling for individual level variation that is explained by demographics and personal perceptions of and preferences to certain issues. In the multilevel studies of fear of crime, we usually have survey data for citizens. We also have data about different climate characteristics of the communities or cities in which these citizens reside. We are interested in determining simultaneously the effect of community characteristics as well as various citizen demographics and attitudinal dimensions on citizen fear of crime. Prior to the multi-level estimation techniques, there were some ways to handle multilevel data structure. In general, conventional regression methods were used after aggregation or disaggregation of the multilevel data, handling the data as if they were single level data (Goldstein & Rasbash, 1996; Raudenbush & Bryk, 2002; Snijders & Bosker, 1994).

(3) Traditional Approach

First, as the most frequently used method, data are disaggregated to lower level (i.e., citizen level). Various community level variables such as crime rate, divorce rate, and mobility rate were assigned to each citizen. That is, all observations are pooled (Raudenbush & Bryk, 2002). Citizens' community membership or between community variation is ignored. In such a case, for example, citizens nested in the same community will share exactly the same community characteristics on the contextual variables. All citizens in a given community would have the same level of crime, mobility, etc. Then, citizens are used as the unit of analysis for conventional regression analyses. In this case, units for analysis increase but data from fewer units at the higher level is falsely handled as if it were data for the individual level. For example, mobility rate in a given community is falsely considered as individual mobility tendency for each citizen, which causes ecological fallacy by generalizing group-level observations to individual citizens (Schwartz, 1994). Furthermore, traditional OLS regression analysis would assume that all citizens, even those coming from the same community, are considered to be unrelated to each other, which is the independence of observations. In a hierarchy of social contextual design, as citizens were grouped within communities, however, their perceptions would be related according to their specific communities. Thus, it is considered that the community characteristics are completely homogenous for all citizens in a specific community when we use such pooled data. The complete homogeneity assumption is very unrealistic in a real situation. Citizens would share common experiences to some degree given structural environments but their experience would vary due to the specifics of each individual. In other words, this disaggregated or pooled

data approach violates the assumption of independence among observations within groups and heterogeneity of variance assumption, resulting in biased estimation of variances in the contextual variables and incorrect standard errors (Green, 2000). Assigning group level variables down to the individual level results in statistical tests that are based on the number of individuals instead of the number of groups, thus the standard errors associated with the tests of the group level variables may be underestimated. More specifically, the size of standard errors are underestimated in a statistical test, if we disregard heterogeneous structure, which would provide a false sign of statistical significance, generating a risk for a Type I error by accepting false hypotheses (Green, 2000). Scholars also caution that even wrongly signed coefficients will be obtained in some situations (Raudenbush & Bryk, 2002).

Second, data are aggregated to a higher level (i.e., community level). For example, citizen fears of crime are averaged to the community level and community jurisdictions are used for the unit of analysis (Goldstein & Rasbash, 1996; Raudenbush & Bryk, 2002; Snijders & Bosker, 1994). Coefficients are estimated as if the aggregations are the primary object of interest (i.e., aggregated fear of crime measures for each community are modeled), therefore ignoring within group variation, yet in fact, citizens nested in a community would have different levels of fear of crime. In this case, fewer units at the community level suppress more units at the citizen level generating fewer units for analysis, which results in weakness of statistical power for analysis and loss of information. This approach also carries a risk for ecological fallacy when a researcher makes generalizations about an individual based on the results from aggregate data (Schwartz, 1994).

Third, one of the least frequently used methods was that communities were separated and individual level regression or other analyses were conducted within different communities, grouping cases according to some criteria (Engen, 1996). These separate analyses within communities can produce unbiased estimates of relationships within communities, but comparisons between communities are difficult due to the likelihood of unequal parameter variances, and also the difficulty of comparing the results across many communities.

Mostly relying on disaggregated or pooled data approach, researchers still use conventional OLS regression method for the reason of insufficient number of cases required especially in the bottom level (citizen-level) to perform a reliable HLM analysis. For example, research tested the effect of neighborhood disorder on citizen perceptions of powerlessness by using survey data for more than 2,482 citizens in Chicago with linked data on respondents' census tracts (Geis & Ross, 1998). Level 2 data were disaggregated to citizens and they were used as the unit of analysis. In this study, approximately two-thirds of the census tracts (766 out of 1,169) contain only one respondent. Under such situations, HLM analysis could not generate reliable estimates of the variance within census tracts and so OLS regression analysis was used. Due to the data structure, this method was chosen even though this approach violates the assumption of independence among observations within groups. Similarly, the number of respondents living in each census tract or block ranged from 1 to 72 with a mean of 8.6 people and so the OLS regression method was utilized in examining the effect of community level socioeconomic status on individual level adult health using a national sample of adults in the U.S (Robert, 1998). The researcher in this study made a correction to fix the

clustering effect. More specifically, he realized that clustering of observations within communities produces serial correlation and so he corrected the serial correlation by adjusting standard errors. He used a replication based survey sampling error program which adjusts for the fact that respondents clustered within the same communities are likely to share characteristics compared to respondents chosen randomly from the population. Regardless, conventional regression analysis methods are still used when the survey sampled only a few respondents within each census community (Duncan, Connell, & Klebanov, 1997).

(4) Advantages of Multilevel Analysis

A multilevel approach in criminal justice is theoretically concerned with the effect of community macro characteristics on individual-level perceptions of crime and the justice system. Thus, the research design involves both community-level and citizen-level variables. As stated, prior to the multilevel analysis approach, traditional regression methods were used even with the nested data. One of the most important assumptions of the traditional regression approach is independence of observations, where the observations of any respondent are not related to those of others, which is violated especially when the multilevel data are disaggregated or aggregated, where individuals are nested in groups such as organization, community, or city. Violation of the independence of the observations yields biased estimates of the relationships among variables (Williams, 1999) by violating the assumption of heterogeneity of variance. The HLM analysis method avoids the problems of aggregation bias and misestimated variances that affected the validity of multilevel analysis in conventional methods (Raudenbush & Bryk, 2002). The assumption of the independence of observations is

maintained since the HLM analysis allows cross-level hypotheses to be addressed in one analysis without having to aggregate citizen perceptions to community means or to disaggregate community ecological characteristics to individual citizens. The HLM analysis is based on multilevel theory to specify direct effects of variables on each other within any one level, and to specify cross-level interaction effects between variables located at different levels (Goldstein & Rasbash, 1996; Raudenbush & Bryk, 2002). Compared to complete pooling or unpooling methods, the distinction can be made between causal effects of, for example, citizen-level variables and constraining effect of community-level variables. Therefore, one of the obvious advantages is the ability to explicitly model and test cross-level relationships by considering interactions between group level and individual level characteristics with correct estimates of standard errors (Koenig & Lissitz, 2001; Raudenbush & Bryk, 2002; Willms, 1999). Based on theory and logic, the researcher should design mediating mechanisms that cause variables at one level to influence variables at another level. For example, community-level concentrated disadvantage and crime may produce individual-level fear of crime through increasing individual level perceptions of neighborhood incivility. In a traditional method, these three variables would be incorrectly modeled at the same level for data analysis.

Furthermore, if we use pooled data, OLS regression analysis would assume that the relationships between variables are to be identical across all groups (Reise & Duan, 2003). In traditional OLS approach, all of the regression parameters are fixed and level-2 variance components are not separable from the individual level residual (Hoffman & Gavin, 1998). Unlike traditional statistical approaches, HLM accounts for intraclass correlation in the data, and therefore provides more efficient estimates of the effects

associated with different individuals and groups than is provided by ordinary least squares regression methods (Beyers, Bates, Pettit, & Dodge, 2002). HLM generates correct decomposition of variances in parameter estimates between and within group components (Goldstein & Rasbash, 1996). HLM estimates random coefficient models in that the level-1 parameters are allowed to vary across groups (Raudenbush & Bryk, 2002). In HLM, the slopes of predictors are fixed within communities or allowed to be random across communities by considering the variance component of each variable. That is, if the effect of a community-level variable on a dependent variable plays out differently across communities, multilevel models can explain this causal heterogeneity by specifying the slope of the variable as random across communities, or fixed within communities if the variance of the variable is not significant across communities. Also, HLM allows the intercept in a model to be random across communities and assess how the effects of community-level variables are significantly different across communities.

Most of all, Ordinary Least Squares (OLS) regression in aggregated or disaggregated data would ignore the aggregate clustering of individuals, thereby suppressing the independence of observations and heterogeneity of variance. HLM analysis has an advantage over traditional methods by testing multilevel theories and simultaneously modeling variables at different levels, which decreases the probability of a Type I error in traditional methods. HLM resolves many of the problems that conventional methods encounter, yet it is still based on traditional assumptions of independence of observations, normality, and heterogeneity of variance. Despite its effect on the studies of multilevel theoretical models, HLM does not allow the examination of covariance structure models, such as factor analysis, path analysis, and

structural equation models, which will be discussed in the later section. The next chapters will report the major research findings and will discuss the implications of the results in both theoretical and practical terms.

CHAPTER SIX
FINDINGS

In this chapter, the major research findings are presented. To begin, several diagnostic procedures are introduced to help understand the sample characteristics and district level situations. For this, descriptive statistics in both individual and district levels are presented first followed by bivariate correlations. The analysis proceeds with the estimation of a series of hierarchical linear models. For the multilevel analyses, a three-stage modeling procedure is used for each outcome: the one-way ANOVA to obtain descriptive statistics such as intraclass correlation and reliability estimates; the random coefficients model to look at the effects of citizen-level predictors, and the fixed effect full model to determine the effects of both district-level and citizen-level predictors.

1. Preliminary Statistics

(1) General Characteristics

To begin with, descriptive statistics were obtained to report sample characteristics. The subjects of this study are 654 male and female adults over 19 years old. Table 5 includes the general characteristics of the sample. Among the total respondents, 53 percent were females and 47 percent were males. Respondents were on average 38 years old with the age distribution between 20 and 69. On average, respondents completed education of about 2-year college (4 = 2-year college). The average monthly household income was distributed between $2,500 and $3,490. On average, the respondents were living in either owned or long-term rented house. The respondents were on average living 8.91 years in the neighborhood. About 20 percent of the respondents reported that they had a neighborhood watch team in the community. About 17 percents of the respondents were victims of crime, while a majority of the respondents (59 percent) had

friends, relatives, or family members who were victims of crime in the past. About 43 percent of the citizens reported that the media covered crime issues over politics, economics, and other issues. A minority of the respondents (9 percent) has volunteered for crime prevention activities (i.e., neighborhood watch).

Table 5. Individual Level Descriptive Statistics (N=654 in 25 Districts)

Variable	Mean	SD	Min	Max
ENDOGENOUS VARIABLES				
Fear of crime	17.44	4.93	8	32
Perceived Risk	24.95	5.81	8	40
Constrained Actions (a)	0	1	-1.65	3.09
Cautious Actions (a)	0	1	-1.73	2.86
Active Defense (a)	0	1	-1.54	4.61
EXOGENOUS VARIABLES				
Community Concern/Control Model				
Satisfaction with Police	20.36	4.33	7	34
Perceived Community Policing	12.53	2.98	6	23
Perceived Cohesion	11.39	3.28	5	20
Neighborhood Watch (Yes=1)	.20	.40	0	1
Victimization Model				
Direct Experience (Yes=1)	.17	.38	0	1
Indirect Experience (Yes=1)	.59	.49	0	1
Crime on Media (Yes=1)	.43	.50	0	1
Vulnerability				
Gender (female=1)	.53	.50	0	1
Age	38.42	11.45	20	69
SES (a)	0	1	-3.16	1.91
Education	4.19	1.52	1	7
Income	5.69	2.46	1	10
Housing Situation	3.57	.77	1	4
Disorder Model				
Perceived Incivility	11.67	2.75	5	20
CONTROL VARIABLES				
Length of Residence	8.91	7.91	.1	40
Volunteer Activities (yes=1)	.09	.29	0	1

Note: (a) Weighted factor regression score

The average level of fear among the respondents was 2.18 points (mean/number of items) in the four-point scale (1=not afraid at all, 2=not afraid, 3= afraid, 4=very afraid) per item for all 8 items. The average satisfaction with police was 2.91 points in

the five-point scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). On average, the respondents perceived community-policing activities at 2.09 points in the four-point distribution (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). Community cohesion was perceived on average at 2.28, and the average perception of incivility was 2.33 points in the four-point distribution (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). These statistics indicated that, on average, fear of crime, satisfaction with police, perceived cohesion, and perceived incivility were not very high. On the other hand, the average perceived risk was 3.12 points in the five-point distribution (1=very low, 2=low, 3=medium, 4=high, 5=very high), which indicated perceived risk was above median.

Table 6 presents district-level descriptive statistics. About 22 percent of citizens moved in and about the same percent of citizens moved out during 2003. About 33 percent of citizens were living in a rented house. Average percent of citizens living in poverty indicated that on average 1.52 percent of citizens had received government support in 2003. The population per square kilometer in the 25 districts ranged from 7,588 to 28,102 with the average of 18,063. The most frequent type of crime per 100,000 persons in 2004 was assault (828.72), followed by larceny (372.47), rape (17.51), and robbery (15.91).

Table 6. District Level Descriptive Statistics (25 Districts)

Variable	Mean	SD	Min	Max
MOBILITY (a)	0	1	-1.21	1.92
Percent Moved In	21.65	1.79	18.95	24.52
Percent Moved Out	22.33	1.81	19.94	27.56
ECONOMIC DISADVANTAGE (a)	0	1	-1.52	2.51
Percent Rented House	33.48	5.92	24.30	46.52
Percent in Poverty	1.52	.64	.62	3.18
CRIME (a)	0	1	-1.03	3.93
Murder (b)	2.35	1.28	.95	6
Robbery (b)	15.91	7.67	3.15	33.14
Rape (b)	17.51	7.01	9.78	41.07
Larceny (b)	372.47	210.12	180.08	1245.70
Assault (b)	828.72	389.51	526.49	2373.95
Arson (b)	3.34	2.09	1.04	10.81
Drug Offense (b)	6.31	6.34	1.23	31.70
Abduction (b)	.38	.38	.00	1.44
Gambling (b)	11.87	8.34	3	38.18
DENSITY (c)	9.76	.32	8.93	10.24
Population Density	18063.71	5203.73	7588.50	28102.07

Note: (a) Weighted factor regression score
(b) Number of crimes per 100,000 persons
(c) Natural log transformation

(2) Bivariate Correlation

Citizen Level Correlation

A series of bivariate correlations were first estimated. Table 7 presents bivariate correlations between fear of crime and citizen-level predictors. The results indicated that multi-collinearity was not a problem considering the moderate Pearson correlation values. The highest correlation was observed between fear and perceived risk (.38). OLS regression diagnostics (not presented here) provided additional support that multi-collinearity did not show, demonstrating the tolerance statistics for each independent variable equal to or greater than .82.

Table 7. Bivariate Correlations between Fear and Citizen Level Variables (N = 654)

	1	2	3	4	5	6	7	8	9	10	11
1. Fear											
2. Perceived Risk	.38*										
3. Constrained Action	.33*	.14*									
4. Cautious Action	.16*	.10*	.29*								
5. Active Defense	.06	-.03	.22*	.22*							
6. Satisfaction with Police	.04	.02	.03	.06	-.09*						
7. Perceived Community Policing	.04	-.02	.01	.19*	.22*	.21*					
8. Perceived Cohesion	.01	-.04	.07	.16*	.03	.19*	.21*				
9. Neighborhood Watch	-.09*	-.09*	-.07	-.07	.04	.08*	.12*	.06			
10. Victimization	.15*	.13*	.10*	.06	.11*	-.11	-.02	-.03	-.05		
11. Indirect Victimization	.27*	.18*	.22*	.11*	.09*	-.08	.01	-.01	-.04	.15*	
12. Crime on Media	.-.01	.06	-.05	.05	-.08	-.05	-.03	.01	.04	.03	-.05
13. Female	.08*	.03	.39*	.15*	.02	.05	.01	.06	-.04	-.07	-.01
14. Age	.01	-.07	.04	.10*	-.07	.15*	.08*	.19*	.06	-.01	-.04
15. SES	.05	-.01	.02	.13*	.08	.03	.06	-.11	-.09*	.04	.07
16. Perceived Incivility	.10*	.09*	.06	.07	.03	-.11*	-.03	.12*	.09*	.06	.12*
17. Length of Residence	-.05	-.09*	-.07	-.03	-.04	.01	.00	.20*	.16*	.02	.04
18. Volunteer Activities	.08*	.03	-.02	-.02	.06	-.05	.10*	.09*	.29*	.13*	.09*

	12	13	14	15	16	17	18
12. Crime on Media							
13. Female	.01						
14. Age	.00	-.00					
15. SES	-.01	-.02	-.06				
16. Perceived Incivility	.11*	-.03	-.07	-.13*			
17. Length of Residence	.04	-.07	.33*	-.01	05		
18. Volunteer Activities	.12*	-.19*	.15*	.02*	-.01	.14*	

Note: Entries are Pearson Correlation Coefficients; * $p < .05$ (2-tailed tests).

As expected, perceived risks, constrained actions, cautious defense, victimization, indirect victimization, female, and perceived incivility were positively associated with fear, while neighborhood watch was negatively associated with fear. These were all consistent with the hypothesized direction (H2d, H3a, H3b, H3e, H4, H5a, and H5c). Volunteer activity was positively associated with fear, suggesting that those volunteering for crime prevention activities perceived a higher fear of crime. On the other hand, active defense, satisfaction with police, perceived community-policing activities, perceived cohesion, crime on media, age, SES, and length of residence were not significantly associated with fear. The results, therefore, did not support the hypotheses regarding the link between these predictors and fear (H2a, H2b, H2c, H3c, H3d, H3f, and H5c). Regarding the association between fear and behavioral adaptations, the results indicated that fear was positively associated with constrained actions and cautious actions, while it was not significantly associated with active defense. The hypothesis between fear and behavioral adaptations, therefore, was partially supported (H5c).

For the outcome "perceived risk," fear, constrained action, cautious action, victimization, indirect victimization, and perceived incivility were positively associated with perceived risk, while neighborhood watch and length of residency were negatively associated with it. These associations were consistent with the expectation. On the other hand, active defense, satisfaction with police, perceived community policing, perceived cohesion, crime on media, female, age, SES, and volunteer activities were not significantly associated with perceived risk. The results indicated that the hypothesized relationship between perceived risk and behavioral adaptations was partially supported

(H5b) since perceived risk was positively associated with constrained actions and cautious actions, while it was not significantly associated with active defense.

For the behavioral adaptation measures, the associations among behavioral adaptations themselves will not be reported here since the relationships among them were not intended to be tested. The significant associations between predictors and behavioral adaptations, therefore, were reported here without giving attention to the association between behavioral adaptation measures. For the outcome "constrained actions," fear, perceived risk, victimization, indirect victimization, and female were positively associated with constrained actions. The association between these predictors and constrained actions were consistent with the expected direction. For the outcome, "cautious actions," fear, perceived risk, active defense, perceived community policing, perceived cohesion, indirect victimization, female, age, and SES were positively associated with cautious actions. It was interesting to observe the positive associations between perceived community policing activities and cautious behaviors as well as perceived cohesion and cautious behaviors. For the outcome "active defense," perceived community-policing activities, victimization, and indirect victimization were positively associated with active defense, while satisfaction with police was negatively associated. The negative relationship between satisfaction with police and active defense was interesting, compared to the positive relationship between community-policing activities and active defense. Bivariate relationships reported here, however, should be closely examined in the multivariate analyses to see their relative relationships after controlling for the effects of other predictors.

District Level Correlation

Table 8 presents bivariate correlation between fear and district-level variables. Fear was measured as an individual-level perception, but was aggregated into district-level for this correlation test. Bivariate results from the independent variables showed no signs of multi-collinearity. In addition, no evidence of multi-collinearity was detected when fear was regressed on district-level variables (not shown), indicating tolerance statistics greater than .79.

Table 8. Bivariate Correlations between Fear and District Level Variables (N = 25)

	1	2	3	4	5
1. Fear					
2. Mobility	.15				
3. Economic Disadvantage	.43*	-.13			
4. Crime	.49*	-.08	.29		
5. Population Density	-.45*	-.03	-.34	-.37	

Note: Entries are Pearson Correlation Coefficients;
* Correlation is significant at the 0.05 level (2-tailed)

As expected, economic disadvantage and crime were positively associated with fear. Districts with higher economic disadvantage and higher crime were likely to be exposed to higher levels of fear of crime, which was consistent with the hypothesized relationships (H1b, H1c). Interestingly, the association between mobility and fear was positive, but was not statistically significant (H1a). Contrary to the hypothesis (H1d), population density was negatively associated with fear of crime. Districts with a higher population per square kilometer were likely to be exposed to lower levels of fear.

Correlations among district-level predictors also showed interesting patterns. For example, even though it was statistically negligible, population density was negatively associated with mobility, economic disadvantage, and crime. In addition, mobility was negatively associated with economic disadvantage, crime, and population density, even though those associations were not statistically significant. Overall, the results suggested

that, unlike major U.S. cities, population density and mobility in Seoul might not be indicators of social disorganization. The next section examines the extent to which the relationship reported in the correlation analyses still holds while controlling for the effect of other variables.

2. Hierarchical Linear Modeling Analyses

(1) Model Building Procedure

The models for fear of crime were estimated using HLM Version 6, following a three-step modeling strategy: the unconditional (one-way ANOVA) model, random coefficient model including only citizen-level predictors, and the fixed effects full model including both citizen-level and district-level variables simultaneously. Here, the dependent variable "fear of crime" was treated as an interval-level measure.

Unconditional (one-way ANOVA) Model

Model building begins with a simple unconditional model, which partitions the variance of dependent variables into between group variance and within group variance (Raudenbush, Bryk, & Cheong, 2000). This one-way ANOVA with random effects, therefore, provides preliminary information about how much variation in fear lies within and between districts and if the reliability of each district's sample mean is reliable as an estimate of its true population mean. That is, the unconditional or the one-way ANOVA models determine the amount of variation in the outcomes within and between districts, and provide reliability estimates for the outcome variable at the aggregate level. In this one-way ANOVA model, reliability is a function of sample size in each of the districts and intraclass correlation is the proportion of the total variance that is between districts relative to the amount that is within districts (Raudenbush & Bryk, 2002). The decision

if the data are reasonable for multilevel analyses is made in this model. The models are expressed as:

Level-1 model: $Y_{ij} = \beta_{0j} + r_{ij}$
Level-2 model: $\beta_{0j} = \gamma_{00} + u_{0j}$

In this one way ANOVA model, the level-1 model ($Y_{ij} = \beta_{0j} + r_{ij}$) represents variation in citizens' fear of crime within each district: where Y_{ij} is the fear of crime of citizen i in district j, the intercept β_{0j} represents the average fear of crime of district j, and the random effect r_{ij} is assumed to be normally distributed with a mean of zero and a variance of σ^2. The level-2 model ($\beta_{0j} = \gamma_{00} + u_{0j}$) accounts for variation in fear of crime between districts: where the intercept γ_{00} is the grand mean of citizens' fear of crime across all districts. The random effect u_{0j} is assumed to be normally distributed around mean of zero and variance of τ_{00}. In this fully unconditional model, the intraclass correlation coefficient ($\rho = \tau_{00} / \sigma^2 + \tau_{00} = 0.060$) shows a portion of between-group variance in the total variance (Duncan & Raudenbush, 1999). Approximately 6 percent of the variation in fear of crime was between districts and the remainder was attributed to citizen-level variation and random error. This between-group variation is reasonably acceptable considering other studies that encountered small variance between macro-level units ranging from around 5 to 10 percent (Reisig & Parks, 2000; Sampson & Bartusch, 1998; Sampson, Morenoff, & Earls, 1999). The district-level reliability (.57) indicates that the sample mean was a reliable measure of the true district mean for fear of crime. "The reliability will be close to 1 when the group means, $\beta_{0j,}$ vary substantially across level-2 units holding constant the sample size per group" (Raudenbush & Bryk, 2002. p. 257). This reliability indicates that district-level differences can be modeled

with a reasonable degree of precision, another encouraging result for multilevel analyses along with the intraclass correlation.

Table 9. Decomposition of Variance and District-Level Reliabilities

Variance Components	Fear of Crime	Perceived Risk	Constrained Actions	Cautious Actions	Active Defense
Within-District Variance (σ^2)	.943	.917	.880	.938	.913
Between-District Variance (τ_{00})	.059	.077	.086	.037	.096
Intraclass Correlation	.060	.077	.089	.038	.095
District-Level Reliability	.568	.632	.647	.444	.663

Note: N = 654 citizens nested in 25 district units.
Outcome measures are standardized (mean=0, standard deviation=1).

The intraclass correlation coefficient for the outcome measures of perceived risk, constrained actions, cautious defense, and active defense was 0.077, 0.089, 0.038, and 0.095 respectively. The district-level reliability for perceived risk, constrained actions, cautious actions, and active defense was .632, .647, .444, and .663 respectively.

Random Coefficient Regression Model

Prior to modeling district-level effects, a random coefficient regression model was estimated including only citizen-level variables, X, that were selected based on their theoretical relationship to fear of crime. This model examines the multivariate association between citizen-level variables and fear of crime and shows whether any of the citizen-level slopes vary significantly across districts. Unlike ordinary linear regression analyses, this multilevel analysis requires not only proper specification of the individual-level regression equations, but also careful specification of the variance components to be estimated. Random coefficient regression model helps determine

whether a slope is to be fixed within districts or should be specified as random across districts depending on the significance of variance across districts. If a district-level slope varies across districts, the slope can be estimated using district-level predictors (Rountree, Land, & Miethe, 1994). In this model, all of the interval or ratio-level variables in the individual level were centered around the group means since this allows interpretation of parameter estimates as person-level effects within each group. Dummy coded variables were remained uncentered. The intercept term takes on a different meaning according to the type of centering. Three different options are considered (Hoffman & Gavin, 1998). First, researchers choose raw metric scaling with no centering and the intercept is the expected value of Y_{ij} when X_{ij} is zero. The second option is grand mean centering where the grand mean of the level-1 predictor is subtracted from each level-1 case and the intercept is the expected value of Y_{ij} when X_{ij} is the average across all individuals in the sample. The third option is group mean centering where the relevant group mean of the level-1 predictor is subtracted from each case and the intercept is the expected value of Y_{ij} when X_{ij} is equal to the group's mean. Researchers often use centering for meaningful interpretation of the intercept. Since β_{0j} becomes the dependent variable in the level-2 models, its meaning must be clear so as to understand what is being predicted. For example, the level of fear of crime when SES is zero does not provide sensible information. Therefore, SES is often centered around the group or grand mean. In the case that SES is grand mean centered, for instance, the intercept is interpreted as the expected fear of crime when SES is the average of all citizens. There is no statistically correct choice among centering options and the choice should be driven by theory and by the intent of the research considering the conceptual paradigm and

research question under investigation (Hoffman & Gavin, 1998; Koenig & Lissitz, 2001). The random coefficient regression or the within-district model was expressed as:

$$\text{Citizen Level: Fear}_{ij} = \beta_{0j} + \Sigma_{(q=1-k)}\beta_q X_{qij} + r_{ij}$$

This citizen-level model can be conceived of in the same way as a multiple regression model. Here, i refers to the individual (citizen) and j to the group (district). Y_{ij} is the outcome variable (fear of crime) measured for citizens. β_{0j} is a intercept for a given district. β_q represents the effect of a certain independent variable on fear of crime. X_{qij} is the value of predictor q for citizen i in district j. The unique effect associated with the individual is r_{ij}. In contrast to the ordinary least squares (OLS) regression model, the random coefficient model allows the intercept to take different values in each of the districts. The results indicated that neighborhood watch, perceived incivility, perceived risk, length of residency, and volunteer activities had effects which varied across districts and showed a high reliability of variance, thus the slopes of these variables remained random across districts (Raudenbush & Bryk, 2002). Slopes for all other variables were specified as fixed within-districts due to the lack of enough variation across districts. These decisions relied on not only statistical results but also theoretical considerations. In this study, statistical results were maintained since existing theories did not strongly suggest that some of these variables influenced fear of crime in different ways across districts. Following the same procedure, the slopes of socioeconomic status, crime on media, neighborhood watch, and length of residence remained random across districts for the outcome measure of perceived risk; the slopes of fear, perceived community policing activities, indirect victimization, and volunteer activities for crime prevention remained random across districts for the outcome measure of constrained actions; the slopes of fear,

perceived incivility, and perceived risk remained random across districts for the outcome measure of cautious actions; the slopes of fear, perceived community policing activities, and indirect victimization remained random across districts for the outcome measure of active defense.

Fixed Effect Model (Full Model)

After modeling the random coefficient model, the level-2 models are formulated. In the level-2 model, the coefficients from the level-1 model become the dependent variables. This model allows the study of the effects of city-level variables on the variance among the values of the coefficients. The models are expressed as:

$$\text{District Level: } \beta_{0j} = \gamma_{00} + \Sigma_{(s=1-t)}\gamma_s W_{sj} + u_{0j}$$
$$\beta_{1j} = \gamma_{10} + \gamma_{11} W_j + u_{1j}$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

The intercept (β_{0j}) is hypothesized to be a function of the overall mean of fear of crime (γ_{00}), district characteristics (W_{sj}), and a unique (or random) effect associated with each district (u_{0j}). The slope (β_{1j}) is hypothesized to be a function of the mean of the slopes across districts, the effect of some district characteristics (γ_{11}), and a unique (or random) effect associated with each district (u_{1j}). Here, the slope was considered random across districts since u_{1j} is included in the model. If the effect does not significantly vary across districts, it is fixed by excluding the error term (u_{1j}) in the model. Several similar models for slopes are generated based on the number of variables in citizen level.

Through this model building procedure, finally, a series of combined hierarchical models are estimated to investigate simultaneously the effects of both citizen and district level variables. District-level variables were grand mean centered in order not to discard the compositional effects with group-mean centering. Then, these district-level

predictors were entered in the model. Two separated models were estimated considering the sample size (N=25) at the district level. The first model only included three district-level variables such as economic disadvantage, mobility, and crime. Then, population density was added in the next model. The estimation of two separate models would help avoid statistical bias due to the sample size at the district-level. The recommended rule is that one needs at least 10 observations for each predictor at the aggregate-level (Bryk & Raudenbush, 1992). The number of level-2 variables would also depend on the structure of the data such as intraclass correlation and reliability. Next, cross-level interaction was considered. One of the obvious advantages of multilevel analysis is the ability to model and test cross-level relationships by considering interactions between group level and individual level characteristics. The preliminary analysis showed that the district-level variable "economic disadvantage" had a significant effect not only directly on the intercept of the model but through the slope parameter of a level-1 variable "volunteer activities." Therefore, the model intercept and the slope of the variable "volunteer activities" were modeled as a function of economic disadvantage. Likewise, the model intercept and the slope of the variable "perceived incivility" were modeled as the function of mobility, while the model intercept and the slope of the variable "perceived risk" were modeled as a function of crime. On the other hand, the district-level variable "population density" was significant in predicting the intercept of the model but it did not play a significant role in modeling the slope parameters of level-1 variables. Thus, only the intercept was modeled as a function of population density. On the basis of theoretical consideration and statistical results, the final model was defined as (fear of crime as the outcome measure):

Level-1 (citizen-level):

$Y_{ij} = \beta_{0j} + \beta_{1j}$*(satisfaction)* $+ \beta_{2j}$*(perceived community policing)* $+ \beta_{3j}$*(perceived cohesion)* $+ \beta_{4j}$*(neighborhood watch)* $+ \beta_{5j}$*(victimization)* $+ \beta_{6j}$*(indirect victimization)* $+ \beta_{7j}$*(crime on media)* $+ \beta_{8j}$*(female)* $+ \beta_{9j}$*(age)* $+ \beta_{10j}$*(SES)* $+ \beta_{11j}$*(perceived incivility)* $+ \beta_{12j}$*(perceived risk)* $+ \beta_{13j}$*(length of residency)* $+ \beta_{14j}$*(volunteer activities)* $+ r_{ij}$

Level-2 (district-level):

$\beta_{0j} = \gamma_{00} + \gamma_{01}$*(economic disadvantage)* $+ \gamma_{02}$*(mobility)* $+ \gamma_{03}$*(crime)* $+ \gamma_{04}$*(population density)* $+ U_{0j}$

$\beta_{1j} = \gamma_{10}$

$\beta_{2j} = \gamma_{20}$

$\beta_{3j} = \gamma_{30}$

$\beta_{4j} = \gamma_{40} + U_{4j}$

$\beta_{5j} = \gamma_{50}$

$\beta_{6j} = \gamma_{60}$

$\beta_{7j} = \gamma_{70}$

$\beta_{8j} = \gamma_{80}$

$\beta_{9j} = \gamma_{90}$

$\beta_{10j} = \gamma_{100}$

$\beta_{11j} = \gamma_{110} + \gamma_{111}$ *(mobility)* $+ U_{11j}$

$\beta_{12j} = \gamma_{120} + \gamma_{121}$ *(crime)* $+ U_{12j}$

$\beta_{13j} = \gamma_{130} + U_{13j}$

$\beta_{14j} = \gamma_{140} + \gamma_{141}$ *(economic disadvantage)* $+ U_{14j}$

These equations could also be combined through substitutions of terms and expressed as:

$Y_{ij} = \gamma_{00} + \gamma_{01}$*(economic disadvantage)* $+ \gamma_{02}$*(mobility)* $+ \gamma_{03}$*(crime)* $+ \gamma_{04}$*(population density)* $+ \gamma_{10}$*(satisfaction)* $+ \gamma_{20}$*(perceived community policing)* $+ \gamma_{30j}$*(perceived cohesion)* $+ \gamma_{40}$*(neighborhood watch)* $+ \gamma_{50}$*(victimization)* $+ \gamma_{60}$*(indirect victimization)* $+ \gamma_{70}$*(crime on media)* $+ \gamma_{80}$*(female)* $+ \gamma_{90}$*(age)* $+ \gamma_{100}$*(SES)* $+ \gamma_{110}$*(perceived incivility)* $+ \gamma_{111}$*(mobility)*$\times$*(perceived incivility)* $+ \gamma_{120}$*(perceived risk)* $+ \gamma_{121}$*(crime)*$\times$*(perceived risk)* $+ \gamma_{130}$*(length of residency)* $+ \gamma_{140}$*(volunteer activities)* $+ \gamma_{141}$*(economic disadvantage)*$\times$*(volunteer activities)* $+ [U_{0j} + U_{4j} + U_{11j} + U_{12j} + U_{13j} + U_{14j} + r_{ij}]$

The model is now run under full maximum likelihood in which variance-covariance parameters and fixed level-2 coefficients are estimated by maximizing their joint likelihood (Raudenbush et al., 2000).

(2) Results of Analyses

Fear of Crime

Table 10 presents three models for fear of crime. Fear of crime was measured as a factor based scale in this analysis. Model I presents the random coefficient model. The model examines the association between citizen-level variables and the outcomes in a multivariate context. The model also helps determine which of the citizen-level slopes vary significantly across districts. All citizen-level variables, except dummy coded variables, were group mean centered. Dummy coded variables remained uncentered. Based on the statistics for variance components, neighborhood watch, perceived incivility, perceived risk, length of residency, and volunteer activities had effects which varied across districts and showed a high reliability of variance, thus the slopes of these variables remained random across districts. Models II and III present fixed effect hierarchical models, which are fully combined models. All district-level variables were grand mean centered. Then, these district level predictors were entered in the model one by one. As previously mentioned, two separated models were estimated to help avoid the statistical bias due to the sample size at the district level. Only three district level variables (i.e., economic disadvantage, mobility, crime) were included in model II, and population density was added in model III. The models converged well up to three district level variables. The comparison between model II and model III indicates that the size of t-ratio for crime and economic disadvantage decreases when one more district-level variable (population density) is added in model III, which may possibly be due to the sample size effect as well as the control effect of this variable. This result suggested that up to three district-level variables were recommendable for this data structure.

Finally, as mentioned before based on the theoretical and statistical reasons, cross-level interactions were considered for district-level mobility and citizen-level perceived incivility, district-level economic disadvantage and citizen-level voluntary activities, and district-level crime and citizen-level perceived risk.

Table 10. Hierarchical Linear Models for Fear of Crime (N=654 in 25 Districts)

Variables	Model I	Model II	Model III
Constant	15.505***(.407)	15.534***(.413)	15.594*** (.391)
DISTRICT LEVEL (N=25)			
Mobility	_____	.425* (.175)	.352* (.170)
Economic Disadvantage	_____	.647***(.151)	.443** (.118)
Crime	_____	.717* (.307)	.473 (.239)
Population Density	_____	_____	-2.078** (.599)
CITIZEN LEVEL (N=654)			
Satisfaction with Police	.026 (.040)	.019 (.039)	.020 (.038)
Perceived Community Policing	.046 (.091)	.063 (.094)	.058 (.092)
Perceived Cohesion	-.006 (.056)	-.001 (.055)	-.001 (.056)
Neighborhood Watch	-.677 (.562)	-.735 (.548)	-.677 (.539)
Victimization	.629 (.419)	.681 (.394)	.642 (.389)
Indirect Victimization	2.171***(.440)	2.177***(.451)	2.142*** (.462)
Crime on Media	.062 (.307)	.024 (.324)	-.024 (.321)
Female	.729** (.253)	.837** (.253)	.844** (.261)
Age	.036 (.019)	.036 (.020)	.038 (.020)
SES	.054 (.198)	.038 (.206)	.073 (.209)
Perceived Incivility	.324** (.093)	.322** (.078)	.336** (.081)
Perceived Risk	.267***(.050)	.290***(.047)	.291***(.048)
Length of Residence	-.001 (.039)	-.001 (.039)	-.003 (.038)
Volunteer Activities	1.973* (.798)	2.030** (.695)	2.076** (.675)
CROSS LEVEL INTERACTION			
Mobility x Perceived Incivility	_____	-.207** (.063)	-.210** (.066)
Economic Disadvantage x Volunteer	_____	-1.568** (.432)	-1.811** (.445)
Crime x Perceived Risk	_____	.124* (.045)	.127* (.045)
VARIANCE EXPLAINED			
Within-District	.340	.346	.351
Between-Districts	.108	.565	.755

Note: Entries are unstandardized coefficients and numbers in parenthesis are standard errors;
* $p < .05$, ** $p < .01$, *** $p < .001$

At the district-level, the results from Model II showed that citizens residing in districts characterized by higher levels of mobility, higher levels of economic disadvantage, and higher levels of crime reported significantly higher levels of fear of crime. The findings from Model II, therefore, indicated that the hypothesized

relationships between mobility (H1a), economic disadvantage (H1b), crime (H1c) and fear of crime were all supported. On the other hand, the results from Model III indicated that citizens residing in districts characterized by higher population density reported significantly lower levels of fear of crime. This finding indicated that the hypothesized relationship between population density and fear of crime was not supported (H1d). Instead, the direction of the relationship was the opposite of the hypothesis. The district level variables accounted for 56 percent and 75 percent of the between district unit variance in Model II and Model III.

At the citizen level (see Models I, II, and III), indirect victimization, gender, perceived incivility, perceived risk, and volunteer activities had significant effects on fear of crime. As expected, citizens who had friends, relatives, or family members who were victims of crime in the past expressed significantly higher levels of fear of crime. Consistent with the hypothesis, females reported significantly higher levels of fear of crime. Citizens perceiving higher levels of social and physical incivility in the neighborhood reported significantly higher levels of fear of crime. Citizens perceiving higher risks of victimization expressed higher levels of fear of crime. The findings, therefore, indicated that the hypothesized relationships between indirect victimization (H3b), gender (H3e), perceived incivility (H4), perceived risk (H5a) and fear of crime were supported. The control variable "volunteer activities" were positively associated with fear. That is, citizens volunteering for crime prevention activities reported higher levels of fear of crime. Interestingly, the hypothesized relationships between satisfaction with police (H2b), perceived community policing activities (H2a), perceived cohesion (H2c), neighborhood watch (H2d), victimization (H3a), crime on media (H3c), age (H3f),

SES (H3d), and length of residence and fear of crime were not supported. The effects of these predictors on fear of crime were not statistically significant. Even though statistically negligible, the relationships between perceived cohesion, neighborhood watch, victimization, crime on media, age, length of residency and fear were consistent with the hypothesized directions, while the relationships between satisfaction with police, perceived community policing activities, SES and fear showed unexpected signs.

One of the advantages of multilevel analysis is the ability to explicitly model and test cross-level relationships by considering interactions between group level and individual level characteristics. In this study, cross-level interactions were considered between district-level mobility and citizen-level perceived incivility, district-level economic disadvantage and citizen-level volunteer activities, and district-level crime and citizen-level perceived risk (see Model II and III). Based on theory and logic, mediating mechanisms that cause variables at one level to influence variables at another level were designed. It was hypothesized that district-level mobility, economic disadvantage, and crime would produce citizen-level fear of crime through increasing individual level perceived incivility, decreasing volunteer activities, or increasing perceived risk. The results indicated that citizens perceiving higher levels of incivility were likely to express lower levels of fear of crime when they reside in districts characterized by higher levels of mobility. This was an unexpected result, considering that the effects of district-level mobility and citizen-level perceived risk on fear were positive when they were estimated independently. It was necessary to check the association between mobility and perceived incivility by aggregating perceived incivility into district-level (not shown). Interestingly, the bivariate correlation between mobility and aggregated perceptions of incivility was

negative (-.16), even though the association was not statistically significant. This result will be explained further in the discussion section. The interaction between economic disadvantage and volunteer activities was negative. Citizens volunteering for crime prevention activities expressed lower levels of fear of crime when they reside in districts characterized by higher levels of economic disadvantage. This indicated that the effect of volunteer activities on fear depended on economic situations in the district, since the effect of volunteer activities on fear was positive when it was estimated independently. Consistent with the expectation, the interaction between crime and perceived risk was positive. This indicated that citizens perceiving higher levels of risk of victimization expressed higher levels of fear of crime when they reside in districts characterized by higher levels of crime. Individual-level variables altogether accounted for 34 percent of the within district unit variance (see Model I).

Perceived Risk and Fear of Crime

Next, a hierarchical linear model for perceived risk was estimated and included in the table (see Table 11) to assess the effect of citizen-level factors on perceived risk, and to investigate whether perceived risk mediates the effect of any predictors on fear of crime. In the one-way ANOVA model, the intraclass correlation coefficient (.077) suggested that about 7.7 percent of the variation in perceived risk was between districts (see Table 9). The district-level reliability estimate (.63) indicated that the sample means tend to be quite reliable as indicators of the true district means, and so encouraging further multilevel analysis. Next, random coefficient regression models were estimated including all of the citizen-level variables. All citizen-level variables, excepted dummy coded variables, were centered around the group mean. The slopes of socioeconomic

status, crime on media, neighborhood watch, and length of residency remained constant across districts along with the intercept since these citizen-level variables had effects that varied across districts, indicating some multilevel interactions. All other citizen-level slopes were fixed within districts. In the combined final model, district-level variables such as mobility, economic disadvantage, and crime were grand mean centered. To consider cross-level interaction, based on theoretical and statistical suggestions, mobility was modeled to predict the intercept and the slope of length of residence, while economic disadvantage was modeled to predict the intercept and the slope of neighborhood watch. Crime, however, was modeled to predict only the intercept since it was not significant in predicting any slopes of the level-1 variables.

Table 11. Hierarchical Linear Models for Perceived Risk and Fear of Crime (N=654 in 25 Districts)

Variables	Perceived Risk	Fear of Crime
Constant	-.213 (.117)	-.387***(.084)
DISTRICT LEVEL (N=25)		
Mobility	-.063 (.035)	.085* (.036)
Economic Disadvantage	.075 (.059)	.133***(.031)
Crime	.002 (.063)	.146* (.062)
CITIZEN LEVEL (N=654)		
Satisfaction with Police	.021* (.010)	.004 (.008)
Perceived Community Policing	-.001 (.014)	.012 (.019)
Perceived Cohesion	-.025* (.011)	-.001 (.011)
Neighborhood Watch	-.236 (.160)	-.146 (.111)
Victimization	.288***(.069)	.138 (.080)
Indirect Victimization	.283***(.071)	.443***(.091)
Crime on Media	.030 (.102)	.006 (.065)
Female	.046 (.093)	.167** (.051)
Age	-.003 (.003)	.007 (.004)
SES	-.010 (.056)	.007 (.042)
Perceived Incivility	.016 (.021)	.066***(.016)
Length of Residence	-.004 (.007)	-.001 (.008)
Volunteer Activities	.069 (.147)	.409** (.141)
Perceived Risk	_____	.059***(.009)
CROSS LEVEL INTERACTION		
Mobility x Length of Residency	.015** (.005)	_____
Econo Disadvantage x Neighborhood Watch	-.205* (.085)	_____
Mobility x Perceived Incivility	_____	-.042** (.013)
Economic Disadvantage x Volunteer	_____	-.325** (.088)
Crime x Perceived Risk	_____	.025* (.009)
VARIANCE EXPLAINED		
Within-District	.198	.348
Between-Districts	nt (a)	.547

Note: Entries are unstandardized coefficients and numbers in parenthesis are standard errors;
All outcome variables were standardized (mean=0, standard deviation=1)
(a) Variance explained between districts was negative
* $p < .05$, ** $p < .01$, *** $p < .001$

Even though the hypotheses were not explicitly stated, the hypothesized relationships between predictors and perceived risks were considered the same as those between predictors and fear. At the district level, the results suggested that none of the district-level variables had significant effects on perceived risk. At the individual level, satisfaction with police, perceived cohesion, victimization, and indirect victimization were significantly associated with perceived risk. Consistent with the expectation,

citizens perceiving higher levels of cohesion expressed significantly lower levels of risks of victimization, while those who were victims in the past, and those who had relatives, friends, or family members who were victims of crime reported significantly higher levels of risks of victimization. Contrary to the expectation, citizens perceiving higher satisfaction with police expressed higher levels of risks of victimization. The cross level interaction between district-level mobility and citizen-level length of residence had significantly positive effects on perceived risk, while the interaction between district-level economic disadvantage and citizen-level neighborhood watch had significantly negative effects on perceived risk. These results suggest that citizens living in the neighborhood longer express higher levels of risks of victimization when they reside in districts characterized by higher levels of mobility. As well, citizens having neighborhood watch teams in the community expressed lower levels of risks of victimization when they reside in districts characterized by higher levels of economic disadvantage. Finally, these two models together showed that, consistent with the hypothesis, perceived risks of victimization had a positive effect on fear of crime (H5a). That is, citizens perceiving higher levels of risks of victimization reported higher levels of fear of crime. Interestingly, the effects of perceived cohesion and victimization were significant on perceived risks, but not on fear of crime, which indicated that perceived risks mediated the effects of perceived cohesion and victimization on fear of crime. That is, even though perceived cohesion and victimization did not directly increase the levels of fear of crime, they played an important role in reducing or enhancing fear of crime via decreasing or increasing perceived risks of victimization. The citizen-level variables altogether accounted for 19.8 percent of the within district unit variance. Surprisingly,

the explained variance between district-units in this model was negative, which might be interpreted based on Snijders and Bosker's (1993) arguments against calculating explained variance between groups based on the proportional reductions in the estimated variance components by comparing the size of variance between one-way ANOVA model and the fixed effect full model, especially in an unbalanced design. Scholars in multilevel analysis cautioned for meaningfully interpreting the explained variance between groups in some unbalanced design situations. [6]

Perceived Risk, Fear, and Behavioral Adaptations

Finally, three hierarchical linear models for constrained actions, cautious actions, and active defense were estimated to investigate the structural associations between perceived risk, fear and behavioral adaptations. These models also served to assess the effects of both district-level and citizen-level predictors on behavioral adaptations. In one-way ANOVA models, the intraclass correlation coefficients (.089, .038, and .095) suggested that about 8.9 percent of the variation in constrained actions, about 3.8 percent of the variation in cautious actions, and about 9.5 percent of variation in active defense was between districts (see Table 9). The district-level reliability estimate (.65, .44, and .66) indicated that the sample means tend to be reliable as indicators of the true district means, hence encouraging further multilevel analysis for these outcome measures. Next, random coefficient regression models were estimated including all of the citizen-level variables. All citizen-level variables, except dummy coded variables, were centered around the group means. As previously mentioned in the model building procedure, some of the citizen-level variables had effects that varied across districts, indicating some multilevel interactions. As a result, the slopes of these variables remained constant

across districts along with the intercept. For the citizen-level variables that did not have effects varied across districts, the slopes were fixed within districts. In the combined final model, district-level variables such as mobility, economic disadvantage, and crime were grand mean centered. They were modeled to predict only the intercept since these variables were not significant in predicting the slopes of level-1 variables.

Table 12. Hierarchical Linear Models for Behavioral Adaptations (N=654 in 25 Districts)

Variables	Constrained Actions	Cautious Actions	Active Defense
Constant	-.543***(.098)	-.219* (.086)	-.142 (.105)
DISTRICT LEVEL (N=25)			
Mobility	.084 (.054)	-.010 (.046)	.052 (.058)
Economic Disadvantage	.015 (.058)	-.026 (.062)	.001 (.056)
Crime	.118 (.070)	-.115 (.062)	.016 (.042)
CITIZEN LEVEL (N=654)			
Satisfaction with Police	-.011 (.009)	-.011 (.015)	-.024 (.013)
Perceived Community Policing	.020 (.023)	.050***(.012)	.079***(.019)
Perceived Cohesion	.020 (.012)	.025* (.012)	.009 (.018)
Neighborhood Watch	.043 (.099)	-.219* (.099)	.052 (.112)
Victimization	.227* (.093)	.130 (.128)	.258* (.114)
Indirect Victimization	.300* (.107)	.088 (.105)	.125 (.121)
Crime on Media	-.101 (.071)	.041 (.106)	-.142 (.093)
Female	.671***(.068)	.246** (.068)	.040 (.087)
Age	.004 (.003)	.010** (.003)	-.003 (.004)
SES	-.034 (.036)	.130** (.044)	.032 (.040)
Perceived Incivility	.026 (.015)	.012 (.017)	.019 (.016)
Length of Residence	-.007 (.005)	-.003 (.005)	-.004 (.007)
Volunteer Activities	.012 (.164)	-.117 (.181)	-.005 (.114)
Perceived Risk	-.002 (.007)	.003 (.010)	-.006 (.008)
Fear of Crime	.041** (.010)	.021* (.010)	.004 (.011)
VARIANCE EXPLAINED			
Within-District	.377	.192	.177
Between-Districts	.182	.217	.458

Note: Entries are unstandardized coefficients and numbers in parenthesis are standard errors;
All outcome variables were standardized (mean=0, standard deviation=1)
* $p < .05$, ** $p < .01$, *** $p < .001$

As in the perceived risk model, the effects of district and individual level variables on behavioral adaptations were assumed to be the same as those on fear of crime. At the district level, the results suggested that none of the district-level variables had significant effects on constrained actions, cautious actions, or active defense. At the individual-level,

victimization, indirect victimization, female, and fear were positively associated with constrained actions, which was consistent with the expectation. Victims, citizens who had family members, relatives, or friends as victims of crime, females, and citizens perceiving higher levels of fear of crime were more likely to adopt constrained actions. The hypothesized relationship between fear and constrained actions was supported (H5c), while that between perceived risk and fear was not supported (H5b). That is, citizens perceiving higher levels of fear of crime were more likely to take constrained actions, while the effect of perceived risk on constrained actions was not statistically significant. The citizen-level variables altogether accounted for about 37 percent of the within-district unit variance in constrained actions.

Perceived community-policing activities, perceived cohesion, female, age, SES, and fear were positively associated with cautious actions, while neighborhood watch was negatively associated with cautious actions. Citizens perceiving higher levels of community-policing activities, those perceiving higher levels of community cohesion, females, the elderly, those in higher levels of socioeconomic status, and those perceiving higher fear of crime were more likely to adopt cautious actions. On the other hand, those who had a neighborhood watch team in the community were less likely to adopt cautious actions. As in constrained actions, the hypothesized relationship between fear and constrained actions was supported (H5c), while that between perceived risk and fear was not supported (H5b). That is, citizens perceiving higher levels of fear of crime were more likely to take cautious actions, while the effect of perceived risk on cautious actions was not statistically significant. The citizen-level variables accounted for about 19 percent of the within-district unit variance in cautious actions.

Only perceived community-policing activities and victimization were significantly associated with active defense. The effects of these predictors on active defense were positive. That is, citizens perceiving higher levels of community-policing activities in the neighborhood were more likely to adopt active defense tactics, and crime victims were more likely to adopt active defense tactics. Unlike the previous two behavioral adaptations (i.e., constrained actions and cautious actions), the hypothesized relationship between fear and active defense as well as between perceived risk and active defense was not supported (H5b, H5c). That is, the effects of fear and perceived risk on active defense were not statistically significant. The citizen-level variables accounted for about 18 percent of the within-district unit variance in active defense.

As stated, one of the objectives of estimating these models of behavioral adaptations was to investigate associations between perceived risk and behavioral adaptations as well as between fear and behavioral adaptations. Contrary to the hypothesis, perceived risk was associated with none of the behavioral adaptation measures (H5b). That is, perceived risks of victimization had no statistically significant effects on constrained actions, cautious actions, or active defense. On the other hand, fear of crime had significantly positive effects on constrained actions and cautious actions, while the effect on active defense was not significant. Citizens perceiving higher levels of fear of crime were more likely to take constrained actions and cautious actions. The hypothesized relationship between fear and behavioral adaptations, therefore, was partly supported (H5c). It was interesting to see the results that fear of crime was associated with constrained actions and cautious actions, while perceived risk was not linked to any of the behavioral adaptations measures.

(3) Summary of Findings

Figure 5 presents a path diagram to summarize and synthesize the findings from the multilevel models for fear, risk, and behavioral adaptations. Overall, the fixed effects hierarchical models revealed some general patterns. In the community context model, mobility, economic disadvantage, and crime were positively, and population density was negatively associated with fear of crime. The hypothesized relationships between mobility, economic disadvantage, crime and fear, therefore, were supported (H1a, H1b, H1c). On the other hand, the hypothesized relationship between population density and fear was not supported (H1d). Rather, the relationship between population density and fear was the opposite of the hypothesis. Interestingly, unlike their significant influence on fear of crime, none of the predictors in the community context model was significant in estimating perceived risk or behavioral adaptation measures.

In the community concern/control model, none of the predictors in this model had significant effects on fear of crime. The hypothesized relationships, therefore, were not supported between perceived community-policing activities, satisfaction with police, perceived cohesion, neighborhood watch and fear (H2a, H2b, H2c, H2d). On the other hand, these predictors had some significant effects on perceived risk or behavioral adaptation measures. More specifically, perceived community-policing activities had positive effects on cautious activities and active defense. Satisfaction with police had positive effects on perceived risk, which was an unexpected result. Perceived cohesion had negative effects on perceived risk, while it had positive effects on cautious actions. Neighborhood watch had negative effects on cautious actions. Finally, the structural path

dimensions indicated that among the predictors in this model, only perceived cohesion was indirectly and negatively linked to fear via reducing perceived risk.

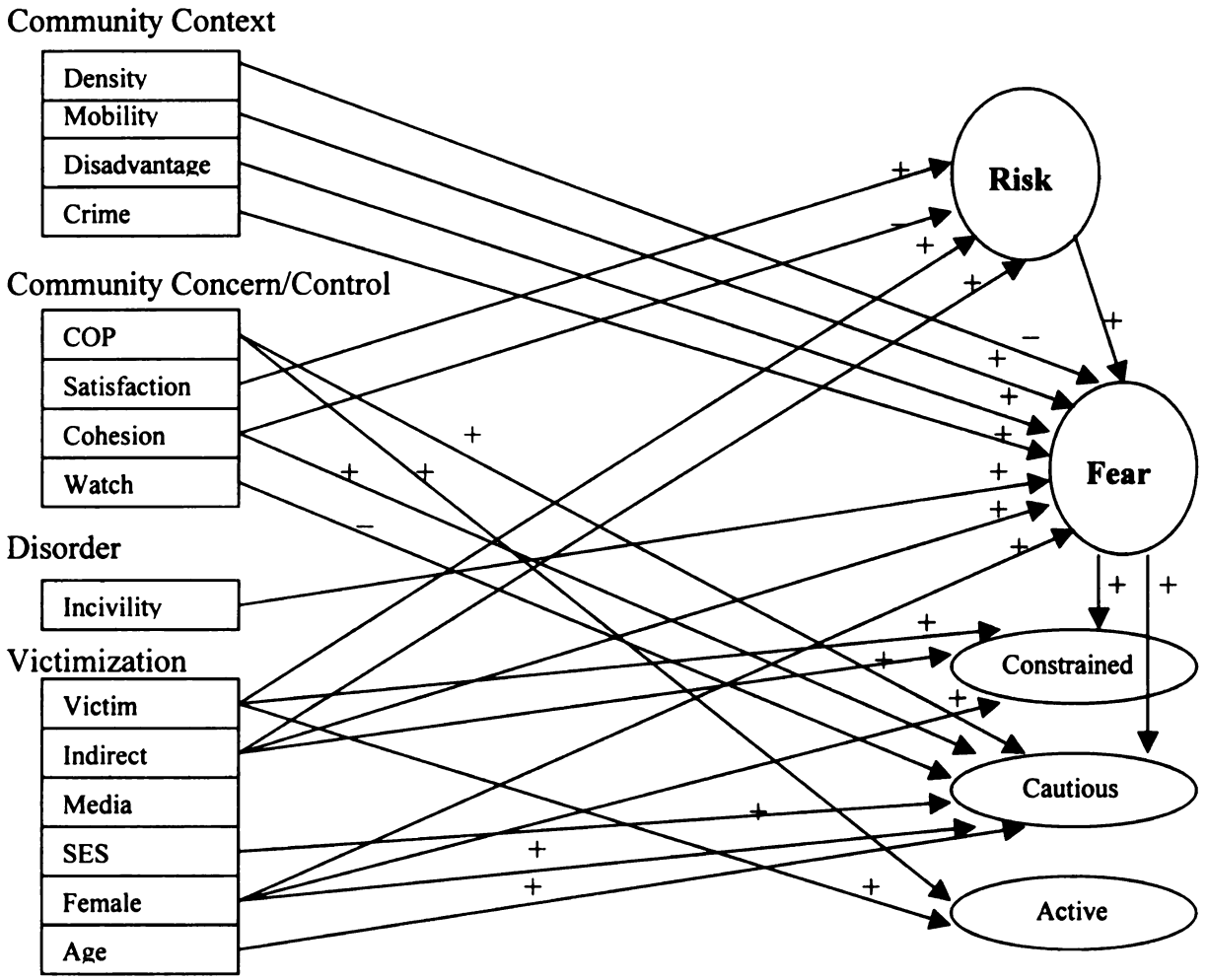

Figure 5. A Path Model of Fear of Crime (significant effects only).

The sole predictor in the disorder model, perceived incivility, had positive effects on fear, hence the hypothesized relationship between perceived incivility and fear was supported (H4). Interestingly, however, this perceived incivility did not have any significant effects on perceived risk or behavioral adaptation measures.

In the victimization model, victimization had no significant effects on fear, and the hypothesized relationship was not supported (H3a). On the other hand, the effects of victimization were significantly positive on perceived risk, constrained actions, and

active defense. Even though, there was no direct effect of victimization on fear, victimization was indirectly associated with fear via increasing perceived risk, considering the significant association between perceived risk and fear. Indirect victimization had significantly positive effects on fear of crime. The hypothesized relationship between indirect victimization and fear, therefore, was supported (H3b). Indirect victimization also had significantly positive effects on perceived risk and constrained actions. Surprisingly, crime on media had significant effects on neither fear nor any of the other outcome measures. The hypothesis between crime on media and fear, therefore, was not supported (H3c).

The victimization model also includes vulnerability measures such as gender, age, and SES. Female had significantly positive effects on fear, which supported the hypothesized relationship between the two (H3e). The influence of being a female on other outcome measures was also significant. That is, being a female had positive effects on constrained actions and cautious actions. On the other hand, age and SES had no significant effects on fear. The hypothesized relationships between age, SES and fear, therefore, were not supported (H3d, H3f). In addition, the effects of these predictors on perceived risk, constrained actions, and active defense were not significant. The only outcome statistically influenced by age and SES was cautious actions. Both age and SES had positive effects on cautious actions.

It is also worth noting some structural dimensions among outcome measures. Perceived risk had significantly positive effects on fear, but it did not have any significant effects on all of the behavioral adaptation measures. The hypothesized relationship between perceived risk and fear was supported (H5a), while the relationships between

perceived risk and behavioral adaptation measures (i.e., constrained actions, cautious actions, active defense) were not supported (H5b). On the other hand, fear of crime had positive effects on constrained and cautious actions, which partly supported the hypothesized relationships between fear and behavioral adaptations (H5c). Perceived risk, therefore, was indirectly associated with constrained and cautious actions via increasing fear of crime. This result indicated that the hypothesis for the structural association among perceived risk, fear, and behavioral adaptations was partly supported (H5d).

Finally, perceived risk acted well as a mediator between some conceptual predictors and fear. More specifically, perceived risk mediated the effects of perceived cohesion, victimization, and indirect victimization on fear of crime. That is, regardless of their direct effects on fear, these predictors were connected indirectly to the levels of fear via reducing or enhancing perceived risk. Overall, the results supported the revised causal frame over the risk interpretation model by Ferraro (1995). It was indicated that the structural associations were well estimated when perceived risk was considered as a major mediator between conceptual factors and fear, and when behavioral adaptations were considered as responses to fear as well as perceived risk. This chapter reported the major research findings. The next chapter will discuss the implications of the results in both theoretical and practical terms.

CHAPTER SEVEN
DISCUSSION AND CONCLUSION

1. Discussion

The purpose of this study was to test four conceptual models of fear of crime—the community context model, the community concern/control model, the disorder model, and the victimization model—for directional accuracy and the ability to explain fear of crime in Seoul, the fifth largest city in the world. This research also sought to discover the effect of social conditions and perceived community policing activities on fear of crime. More specifically, this study was aimed at understanding how district environments and programs of community policing influence citizens' fear of crime in this city. The objective of this research included evaluating the causal frame revised from Ferraro's risk interpretation model in the Seoul context. Different from Ferraro's model, all predictors were considered in conceptual or theoretical models, perceived risk was considered as the major mediator between conceptual factors and fear, and behavioral adaptations were considered as the response to fear as well as perceived risk. In this chapter, these research purposes are discussed based on the findings and in comparison to previous research in Asia and the United States and other Western countries.

(1) District Level Conditions and the Community Context Model

District-level social conditions such as mobility, economic disadvantage, and crime were positively associated with fear of crime. Consistent with the hypotheses, citizens residing in districts characterized by higher mobility, higher economic disadvantage, and higher crime reported higher levels of fear of crime. These findings were best interpreted in light of theoretical insights drawn from Shaw and McKay (1942),

Sampson and Groves (1989), Bursik and Grasmick (1993), and their followers, indicating that social disorganization theory offered powerful constructs for explaining fear of crime in this city. The fifth largest city in the world, Seoul has been rapidly industrialized as a main center of economic and political activities. As in most developing cities, rapid industrialization accompanied by economically disadvantaged groups of people, residential mobility, and other negative urban characteristics might result in social disorganization and the deterioration of informal social control mechanisms in Seoul, despite the long Confusion tradition of private and parochial level social controls. Accordingly, therefore, social disorganization exogenous variables (i.e., mobility, economic disadvantage) and negative social conditions (i.e., crime) were responsible for higher levels of fear of crime in this city.

While these social conditions offer solid constructs for explaining fear of crime, the results revealed that they were not directly responsible for perceived risks of victimization or behavioral adaptation measures. The path model in figure 5 indicated, however, that these district-level social conditions were responsible for fear, and fear was structurally linked to both perceived risk and behavioral adaptations. It is important to note, therefore, that these social conditions specifically influence behavioral adaptations (i.e., constrained actions, cautious actions) indirectly, if not directly, via increasing fear. District-level social conditions, therefore, were important in explaining the quality of life among Seoulites, considering the significant roles of fear and constrained behaviors in further deteriorating social control in communities (Markowitz et al., 2001; Taylor, 2001). Social disorganization theory has not been examined in its entirety in this study, but the tests with these major social disorganization predictors in Seoul revealed that theoretical

mechanisms of rapid industrialization, negative social conditions, social disorganization or deterioration of neighborhood cohesion, crime, and fear developed in Western settings (see Sampson et al., 1997; Shaw & McKay, 1942; Taylor, 2001) generalized well to the Seoul context.

Contrary to the hypothesis, however, population density was negatively associated with fear. Citizens residing in districts characterized by higher population density expressed lower levels of fear of crime, which was contrary to the hypothesized expectations. This finding was not consistent with the recognition of population density as one of the indicators of crime in Western research (see Osgood & Chamber, 2000; Park & Burgess, 1925). Park & Burgess (1925) realized that Zone II, as the zone of transition, was responsible for much of the crime and delinquency in the five concentric zones in Chicago. Located right next to the central business district, this zone was the most disorganized area, characterized by poor residents, population density and turnover, and deteriorated buildings. Perhaps the process of city development in Seoul, compared to the situation in Western cities, may provide an answer for the negative association between population density and fear. The distribution of population in the five concentric zones (Park & Burgess, 1925) showed that poor residents were residing in Zone II, blue-collar residents were in Zone III, and middle-income residents with yards and garages were in Zone IV. Ecological analysis of urban life in the U.S., therefore, indicated that wealthy citizens tended to reside toward city borders and the poorest residents were right next to the central business districts. On the other hand, only wealthy citizens appear able to afford residing toward the center of the city in Seoul. As the comparison between population density (see Figure 3) and population living in poverty (Figure 4) illustrates,

contrary to the situation in U.S. cities, poor citizens resided toward the city border areas of lower population density in Seoul, which suggested urban life in this city was different from that of major U.S. cities. Due to the availability of quality education and positive social networks, wealthy citizens may tend to reside in inner city areas of higher population density in Seoul. Population density, therefore, does not appear to be an indicator of social disorganization in this city. In such a situation, perspectives from the routine activities theory (Cohen & Felson, 1979) may supplement the social disorganization perspectives in explaining the negative association between population density and fear of crime. Surrounded by many dependable residents, citizens residing in districts characterized by higher population density in Seoul may perceive lower levels of fear of crime due to both physical and psychological guardianship, despite the possibilities of more opportunities of crime, more motivated offenders, and higher complexity and anonymity.[7] The results in the community context model in the Seoul context, therefore, suggest a differential effect of social conditions due to the unique social structural characteristics of Seoul.

(2) Community Policing and the Community Concern/Control Model

One suggestion is that fear rises as concerns about the level of formal and informal social control in the neighborhood increases (Taylor & Hale, 1986). The results indicated that formal social control dimensions such as perceived community policing activities and satisfaction with police had no significant effects on fear of crime, which was not consistent with the hypotheses and the findings in previous research. Prior studies in Western contexts reported mixed results regarding the effect of community policing activities on fear (Zhao et al., 2002). In some research, community policing was

not a significant factor, but in other studies, citizens perceiving higher levels of community policing activities expressed lower levels of fear of crime. On the other hand, public satisfaction with or confidence in the police were consistently associated with fear (Box et al., 1988; McGarrell et al., 1997), indicating that Western citizens satisfied with or confident in the police expressed lower levels of fear of crime. In the Seoul context, however, the results of this study suggested that neither community policing nor satisfaction with police played any role in explaining citizens' fear of crime. Perhaps, traditional perceptions of the police as authority figures based on the Confucian ideology of respect for authority (Joo, 2003), as well as the historically carved image of the police as the arm of the state throughout colonization and military regimes (Pyo, 2002), might be responsible for the insignificant role of community policing activities and satisfaction with police in explaining citizens' fear of crime. This stands in contrast to the results in the Western context where citizens perceive the police as a public partner or protector (Trojanowicz & Dixon, 1974) or a functional understanding of the police as an agency responsible for crime control (Lab & Das, 2003).

The historical image of the police as an agency for the government might make it difficult for Seoul citizens to accept the role of police as a legitimate function for a public partnership or protection. Scholars have recognized that respect for law enforcement and acceptance of the law as being legitimate as some of the prerequisites of the successful implementation of community policing (Davis et al., 2003; Gramckow, 1995; Manning, 1984). In addition, defiance theory and procedural justice emphasize legitimacy as well as fairness (Sherman, 1993; Tyler, 2003) for law enforcement to be successful. Although community policing may ultimately increase the legitimacy and perceived fairness of the

police in Korea, this study does not find that such perceptions influence fear of crime at this point in time.

In addition, predictors of informal social control dimensions such as perceived neighborhood cohesion and neighborhood watch were not significantly associated with fear of crime, which was not consistent with the hypothesized expectations. This was a surprising result considering the long tradition of informal social controls in this cultural context as well as the consistently negative effects of these predictors on fear in Western contexts (Bursik & Grasmick, 1993; Gibson et al., 2002; Sampson et al., 1997). The limited variation in neighborhood cohesion in urban areas in Korea due to cultural and ethnic homogeneity might be responsible for this result, compared to the high variation of neighborhood cohesion in Western countries due to the unequal distribution of race and wealth as well as cultural diversity and conflicts. Furthermore, based on the influence of Confucianism in Asian countries, the emphasis on informal social controls has largely characterized the culture in Korea (Cao & Cullen, 2001; Wong, 2001). Neighborhood cohesion and neighborhood watch as factors of fear of crime, therefore, might be more important in individualistic Western societies, and would possibly be less important estimating fear of crime in the Seoul context due to traditionally stable informal social networks. It is worth noting, however, that even though neighborhood cohesion had no direct effects on fear of crime, it contributed to the reduction of the levels of fear of crime via decreasing perceived risks of victimization in Seoul (see Figure 5), which suggested that neighborhood cohesion was playing an indirect role for the reduction of fear in the Seoul context.

Unlike their insignificant effects on fear of crime, some of the predictors in the community concern/control model were significantly associated with perceived risk or behavioral adaptation measures. Perceptions of community policing activities had positive effects on both cautious actions and active defense. Citizens perceiving more community-policing activities were likely to adopt more cautious and active defense tactics. This is explained convincingly based on the emphasis of community policing activities in this city, which included sending out officers to educate citizens in strategic tactics such as cautious actions and active defense (i.e., carrying a self-defense weapon). As in many Western police agencies, the implementation of community policing in Korean police agencies is programmatic. Citizen police academies, education of strategic defense tactics, and encouragement of active defense are some of the examples. Police officers in Seoul are often encouraged to attend monthly meetings with residents and provide information and education for strategic and active tactics for defense. This finding indicated that the police strategies for these community-policing programs worked in the way the police intended, regardless of the effectiveness of these tactics on crime prevention or fear reduction.

Interestingly, satisfaction with police was positively associated with perceived risk, which was the opposite of the hypothesized relationship. That is, citizens with higher satisfaction with police were likely to perceive higher risks of victimization. This finding was difficult to understand. Perhaps, citizens perceiving higher risks of victimization would like to rely on the police. Such a psychological aspect of the reliance on the police from citizens perceiving higher risks may be responsible for their higher satisfaction with police. This inverse of speculation may help interpret the positive

association between satisfaction with police and perceived risk, but clearly it requires further investigation.

Perceived cohesion had a negative effect on perceived risk, while it had a positive effect on cautious actions. Citizens noticing greater cohesion perceived lower risks of victimization, which was consistent with the hypothesis. This finding was also consistent with the scholarly notion that neighborhood cohesion enhances a sense of safety (Baumer & Hunter, 1979; LeBailly & Gordon, 1981). Importantly, due to this negative effect of perceived cohesion on perceived risk, perception of cohesion was linked to decreased levels of fear via reducing perceived risks of victimization. On the other hand, citizens perceiving greater cohesion were likely to adopt more cautious actions. The measure of cautious action in this study was related to strategic tactics for crime prevention, sometimes collaborating with neighbors. Accordingly, citizens might adopt more strategic tactics when they resided in a community with stronger relational ties with neighbors. As stated, even though neighborhood cohesion was not significantly associated with fear of crime, the results indicated that neighborhood cohesion is structurally connected with fear and is important in explaining aspects of quality of life among Seoulites due to its negative influence on perceived risk and positive influence on cautious actions. Interestingly, however, citizens residing in the community with neighborhood watch teams were less likely to adopt cautious actions, perhaps due to their reliance on the role of neighborhood watch teams for crime prevention activities.

(3) The Disorder Model

Disorder signals physical lack of concern about the neighborhood and social lack of adherence to norms of public behavior (Taylor & Hale, 1986). The results supported

this disorder thesis, suggesting that citizens perceiving physical incivilities (i.e., neglected places, rubbish) and social incivilities (i.e., delinquent juveniles, drunken people) in the neighborhood expressed higher levels of fear of crime in Seoul. This is consistent with research findings in Western contexts (see Ross & Jang, 2000; Skogan, 1990; Taylor & Hale, 1982), broken windows thesis (Wilson & Kelling, 1982), and disorder and decline thesis (Skogan, 1990). As scholars have noted, rapid urbanization envelops communities with high social and physical incivilities which stimulate not only general anxiety but also fear by signaling that residents are surrounded by symbolic and actual threats of victimization. As the capital of a small country that has grown into the fifth largest city in the world, Seoul is the symbol of the economic miracle of South Korea. The significantly positive association between perceived incivilities and fear of crime supported the thesis linking urbanization, disorder, crime, fear, and community decline (Skogan, 1990; Wilson & Kelling, 1982) in the Seoul context.

(4) The Victimization Model

There was no direct effect of victimization on fear of crime, but the effect of victimization on fear was indirect via increasing perceptions of risks of victimization. This finding, even though it was contrary to the hypothesis, was not surprising considering the inconsistent findings in prior research and the debate that being a victim might make people more cautious, but it might not necessarily make people more fearful (DuBow et al., 1979; Lee, 1998). Rather, this result was consistent with some of the research findings in the Western context (Garofalo, 1979; Liska et al., 1988; McGarrell et al, 1997), the paradox of the discrepancy between victimization pattern and fear pattern (i.e., young males versus elderly women), and Agnew's (1985) notion that victims tended

to experience less fear because of their neutralization by enhancing their ability for defense. Victimization in Seoul was only indirectly associated with fear via enhancing perceived risks of victimization.

On the other hand, indirect victimization had a significantly positive effect on fear of crime as well as on perceived risks. Indirect victimization, therefore, was associated with fear directly and indirectly via increasing perceived risks. Indirect victimization in this study was measured based on the knowledge of victimization through social contacts. These findings suggested that indirect victimization was more significant in explaining fear of crime among Seoulites, which is consistent with the notion of a crime multiplier (Taylor & Hale, 1986) and the notion that hearing of the victimization from a relative, neighbor, or friend stimulates one's full scope of imagination (Hale, 1996; Skogan & Maxfield, 1981). The web-like network among neighbors and residents in Korea may explain this significant role of indirect victimization in explaining fear. Due to the traditionally intense informal social networks among Koreans (Joo, 2003), gossip and crime related news spreads easily, which might act as a significant source of the vicarious experience of victimization.

Regarding the association between victimization and behavioral adaptations, it was interesting to see that victims were more likely to adopt active defense tactics such as carrying self-defense weapons, while indirect victims were more likely to adopt constrained actions. Again, considering the negative role of constrained actions in community deterioration, the influence of indirect victimization (i.e., having friends, relatives, and family members who were victimized in the past) was more influential than victimization itself to quality of life in the Seoul context.

In the case of indirect victimization, scholars have noted that crime on media serves as another source of vicarious experience of victimization (Skogan & Maxfield, 1981), in addition to the informal social network. Citizen perception of crime in the media, however, was not significantly associated with fear of crime in this study. In addition, crime on media was not significantly associated with perceived risk or behavioral adaptation measures. One possible explanation for this is that Seoulites share very similar sources of media (i.e., newspapers and broadcasting services). Such homogeneity in media services may be responsible for the insignificant role of crime on media in explaining fear, perceived risk, and behavioral adaptation measures. Another possibility was related to the weakness in the method that crime on media was measured based on a single survey item in this study. Utilizing multiple items to include the time exposed to crime related news and the sources (i.e., television versus newspaper) that the respondents rely on might generate different results.

The victimization model also includes the concept of vulnerability. The vulnerability thesis notes that some people, regardless of their actual victimization, express higher levels of fear due to their social and physical vulnerabilities (Killias, 1990; Skogan & Maxfield, 1981). Based on this thesis, it was hypothesized that citizens of lower socioeconomic status would likely express higher levels of fear of crime because they have fewer resources to handle the consequences of victimization, and women and the elderly express higher levels of victimization because they have les physical ability to defend themselves. Among the predictors of gender, age, and SES, however, only gender was significantly associated with fear of crime in this Seoul study. Females expressed significantly higher levels of fear of crime. In addition, females were more likely to

adopt constrained and cautious actions. On the other hand, both age and SES were not significant predictors of fear or constrained actions. Rather, they had positive effects only on cautious actions. The elderly and the rich were likely to adopt cautious or strategic actions for crime prevention. The significant role of gender in fear, constrained actions, and cautious actions, compared with the limited role of age and SES, suggested that gender was much more important than any other vulnerability measure in explaining quality of life aspects in Seoul. This result is consistent with the traditional Confucian ideology emphasizing passive and obedient roles for women (Joo, 2003; Lee, 2003; Yoon, 1998), as well as traditions of educating citizens to respect the authority of the elderly. Females might perceive higher levels of fear and be more likely to adopt constrained and cautious actions due to their socially low status as well as their physical vulnerability. On the other hand, the elderly might enjoy the traditional respect for age, and so might not perceive higher levels of fear of crime and not necessarily adopt constrained action, despite their physical weakness. Surprisingly, even a negative association between age and fear of crime was reported in China (Curran & Cook, 1993) where the elderly were less fearful than younger citizens probably because of their high social status based on Confucian tradition. This result is in contrast to the findings in the Western context where the elderly as well as those in lower social classes expressed higher levels of fear and adopted more constrained actions (Kury et al., 2001; Skogan & Maxfield, 1981; Taylor & Hale, 1986). In addition, compared to their culturally and racially diverse counterparts in Western context, citizens of lower socioeconomic status in Seoul may perceive less social vulnerability due to the homogeneity of race and culture. This situation may explain the insignificant association between SES and fear as well as SES

and constrained actions in this city. In contrast to the findings on fear, the results in this study indicated that the elderly and the citizens of higher socioeconomic status might tend to adopt cautious actions probably due to their maturity and their willingness to protect their wealth in the Seoul context.

(5) Perceived Risk, Fear, and Behavioral Adaptations

Unlike Ferraro's (1995) risk interpretation model in which both perceived risk and behavioral adaptation were considered as major mediators between conceptual predictors and fear, the revised model for this study considered perceived risk as the major mediator between conceptual predictors and fear and relocated behavioral adaptations as the response to fear as well as perceived risk. The results indicated that some conceptual predictors (i.e., perceived cohesion, victimization, indirect victimization) had significant effects on perceived risk, and perceived risk had significantly positive effects on fear of crime. These findings supported the interpretation that perceived risk mediated the effects of perceived cohesion, victimization, and indirect victimization on fear of crime. That is, perceived cohesion, victimization, and indirect victimization were linked to levels of fear of crime, via decreasing and increasing perceptions of risk of victimization. Perceived risk, therefore, acted as the mediator between these conceptual predictors and fear of crime. This result was consistent with Ferraro's (1995) model in which perceived risk performed well as a mediator between predictors and fear.

Based on the reciprocal relationship between fear and constrained behavior (Liska, et al., 1988; Taylor, et al., 1986), Ferraro (1995) focused on the effect of constrained behavior on fear, and he reported the positive effect of constrained behavior on fear. As

stated, the revised model in this study, however, relocated behavioral adaptations (i.e., constrained actions, cautious actions, active defense) as the response to fear as well as perceived risk to investigate the effect of fear as well as perceived risk on constrained, cautious, and active actions. The results indicated that behavioral adaptation measures were well explained when they were considered as the response to fear of crime. Fear of crime had positive effects on both constrained and cautious actions, which was consistent with the understanding of fear as a facilitator of community deterioration (Garofalo, 1981; Skogan & Maxfield, 1981). Those who perceived higher levels of fear of crime were more likely to adopt constrained and cautious actions, perhaps as their responses to fear. On the other hand, none of the behavioral adaptations were directly influenced by perceived risk. Perceived risk was indirectly linked with behavioral adaptations via increasing fear. In the case that behavioral adaptation was located between perceived risk and fear as in Ferraro's (1995) model, therefore, perceived risk would not be linked to behavioral adaptation measures, considering the lack of significant association between perceived risks and behavioral adaptation measures in this study. Rather, the results of this study indicated that perceived risk was indirectly linked to behavioral adaptation measures via increasing fear of crime, which suggested that behavioral adaptations were well estimated when they were considered as the response to fear as well as perceived risk. The results, therefore, supported this revised model over Ferraro's (1995) risk interpretation model in the Seoul context.

(6) Cross Level Interaction

Finally, this study recognized the importance of the interaction between social contexts and individual-level perceptions in investigating factors of fear of crime. For

example, the positive effect of volunteer activities on fear of crime did not have the same effect in economically disadvantaged districts. Specifically, the interaction between district-level economic disadvantage and citizen-level volunteer activities suggested that citizens volunteering for crime prevention activities in economically disadvantaged districts perceived lower levels of fear of crime. In contrast, crime prevention volunteers in economically advantaged districts experienced increased fear. A possible interpretation is that crime prevention activities might increase the suspicion of others through these activities (Zhao et al., 2002) since citizens might recognize problems they have not previously perceived due to the high quality of life in wealthy districts. Citizens in disadvantaged districts might address their fear through such volunteer activities. On the other hand, the positive effect of the interaction between crime and perceived risk suggested that the positive effect of perceived risk on fear was heightened in districts characterized by higher crime, probably due to the existence of both perceived and actual risks of victimization. That is, perceived risk of victimization may accelerate fear in environments of higher crime.

Unlike the positive effect of both mobility and perceived incivility on fear of crime when they were assessed individually, citizens perceiving higher incivilities expressed lower levels of fear in districts characterized by higher mobility. The negative bivariate correlation between mobility and aggregated perceptions of incivility indicated that the patterns of mobility and perceived incivility were different. The negative effect of their interaction suggested that mobility, like population density, might be somewhat different from that of Western cities. Based on this result, it was reasonable to speculate that mobility might include some dimensions other than social disorganization in the

Seoul context. As wealthy citizens reside in districts characterized by higher population density (see Figure 3 and Figure 4), high mobility may also be associated with the popularity of the districts. A study indicated that the population of Seoul doubled between 1970 and 1988, but 80 percent of the population growth was concentrated in several wealthy districts in the part south of Han-River (Kang, 1989). Seoulites tended to move into these popular districts due to quality education for their children and move out from there after some period due to the high costs of living. Even though mobility and perceived incivility were associated with fear, citizens perceiving incivilities in higher mobility districts expressed less fear than those perceiving incivilities in lower mobility districts, probably due to the high quality of living in some high mobility districts despite their perceptions of incivilities. Overall, the cross-level interactions indicated that the effects of individual-level predictors are not to be readily generalized without considering social contexts.

2. Conclusion and Policy Implications

The study of fear of crime goes beyond learning about the perception of safety in societies. The primary concern is how community environments, individual traits, and formal and informal social control agents contribute to the quality of life in communities. Drawing on the conceptual models of fear of crime and the revised causal frame of the risk interpretation model, this study investigated conceptual factors of fear of crime in the Seoul context. The results indicated that the community context model, the disorder model, and the victimization model were well applicable in Seoul. For example, district-level social conditions, perceived incivility, direct/indirect victimization, and gender were important in explaining fear of crime among Koreans residing in the megalopolis. On the

other hand, the community concern/control model, especially citizen perception of the formal social control dimensions (i.e., community policing activities, satisfaction with police) did not play an important role in determining fear of crime among Seoulites.

While Western scholars recognized social disorganization indicators (i.e., mobility, economic disadvantage, population density) as predictors of fear of crime, the results presented here suggested some of these indicators are not readily generalized in the Seoul context. Specifically, population density and the interaction between mobility and perceived incivility influenced citizens' fear of crime in an inverse way in this city. Contrary to the hypothesized expectation, citizens residing in districts characterized by higher population density expressed higher levels of fear, and citizens perceiving higher incivilities in higher mobility districts reported lower levels of fear. This was not readily understandable without recognizing the process of city development in this country. The process of city development progressed in a way to attract wealthy citizens to the inner city districts in Seoul. The Korean government intentionally supported policies of hosting luxury hotels and department stores as well as good school systems in some inner districts, especially the part south of the Han River (Kang, 1989). Unlike many major Western inner-cities, therefore, wealthy citizens tend to reside in high density inner city districts, which resulted in the unexpected finding of the significantly negative influence of population density on levels of fear among Seoulites. In addition, the interaction between district-level mobility and individual-level perceived incivility suggested that the patterns of mobility and incivility did not match in Seoul, which was responsible for the lower levels of fear among citizens perceiving incivilities in higher mobility districts. These were unexpected findings because population density and mobility are often

understood as major indicators of social disorganization in Western cities (Osgood & Chamber, 2000; Park & Burgess, 1925). These findings in the Seoul context, in comparison to those in the Western context, suggested a practical policy for urban planners in Western countries as well as in South Korea. Specifically, planned city development might result in a better quality of life in inner city areas.

In the community concern/control model, the insignificant influence of satisfaction with police and community policing activities on fear of crime was interpreted based on the historically carved image of the public social control agents as the arm of the state as well as the traditional emphasis on informal social control. Consistently, studies of community policing in the United States showed that the negative image of police among residents was an obstacle to community policing in some communities with historically poor relationship with police (Sadd & Grinc, 1994). For law enforcement to be effective, scholars suggested that procedural justice (e.g., legitimacy, fairness) was essential (Sherman, 1993), and the perception of legitimacy was critical to citizens' adherence to rules (Tyler, 2003). In addition, respect for law enforcement was recognized as a prerequisite of successful implementation of community policing (Manning, 1984). To obtain legitimacy and to make connections between policing and citizen perceptions of quality of life (i.e., fear), it appears essential for the police in South Korea to alter the image of the police to one of service to or partner with the community. This is one argument for community policing strategies, which seek to strengthen the connections between the police and the community and to enhance the sense of security among citizens.

Even though citizen perceptions of community policing activities did not influence their fear of crime, such perceptions did play a significant role for their cautious actions and active measures for crime prevention. As stated, the positive association between perceived community policing and cautious/active behavioral adaptations might be due to police programs to educate citizens for such tactics in this city. The results indicated that the police emphasis on crime prevention tactics was influential for citizen's behavioral adaptations. The insignificance between perceived community-policing activities and fear, however, suggested that the police might need to plan their community policing activities beyond these self-defense tactics. Merely adopting programmatic approaches is not enough to reduce fear of crime. Scholars in the United States realize that organizational struggles continue because of misunderstanding and skepticism of community policing (Greene, 2004; Roth, 2000). This is also true in South Korea where a programmatic approach is dominant. In a nation in transition from an authoritative to democratic form of policing, a broader perspective, beyond mere programmatic strategies, may be critical. Recently, political and police leaders in South Korea implemented significant reforms based on an expanded community policing model emphasizing the need to build partnerships with citizens and to enhance the community oriented attitudes of police officers. In addition to building an equal partnership, core elements of community policing (e.g., geographic ownership) should be fully considered to avoid the simple programmatic approaches and to obtain the effectiveness of community policing in reducing fear among citizens. Lack of officer discretion and structural constraints due to the bureaucratic aspect of the police organization may also be some limitations in implementing community policing in Korea. A multidimensional

approach including philosophical issues and internal situations as well as programmatic dimensions and external relationships is, therefore, suggested.

Finally, gender was very significant in explaining fear, constrained actions, and cautious defense, while age and SES were not significantly associated with either fear or constrained actions. Korea's cultural emphasis on traditional gender roles and on respect for authority appears to explain the differential influence of gender and age on fear. Similarly, cultural and ethnic homogeneity appears to reduce social vulnerability for lower SES citizens. The results, therefore, indicated that conceptual predictors of fear should not be generalized universally without considering culturally unique situations. Importantly, quality of life was much lower for females than males. Females were suffering from higher fear, more constrained actions, and more caution in Seoul. The influence of gender on fear and behavioral adaptations was well contrasted to the insignificant role of age in these outcomes. In turn, this result suggested that gender was associated beyond physical vulnerability, and that gender specific socialization and the traditional culture of male domination might still be influential in South Korea. In addition to physical vulnerability, scholars have noted gendered socialization process (Goodey, 1997) and lack of power in society (Stanko, 1995), as factors affecting fear among females. Political leaders in this country may need to take steps to enhance the quality of life for females, probably by reducing gender inequality in society along with the encouragement of attitudes toward equal relationships early in the socialization process of citizens.

3. Limitations and Future Research

This dissertation has extended research on communities (i.e., social disorganization, disorder, formal/informal social control), crime, and quality of life (i.e., fear, perceived risk, behavioral adaptations) beyond Western contexts in the course of developing a causal model of fear of crime in a megalopolis, Seoul. The research is limited because the data did not provide enough evidence to outline the distinct process of city development in comparison to Western cities; even though the evidence indicated that some social disorganization indicators (i.e., population density) are not readily applicable in this city in explaining fear of crime. Social context was defined as districts (Gu) with the population of several hundred thousand, and this study was justified based on the reasoning that there would be a certain amount of variation in behavior and perceptions that is explained by district-level environment. As scholars noted, however, emphasis on micro units of community would be more consistent with the concept of community as a place where residents share basic social life and norms (Bursik & Grasmick, 1993; Wooldredge, 2002). Research, therefore, should closely examine the effect of these social conditions in smaller units of within-group homogeneity in Dongs (communities) or Tongs (sub-communities) in the Seoul context, as scholars in the Western context focus on blocks, block groups, or census tracts that are similar on various census indicators (Wooldredge, 2002). Further investigation of the patterns of social disorganization indicators (i.e., mobility, density, economic disadvantage, incivility) in smaller units of this city would provide clearer answers of differential effects of some of these indicators on fear of crime.

In addition, this study reinforced the need for comparative research. Although there were similarities in the findings of this study and previous Western research, there

were also important differences. Particularly surprising was the finding that population density was negatively associated with fear, and citizen perception of formal social control dimensions as well as age and SES were not significant predictors of fear in the Seoul context. A distinct process of city development along with history and culture were discussed in this regard. A comparative perspective of this study relied on prior research findings due to the lack of comparative data. A cross-national study at the global level, therefore, is encouraged in the future to investigate whether theoretical perspectives and findings transcend borders.

Methodological limitations are also noted here. This study designed two separate full models of fear of crime (see Table 10) to help avoid any bias generated from the district-level sample size (N=25). In hierarchically nested data, two sample sizes exist, one for group size and the other for number of groups. Scholars argue that a large number of groups is important as the estimation of the fixed parameters and their standard errors in the group level variance components are underestimated in small groups (Snijders & Bosker, 1994). Researchers suggested that, for the same total sample size of individuals, it is better to spread them across as many groups as possible to reduce the design effect due to clustering (Reise & Duan, 2003), as it is better to use larger cluster sizes to place as many individuals as possible in the same group. To perform a reliable multilevel analysis, some researchers recommend 10 cases within 10 aggregates (Mok & Flynn, 1998), while others were more strict by suggesting at least 10 observations for each predictor at the aggregate-level (Bryk & Raudenbush, 1992). Even though intraclass correlation and reliability in the one-way ANOVA model of this study encouraged multilevel analyses, the sample size at level-2 was a restrictive element in the

design for further study including more macro-level variables. Even though evidence indicated that the data structure of this study allowed up to three or four district-level predictors, it would be limited especially when the study is designed to include some more district-level predictors simultaneously.[8] Small group-level sample size in relation to a large number of variables included in the model is linked to insufficient power to detect significant effects due to the low between-group variation, which was not the case in current study but would possibly be when several more macro-level variables are included and modeled simultaneously.[9]

For future research, inclusion of more group-level sample size as well as citizen-level sample size is highly recommended. If a researcher still perceives a problem due to the sample size, the Bayesian approach is recommended. Raudenbush and Bryk (2002) present a Bayesian approach in the case when the number of units is too small to support a plausible asymptotic normal distributional assumption. The pioneers of multilevel methods suggest using a Bayesian formulation of such methods when a researcher starts to feel uncomfortable with the number of level-2 units in the dataset. This approach is persuasive since Bayesian methods estimate model parameters without relying on normal approximations.[10]

Finally, this study modeled a series of hierarchical linear models to assess the direct and indirect effect of conceptual predictors on fear, perceived risk, and behavioral adaptation measures. Even though the results revealed a substantial indirect effect of some conceptual predictors on fear via perceived risks, it could not gauge the actual magnitude of the effect. Although HLM covers many limitations of conventional regression analysis to accurately estimate multilevel models, like other conventional

techniques, it cannot measure indirect effects, it cannot incorporate latent variables into the representation of theoretical variables, and it cannot model the interrelationship among independent variables (Maier, 2001; Raudenbush & Sampson, 1999). Structural Equation Modeling (SEM) analysis, which is a path analysis with latent variables, overcomes such limitations, yet it is not designed for multilevel study. Statistical packages for structural equation modeling analyses such as LISREL and AMOS allow for the simultaneous testing of the effects of predictor (exogenous) variables and outcome (endogenous) variables in the specified structural equation model providing statistical indexes of the overall fit of the model to the data as well as informative results such as direct, indirect, and total effects. However, generally, the method is limited to a continuous outcome, does not allow for missing data, and cannot handle nested nature of data. Recognizing this limitation, Multilevel Covariance Analysis (MCA), using M-plus package, seeks to incorporate SEM's ability to capture the complexity of multivariate relationships with HLM's ability to capture the nested nature of those relationships and HLM's flexibility in allowing the data to be binary, ordinal, or multinomial (Farmer, 2000). One limitation of MCA is that it is a large sample technique and the group size should be from 50 to 100. MLwiN incorporated both HLM and SEM's advantages in the Bayesian approach in which the weakness of the small sample size is relatively overcome through computer simulation technique (Maier, 2001). Unlike the conventional frequentist method relying on large-sample approximations to produce estimates of model parameters by postulating that the true values of the parameters are fixed and the data are random, "empirical Bayesian methods make use of both paradigms where a subset of parameters is estimated and treated as fixed and known values in a subsequent

Bayesian data analysis technique to estimate the remaining unknown parameters" (Maier, 2001, p. 309). For a future study, multilevel path analysis based on Bayesian approach could support statistically robust results even with the limited sample size in district-level and could measure the magnitudes of both direct and indirect effects along with interrelationships among predictors.

ENDNOTES

1. South Korea, Hong Kong, Singapore, and Taiwan were often described as four dragon states to be acknowledged as Eastern Asian economic miracles, which was based on the idea that their rapid industrialization was similar to the image of an emerging dragon (see Li, 2002).
2. Buddhism was accepted in Korea when the peninsula was divided into three countries: Koguryo in A.D. 372, Paekche in A.D. 384, and Shilla in A.D. 572. It was the official religion in the united Koryo dynasty (918-1392) and Choson dynasty (A.D.1392—1910).
3. The task force is currently experimenting with the effectiveness of these tactics in three communities in Gyeonggi province for the past three years. Tactics included the arrangement of locations of windows and balconies, street lights, playgrounds, fences, CCTVs, entrance regulations using security code or guard, emergency alarms, etc. (Korea National Police Agency, 2005).
4. The reduction on the high status of investigation expertise due to emphasis on generalists resulted in resistance by detectives (Rosenbaum & Lurigio, 1994; Wasson, 1977). Moreover, its demise was largely at the hands of middle level managers within police organizations, who were interested in maintaining a more centralized form of command and control. The concept was well designed but the lack of planning and resistance by mid-level managers in special units made the success of this strategy difficult.
5. It was a general belief that the traditional focus on motorized patrol, rapid response to calls for service, and retrospective investigation would reduce crime,

which would eventually decrease levels of fear of crime (Moore & Trojanowicz, 1988).

6. "Adding a predictor that models a part of the within-group variability must decrease the estimate of σ^2; if this predictor does not model part of between-group variability then, because unexplained between-group variability remains the same, the decrease of σ^2 must be balanced by an increase of the estimate of τ_{00} (Snijders & Bosker, 1993, p. 347)," therefore resulting in the negative explained variance between groups.
7. Lee (1998) reported a very similar result among Korean Americans in the Chicago neighborhood, but the finding could not be generalized to the general public due to the situations of Korean Americans who tended to reside in selected communities.
8. As an example, in a doctoral dissertation on hierarchical analysis of race, class, and delinquency in Seattle schools using 634 students nested in 10 schools (Engen, 1996a), the researcher realized that including more than one variable in school level resulted in highly unstable parameter estimates, and so a series of final models were estimated including one aggregate level variable each time.
9. The sample size in higher level may limit the design of a model but it depends on data structure including intraclass correlation and group-level reliability to understand whether the model is applicable to the data (Maier, 2001). In addition to the sample size, therefore, intraclass correlation also affects the accuracy of the estimates (Willms, 1999). The method of parameter estimation in HLM (maximum likelihood estimation) provides more power than ordinary least

squares regression when there is substantial intraclass correlation in the data. The intraclass correlation coefficients in current study indicated a reasonably acceptable between group variance to estimate district-level models, considering other studies reported a large effect associated with differences between groups with small variance between macro-level units ranging from around 5 to 10 percent (Reisig & Parks, 2000; Sampson & Bartusch, 1998; Sampson et al., 1999). In addition, the magnitude of group-level reliability shows whether group-level differences can be modeled with a reliable degree of precision (Raudenbush & Bryk, 2002). The city-level high reliability (.57) in current study showed that city means vary substantially across cities, thus encouraging multilevel analyses.

10. The use of conventional estimation methods, including maximum likelihood, introduces constraints on the minimum allowable sample size or the degree to which the hierarchical structure can be sparsely populated since they depend on normal distribution theory (Maier, 2001; Seltzer, Wong, & Bryk, 1996), which results in biased parameter estimates in analyses with small sample size. Bayesian methods allow a solution strategy that produces unbiased estimates and eliminates the need for directly computing complex integrations without relying on normal approximations. Bayesian inference supplements the likelihood equation with prior beliefs the analysts may have about the distributions of the parameters, via prior distributions (Maier, 2001). This approach specifies a prior probability distribution for the variance components and then integrates over the variance components as well as other unknowns in the HLM to obtain a marginal posterior distribution of interest (Seltzer et al., 1996). Estimation and inference

via Bayesian simulation methods such as Markov Chain Monte Carlo (MCMC) are advantageous in various aspects (Jackman, 2000). Large number of simulated random draws from the joint posterior distribution of all the parameters can be made instead of finding simple point estimates for the parameters (Maier, 2001). These random draws can be used to form a summary of the underlying distribution to generate more reliable estimates. MLwiN statistical package was developed for this purpose (Maier, 2001).

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