ABSTRACT

Title: COLLECTIVE EFFICACY, THREAT, AND URBAN CHANGE: EXAMINING SOCIAL CONTROL FORCES IN AREAS OF GENTRIFICATION

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Since the term gentrification was first coined in the 1960s, scholars have had an interest in understanding how this process of change can impact neighborhoods. Empirical research focusing on the relationship between gentrification and crime has yielded varying results, with little examination of the *contextual mechanisms* which may influence the relationship. In addition, little empirical attention has been devoted to the possibility of the spatial displacement of crime due to gentrification. The purpose of this dissertation is to contribute to our understanding of how gentrification impacts levels of crime in three ways. First, using data from the U.S. Census, the Project on Human Development in Chicago Neighborhoods, and the Chicago Transit Authority, I examine whether gentrification is significantly associated with lower levels of crime. Second, I examine levels of crime in gentrifying and adjacent areas to assess the presence of spatial displacement. Third, I incorporate two contextual factors – collective efficacy and perceived neighborhood change – to examine whether or not they modify the relationship between gentrification and crime. Analyses utilize multilevel modeling techniques and difference-in-differences estimation. Results offer preliminary support for the

moderating roles of collective efficacy and perceived neighborhood change mechanisms on the relationship between gentrification and crime. While there is an overall negative association between gentrification and crime, this effect is strengthened with collective efficacy, but reversed with rising levels of perceived neighborhood change. Additionally, there is preliminary evidence that the spatial displacement of crime is not occurring as a result of gentrification. I conclude this dissertation with a discussion of the limitations, policy implications, and future directions for this area of research.

# COLLECTIVE EFFICACY, THREAT, AND URBAN CHANGE: EXAMINING SOCIAL CONTROL FORCES IN AREAS OF GENTRIFICATION

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2015

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# DEDICATION

For their unwavering support, encouragement, and unconditional love, I dedicate this dissertation to my parents, Michael and Pamela Noe. It took becoming a parent myself to fully understand and appreciate all that you have done for me, and to realize that however much I have thanked you throughout my life, it will never be enough.

# ACKNOWLEDEMENTS

To Chris: I need to thank you more than anyone else. You are my best friend, my back scratcher, and my support system. I would not have been able to complete this without you. Thank you so much for the encouragement and love you always give me.

To Jean McGloin: Throughout my graduate school career I have admired you as a colleague, mentor, and friend. Thank you for helping me through these past few years with advice, laughter, and X-Files marathons. From big decisions to small ones, you have always been there for me, and I am eternally grateful.

To Stephanie DiPietro: Thank you so much for helping me to understand and organize these data, and thank you for your advice as I worked through the analysis. Your guidance helped tremendously as I figured out how to craft this project into something manageable and realistic. You are the epitome of a collegial scholar and I only hope that I can help others as you have selflessly helped me.

To Ray: I have relied on your guidance about research projects for so many years now; from my master's thesis to this dissertation, you have helped me in more ways than I could possibly mention. Thank you for always keeping me focused and (generally) on schedule. You have taught me not only how to do research, but how to get it done, which is a distinction I did not know existed before this dissertation began. Thank you for many years of guidance and advice. Go Yankees!

To John Laub:  Thank you for all of your guidance and networking assistance.  I know that a large portion of this project would not have been possible without your making connections on my behalf, and I am grateful to have you as a mentor in my life.

To Rob Sampson: Thank you for giving me access to data that allowed me to pursue my research questions.  You took time out of your busy schedule to discuss and share these data with me, which greatly helped in my ability to use and understand them.  Thank you so much for giving me the opportunity to pursue this area of study.

To Dave Kirk:  You did not have to agree to participate in this dissertation project, but the fact that you did shows what dedication you have to graduate students you have impacted.  Thank you for putting up with my frequent emails, often with strange and confusing questions.

To Laura Dugan:  Thank you for listening whenever I have needed advice, and thank you for all of the training you have given me to equip me with the tools I will need as a researcher for many years to follow.  I still reference my notes from your statistics classes on a weekly basis, and probably will for most of my adult life.  Thank you for making this process fun.

To Ted:  My little munchkin, you are the reason I want to be a better person, and one of the main reasons I worked to make this project something I could be proud of.  I know you are a toddler, and may never read this, but you should know that you have changed my life in the most exhausting, messy, and wonderful ways possible.  I love you to the moon – and back.

And finally, to Michelangelo's of Towson:  Thank you for the delicious calzones which provided the sustenance needed to complete this project.

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# CHAPTER 1 INTRODUCTION

Gentrification is a process that has the potential to impact the appearance, population characteristics, commercial business, and culture of a neighborhood. It is a process that involves capital investment, local politics, and is often accompanied by citizens voicing both their support and protest of the changes. This dissertation aims to investigate whether gentrification processes are associated with levels of crime in neighborhoods. By examining this phenomenon through the lens of neighborhood social control and perceived neighborhood change, the current project attempts to give the study of gentrification and crime a firm foundation within criminological theory.

Concern over neighborhood conditions and their impact on crime is not a new phenomenon. Since the pioneering work of human ecologists at the University of Chicago (Park, 1936), and Shaw and McKay's (1942) explanation of stable levels of crime in areas with social disorganization, criminologists have demonstrated that neighborhoods unable to exercise social control often maintain the highest levels of crime (Sampson and Groves, 1989). However, critics of some of the earliest social disorganization research cited the theory's inability to pinpoint and measure the actual causal mechanisms of control within a community (Bursik, 1988; Kornhauser, 1978). Responding to these criticisms, systemic models of social control (Bursik and Grasmick, 1993; Sampson and Groves, 1989) have been developed, and Sampson and colleagues have explored the concept of neighborhood collective efficacy and its impact on crime (Morenoff, Sampson, and Raudenbush, 2001; Sampson, 2012; Sampson et al., 1997; Sampson and Raudenbush, 1999).

However, research on neighborhood-level explanations of crime typically operates under the assumption that neighborhoods with high crime do not see much change in their demographic or economic conditions over time. Indeed, many studies collect data on neighborhood-level conditions at the outset, and do not account for the possibility that these conditions might change over time (Sampson, 2012). The causal mechanisms in models of collective efficacy and neighborhood control are not the structural characteristics of neighborhoods, but all neighborhood-level models specify that it is impossible to separate mechanisms such as collective efficacy, private, parochial, or public social control from the neighborhood conditions that influence their development (Sampson, 2012). Therefore, while criminologists are developing a growing understanding of how mechanisms such as collective efficacy operate in historically disadvantaged, heterogeneous communities, it is unclear how these mechanisms will operate in such communities as they are undergoing change. Gentrification, a phenomenon that has impacted many impoverished urban areas in the past several decades, will be the specific type of neighborhood change examined in the current research project.

The process and effects of gentrification have received attention from urban planners, economists, and anthropologists, but have only recently begun receiving attention from the field of criminology. Perhaps this is because a clear operationalization of the term has yet to be agreed upon- the word itself is highly charged with sometimes positive or negative connotations. In the small body of criminological research examining this process, results are often mixed with respect to the effect of gentrification on neighborhood crime. Some scholars suggest that gentrification will lower crime in

the area undergoing change, with the potential for displacement effects to nearby areas (O'Sullivan, 2005; Papachristos et al., 2011). Others hypothesize that crime will increase and speculate that this may be because gentrification undermines neighborhood cohesion and disrupts informal social control (McDonald, 1986; Taylor and Covington, 1988). Finally, there are those who are not convinced that any relationship, if it exists, is linear or that it occurs in the same way for all residents and in all gentrifying areas (Kreager et al., 2011; Van Wilsem et al., 2006). This wide array of conflicting results suggests that there is still much work to be done to understand the causal processes at work; the current research project aims to investigate some of the possible mechanisms which may interact with the gentrification process to impact crime in neighborhoods.

Gentrification is at times an extremely controversial and polarizing topic, and as research evidence builds surrounding its impact on crime, the policy conclusions will become important elements for debate. It is not clear, for example, what one would *do* if it was proven that gentrification helps reduce crime- if gentrification is beneficial, but none of the long-term residents of a neighborhood are around to enjoy these benefits, can we conclude that the process is one to be valued and emulated? Conversely, if gentrification is associated with an increase in crime, are restrictions on these projects, often labeled "urban revitalizations," even practically possible? These questions are difficult, but before they can be addressed it is vital that criminological research examines the relationship between gentrification and crime so that we can make sense of conflicting findings from the past and establish a solid foundation upon which to continue examining this process in the future. The current project attempts to contribute to this body of research and move our understanding of gentrification and crime forward.

## Statement of the Problem

Despite the fact that there are several famous examples of gentrification causing dramatic and rapid change to previously disadvantaged urban communities (Freeman, 2006), there has been little research to discover what impact, if any, this process has had on crime. This is a problem because the process of gentrification has the potential to change and disrupt neighborhood-level forces which have long been cited in criminological research as having an impact on crime. Although a considerable body of research has been built examining neighborhood-level influences on crime, there are several important limitations of past research on gentrification. I review four significant limitations here including: (1) a lack of consistency in the operationalization and definition of the term gentrification, (2) the treatment of neighborhood-level structural characteristics as static attributes, not studying how their change might impact informal social control, (3) exclusively using official data to measure neighborhood change, without attempting to also collect accounts of the gentrification process from neighborhoods, and (4) the absence of a theoretical framework offering testable mechanisms which may interact with gentrification and crime.

### *Operationalization of the Term 'Gentrification'*

There has been a general lack of consistency in the operationalization and definition of the term 'gentrification' in criminological research. A term first introduced by sociologist Ruth Glass in the 1960s, gentrification takes its root from the English word 'gentry' which generally refers to the landed aristocracy (wealthy residents whose wealth is derived from large landholdings) (Coss, 2003). Initially, Glass used the term

gentrification to refer to a change she observed in London's East End, where middle-class families began purchasing working-class housing and changing it into more "elegant, expensive residences." (Glass, 1964: xviii). This theme, the transformation of working-class and abandoned housing into middle-class neighborhoods, has been a common feature of gentrification studies (Atkinson, 2000; Smith and Williams, 1986). Consequently, several examinations of the gentrification process have used indicators such as altered housing markets and demographic changes as key indicators that gentrification is taking place (Atkinson 2000, 2002; Pèrez, 2002; Schaffer and Smith, 1986). Others, however, focus on how gentrification impacts commerce in a community. Sometimes referred to as the "Starbucks effect," the expectation is that businesses catering to a working-class residency will be replaced by higher-end shops and cafés (Papachristos et al., 2011).

Therefore, there are two major areas that need to be addressed in this line of research. The first area entails generating an operationalization of gentrification that can be replicated and used in future research. As mentioned, at times this process is measured through commerce and business changes, and at other times it is measured by residential turnover and changes in housing markets. While changing commerce poses intriguing questions for future research, the current study will examine gentrification as it pertains to population and demographic change. This is consistent with Glass's original conceptualization, and allows the current study to build upon several prior studies that have examined gentrification in this manner. Prior research has generally studied gentrification's impact on crime by measuring structural and demographic indicators and then measuring crime, but this leaves important questions unanswered about the causal

mechanisms at work. Therefore, the second area which needs to be addressed is a consideration of *how* it is that this phenomenon causes crime changes, and importantly, whether or not crime should also be considered as an independent variable, itself influencing gentrification in the process.

*Neighborhood Characteristics as Static*

Interest in neighborhood characteristics and their relationship to crime has been a part of criminology since the work of 19th century moral statisticians such as Guerry (1833) and Quetelet (1831). These moral statisticians demonstrated that characteristics such as poverty, population mobility, and population heterogeneity were linked to a variety of social problems and shown to vary systematically with crime in shaded chloropleth maps. By identifying such regularities in crime and other social problems, scholars like Querry and Quetelet implied that environmental influences are critical in the explanation of social problems, thus paving the way for the sociological study of crime in the 20th century (Bierne, 1987).

In the early 20th century, sociologists such as Thomas and Znaniecki (1918) examined characteristics of Chicago neighborhoods and commented that the breakdown of immigrant peasant communities was leading to a variety of social problems. Thrasher's (1927) examination of gangs in Chicago was the first to use the term social disorganization to describe the inability of neighborhoods to realize common values or solve problems collectively. From there, scholars at the University of Chicago began working within a social disorganization framework; building off the human ecological models of urban development (Park, 1936; Park and Burgess, 1925; Zorbaugh, 1929),

they described neighborhoods in a state of disruption that had little cohesion and could not organize to solve their problems. This framework was based upon the idea that cities are only spatially pathological; there are some sections that seem to have stable high levels of crime regardless of who lives there. Because of this, researchers looked at delinquency *within* neighborhoods and attributed it to larger neighborhood-level control factors.

Much of the early work in social disorganization emphasized the stability of certain neighborhood qualities that kept them in a state of disarray. Economic problems, population mobility, and population heterogeneity were the primary conditions that research described as problematic (Shaw and McKay, 1942; Thrasher, 1927). However, critics of this framework have pointed out that these conditions within neighborhoods may not have the stability they once did in the early 20$^{th}$ century (Bursik, 1988). Even modern-era research in neighborhood-level control generally begins with structural-level characteristics considered to be fairly constant over time (Bursik and Grasmick, 1993; Lowenkamp et al., 2003; Sampson, 1988; Sampson and Groves, 1989). In doing this, the discipline has made enormous strides in unpacking the different dimensions of neighborhood control, and demonstrating the power of neighborhood context. However, what has been missing is a consideration of what happens to these neighborhood-level influences once the structural characteristics within the neighborhood significantly *change*. Gentrification often causes just such a significant change, and while neighborhood-level control theories provide a framework for examining this phenomenon, it has yet to be empirically examined in this way. In the current project,

one goal will be to approach the study of gentrification and crime from the perspective of neighborhood-level social control.

*Reliance on Official Data*

The research that has examined gentrification and crime has necessarily employed data taken from the decennial U.S. Census to examine long-term changes in the demographic profiles of urban areas. This is not surprising, as the Census offers a consistent, long-term collection of data relevant to a discussion about gentrification. Studies examining a connection between gentrification and crime have used Census data for individual cities (Covington and Taylor, 1989; Kreager, Lyons, and Hays, 2011; O'Sullivan, 2005; Taylor and Covington, 1988) and for research examining multiple urban areas over time (McDonald, 1986). Additionally, studies examining gentrification and crime have employed similar data to that collected in the Census in European cities such as London (Atkinson, 2000, 2002, 2004; Hamnett, 2003) and Bilbao (Vicario and Monje, 2003).

Only recently, however, have researchers begun to integrate alternative data into the study of gentrification and crime. This is a critical step in understanding what connections may exist between these processes. For example, in their examination of gentrification and crime in Chicago, Papachristos et al. (2011) combine Census data with information on the number of coffee shops in a neighborhood.

The current study utilizes Census data, but combines it with other data sources. By utilizing data obtained from the Chicago Transit Authority and the Project on Human Development in Chicago Neighborhoods (PHDCN) the current project incorporates city

data and information gathered from the residents themselves. In this way, this research hopes to not only examine the objective changes but also the subjective experience of residents in these areas.

*Dearth of Criminological Theory in Gentrification Research*

Finally, a limitation of prior research on the connection between gentrification and crime is the lack of a theoretical framework within which this interaction may be examined. This absence of a theoretical footing has resulted in several studies identifying patterns between gentrification and crime, but few scholars examining the causal mechanisms at work. In short, prior research has provided important clues as to how gentrification and crime may vary, but few have established a clear explanation as to why this is the case. The is understandable, however, when it is considered that only a few recent studies on gentrification and crime have been conducted and published within criminology and criminal justice-related journals (for example, Papachristos et al., 2011).

The current project proposes that the study of gentrification and crime fits well within the group threat and neighborhood-level social control framework.[1] The role of social networks, social capital, and collective efficacy in a neighborhood experiencing gentrification all have the potential to interact with this process and alter its effect on crime. After all, when a neighborhood experiences gentrification, it does not just happen around its residents, it also happens to *them*. Neighborhood-level control mechanisms

[1] I choose to refer to this body of research as 'neighborhood-level control theories' rather than the traditional term 'social disorganization' for a few reasons. It is a broader term encompassing more of the modern era of research in this area, and it reflects how this theoretical perspective has evolved over time since the pioneering work of Shaw and McKay (1942). It also shares foundational properties with social control theories at the individual-level (e.g. Hirschi's (1969) theory of social bonds), so referring to these theoretical areas with similar terms makes sense from an organizational perspective.

may help explain why gentrification is associated with changes in crime, and also why different neighborhoods may respond to the gentrification process in different ways. The role of group threat has also proven to play a powerful role in shaping people's perceptions, stereotypes, and behavior. It may be that in some gentrifying neighborhoods these changes are not well-received; therefore mounting tension and dissatisfaction with the gentrification process may have real and harmful consequences. These criminological theories offer a theoretical framework within which the relationship between gentrification and crime may be explored in the current study and in future research. This dissertation, therefore, represents an initial step in exploring gentrification and crime within the contexts of neighborhood-level social control and group threat.

*Current Research Agenda*

In a recent *Crime and Justice* article, David Kirk and John Laub (2010) discussed the small but growing research agenda to understand gentrification's role in crime within communities. They discussed several puzzles still left unanswered by research through the early 21st century. First, they highlighted the fact that while several studies have attempted to draw inferences about a causal relationship between gentrifying neighborhoods and changing crime rates, there have only been suggestions of potential mechanisms at work and little effort to actually measure and identify these factors (Kirk and Laub, 2010). A few studies have discussed social control mechanisms that *may* be at work in destabilizing neighborhoods undergoing gentrification, but these are inferences that have yet to be empirically evaluated (Covington and Taylor, 1989; Van Wilsem et al., 2006). Second, they note the dearth of empirical research on displacement, a key element to the definition of gentrification. Few scholars have attempted to examine the

impact of displacement of crime due to gentrification, although a few informative case studies suggest that this may occur (Curtis, 1998; 2003). Finally, in their discussion of future research directions, Kirk and Laub (2010: 487) suggest that causal mechanisms and the "velocity of change" are critical unanswered questions in the neighborhood change and gentrification literature. Correlations between neighborhood-level indicators of gentrification and crime have long been observed, but we still have little understanding as to how these relationships come about. In empirical studies of gentrification a key element seems to be the speed at which changes occur (Covington and Taylor, 1989; Schuerman and Kobrin, 1986), but attempts to measure the pace of changes has not been attempted.

The aim of the current research project is to address some of these puzzles. As it stands today, researchers have only begun to understand the complex ways in which gentrification can cause changes in crime at the neighborhood level. A primary goal of the current project is to contribute to the growing body of research on gentrification and crime and to do so in a way that sheds light on the social control and perceived neighborhood change mechanisms that may be at work. A key component of this project will be a review of the operationalization of the process of gentrification. While no measure will ever be perfect, it is my hope that this dissertation will provide a working measurement tool to examine the gentrification process which can be replicated and used in future research. I begin this research study without making any immediate assumption as to the direction of the effect between gentrification and crime, but instead hope to offer a clear operationalization of the term so that an association can be identified. Therefore, the first question which shall be explored in this dissertation is:

RQ1: What is gentrification's impact on crime?

Given the conflicting results from the small number of early studies on gentrification and crime, it is important to first examine how crime patterns look in neighborhoods experiencing this form of neighborhood change. It is also the intention of this research to examine the potential for crime displacement; as Kirk and Laub (2010) indicate, this is an area missing from prior research on gentrification and crime and one which has both theoretical and practical policy implications. This introduces the second research question in this dissertation:

> RQ2: Is there evidence for crime displacement from gentrifying neighborhoods to nearby areas?

This research questions addresses a concern that some have discussed as a potential consequence of gentrification. While several scholars have offered analyses of residential displacement as a result of gentrification, to date an empirical assessment of whether or not there is a spatial displacement of crime has not been conducted. The current research will attempt to fill this hole in the gentrification and crime literature.

To address the possibility that the effect of gentrification on crime may vary by neighborhood context, the following questions will be explored:

> RQ 3: How do informal social control and perceived neighborhood change mechanisms interact with the process of gentrification?
>
> > 3a: Is the relationship between gentrification and crime moderated by social control mechanisms such as collective efficacy?
> >
> > 3b: Does the relationship between gentrification and crime vary by the degree to which the changes are perceived as threatening?

The link between the control perspective and gentrification has been discussed, but never empirically examined. In general, most empirical research on gentrification and crime has come from outside the discipline of criminology. Understandably, this has meant an absence of criminological theory in gentrification and crime research to date. By placing this research within the context of collective efficacy and group threat, I hope to shed light onto the underlying mechanisms which may moderate the relationship between gentrification and crime.

I believe that thinking of collective efficacy and perceived neighborhood change mechanisms as potential moderators is appropriate for a few reasons. In general, moderator variables have the potential to impact both the strength and the direction of relationships between predictor and dependent variables (Baron and Kenny, 1986). In the current study, I suggest that the relationship between gentrification and crime is highly dependent upon the contextual factors of collective efficacy and perceived neighborhood change. Specific hypotheses will be discussed in Chapter 6 of this project, but in a similar manner to prior research which has demonstrated the benefits of collective efficacy in neighborhoods (Sampson et al., 1997), I hypothesize that collective efficacy will be a significant benefit in neighborhoods experiencing gentrification.

Drawing from research on group and minority threat, this research also investigates whether the perception of the changes caused by gentrification matters. Most prior research examines all gentrifying neighborhoods together, assuming a fairly similar reception and experience in each. However, group threat literature has shown that changes to the population of an area are sometimes accompanied by perceptions of threat, anger, and resentment which ultimately cause disruption and crime (Blalock, 1967; Bobo,

1988). Through this research, I will examine whether or not perceived neighborhood change processes play a role in moderating the relationship between gentrification and crime. In this way, it will be possible to examine whether perceived neighborhood change makes problems such as crime worse in a gentrifying neighborhood.

*Outline of the Dissertation*

Discussion of gentrification and crime necessarily must include a thorough review of the emergence of gentrification as a phenomenon and research topic. In Chapter 2, I summarize the body of knowledge about gentrification over the past several decades, beginning with its introduction in social science in the 1960s and including the body of research that has examined the link between gentrification and crime. In Chapter 3, I summarize the research involved in the conceptualization and measurement of neighborhoods and neighborhood-level effects. Chapter 4 reviews the research on neighborhood-level social control and the research on group and minority threat dynamics. Chapter 5 presents a theoretical framework which combines these areas into one cohesive interpretation of how these processes come together and interact.

Chapter 6 will introduce details pertaining to the current study's hypotheses, data, measures, and analytic strategies. Chapter 7 will present the results of the analyses examining both the effect of the contextual factors and the results of the displacement analyses. The dissertation will conclude with Chapter 8, which will be a summary of the research findings, including a discussion of the policy implications, the limitations, and the suggestions for future research.

# CHAPTER 2 GENTRIFICATION – HISTORICAL OVERVIEW, MEASUREMENT, AND ITS IMPACT ON CRIME

## *Introduction*

The purpose of this dissertation is to investigate the interaction of gentrification, social control, and perceived neighborhood change forces on crime over time. In this chapter, I begin by summarizing the extant literature on gentrification, beginning with a discussion of the concept itself and how it has been understood, operationally defined, and discussed in previous research. I will then review the literature to date on gentrification's impact on crime, and discuss the issue of crime displacement. In the next chapter, I review the findings from contemporary research on neighborhood change and crime. Finally, as I suspect that the impact of gentrification is not homogenous but is affected by both social control and group threat dynamics, I move in the following chapter to a review of modern research on neighborhood-level social control, with particular attention paid to collective efficacy, and on the relevant research in racial and ethnic threat.

## *Defining Gentrification*

The genesis of the term 'gentrification' is generally acknowledged to come from urban geographer Ruth Glass in her 1964 book *London: Aspects of Change*. Glass used the term gentrification to refer to young, mostly single middle- and upper-class residents purchasing property in the historically impoverished area of London's East End (Glass, 1964).

> *One by one, many of the working-class quarters of London have been invaded by the middle classes – upper and lower. Shabby, modest mews*

> *and cottages… have been taken over when their leases expired and have become elegant expensive residences. Larger Victorian houses, downgraded in an earlier or recent period – which were used as lodging houses or were otherwise multiple occupation – have been upgraded again. Once this process of 'gentrification' starts in a district it goes on rapidly until all or most of the original working-class occupiers are displaced and the whole social character of the districts is changed." (Glass, 1963: xviii).*

Interestingly, from its beginning the term had both socially and politically charged connotations; Glass described gentrification as a dangerous process because it was eliminating housing and driving poor residents out of their neighborhoods. By the 1970s, Glass's tone describing the phenomenon grew more somber, describing the changes in London neighborhoods such as Hampstead and Chelsea as tragedies. While many scholars had taken to interpreting the phenomenon as a benign, even positive process of neighborhood revitalization, Glass described the process as more of an upper-middle-class invasion and succession (Glass, 1973). It is important to be aware of the charged nature in which this phenomenon entered into academic discussion; from its beginning, gentrification has been a process which many write about with a very specific ideological or political bias.

While Glass was the first author to use the phrase gentrification, this particular phenomenon of neighborhood change has been discussed elsewhere in urban development. Hoover and Vernon's (1959) examination of the New York City metropolitan area revealed that cities have a 'life cycle' which can be broken into five stages: development, transition, downgrading, thinning out, and renewal. In their model, gentrification can be placed in the renewal stage because middle- and upper-class residents will jump on the opportunity to purchase and renovate large dwellings for a relatively inexpensive cost (Hoover and Vernon, 1959; Kirk and Laub, 2010). Smith and

LeFaivre (1984: 44) emphasize that gentrification should not just be described as a physical process, but a social one as well, and stress that the changes a community experiences as a result of gentrification often involve clashes as a result of "fundamentally opposed class interests."

Modern interpretations of the term focus on the changes in social demographics and social class experienced in a gentrifying neighborhood. For example, Smith and Williams (1986:1) describe gentrification as the "rehabilitation of working-class and derelict housing and the consequent transformation of an area into a middle-class neighborhood." Most interpret the process as one involving young singles or young couples, and importantly, as one involving the migration of people within the city, and not moving into the city from suburban or rural areas (Butler, 1997; Hamnett, 1984; Smith and Williams, 1986). Kennedy and Leonard (2001: 1) define gentrification as "the process of neighborhood change that results in the replacement of lower income residents with higher income ones." However, there is no consensus as to precisely how transferable the concept of gentrification is over time and across social contexts (Smith, 1996). For example, the emphasis in most definitions is on a change in the social class of neighborhoods experiencing gentrification. We know that in many cases this also means changes in the racial composition of the neighborhood (e.g. Smith, 1996) but this is not always the case; research has also examined gentrification in places such as Harlem in New York and Bronzeville in Chicago where gentrification occurred in historically black neighborhoods and the population moving in was predominantly black middle-class residents (Freeman, 2005; Hyra, 2008). The majority of examinations of gentrification can be found in the urban planning literature, and within this research scholars have

argued that gentrification is often a hectic, scattered process which is better understood as many different processes interacting over time within neighborhoods (Beauregard, 1986). In addition, urban planning research suggests that gentrification may take many shapes, and depending on local context we should expect to see many types of gentrification (Lees, 2000).

In other treatments, gentrification has been defined as a "churning" process which results in changes not only to residents but to commercial establishments around them. Papachristos and colleagues (2011) recently measured gentrification to include changes to businesses and amenities within neighborhoods as signs of gentrification (Papachristos et al., 2011).

In summary, gentrification as a phenomenon can take many forms, but class invasion and population succession characterize almost all prior treatments of the concept. It rarely happens uniformly across a neighborhood, and the literature still cannot agree as to what elements must be in place to define a neighborhood as 'gentrifying.' The process has historically been examined looking only at changes to the population, but modern research includes elements of revitalization to commercial properties as well. An important step to take in our understanding of this process must be to determine a way to operationalize gentrification so that it will be replicated and tested across multiple social contexts. While it would be impossible for any one study to produce the perfect operationalization of such a nuanced term, the current study aims to operationalize gentrification in a way that can inform future research in criminology.

*Gentrification: A Loaded Term*

It is important to note that many scholars who have written about the process approach the phenomenon of gentrification by highlighting either its benefits or its harms. Housing policy research often contends that gentrification is a dangerous process because of its uneven application within neighborhoods; this can at times result in small pockets of a neighborhood getting refurbished, amidst others that are boarded up and abandoned. Depictions in recent work describe it as a process that leaves "islands of decay in seas of renewal." (Wyley and Hammel, 1999: 711). Some take issue with the concept itself, arguing that the word gentrification is a glossy, euphemistic phrase masking the actual process, deconcentrating poverty to make way for capital investment (Crump, 2002; Smith, 2002). Along this line, critics often highlight the racial tensions built into gentrification, where the "white middle- and upper-classes retake control of the political and cultural economics as well as the geography of the largest cities." (Smith, 2002).

*Gentrification and Population Relocation – Early Research*

Interest in gentrification sparked researchers in the 1970s to examine its impact in European and American cities. Most of this initial research examined the extent to which gentrification resulted in rises in the cost of living which forced long-time residents to relocate. The image in this research is of long-time residents who are either unhappy with the ways in which their neighborhood has changed, or unable to afford the changes to basic costs of living. From property taxes, to the costs of basic amenities such as groceries, the suggestion is that longtime residents get 'priced out.' Research has pointed

to several ways for population relocation to occur; the most commonly noted are population losses and changes in demographic indicators of social class. In many areas undergoing gentrification, a population loss has been observed due to more affluent families purchasing multi-unit homes and converting them back into large, single-family dwellings (Atkinson, 2000; Wagner, 1995). In this way, gentrification is thought to lead to gentrifiers under-occupying their neighborhood, because one family lives in a home that several families used to share (Bailey and Robertson, 1997). A large study of New York City neighborhoods in the 1980s concluded that anywhere from 10,000 – 40,000 households were displaced in a given year (Marcuse, 1986). In a study examining London neighborhoods undergoing gentrification from 1981 – 1991, results showed that the declines in the population were specifically due to inactive residents, elderly, and working class residents moving away (Atkinson, 2000).

Unfortunately, a review of the early research on gentrification leaves no definitive answer as to the extent and nature of gentrification and population relocation; early efforts often came to contradictory conclusions, some suggesting that a high degree of population relocation occurs and others suggesting that it is negligible (Auger, 1979; Freeman, 2005; Hoover and Vernon, 1959; Sumka 1979). In an early examination of gentrification and population relocation in five U.S. cities, Schill and Nathan (1983) conducted a survey asking renters why they were choosing to leave a neighborhood. Although there was wide variation across the cities as to the amount of population relocation, their results showed that on average about 23 percent of those moving out of an area were forced to relocate; they cited rising costs of living and indicated that they had to move though they did not want to.

A common methodology utilized in population relocation research is post-move surveys. Such research has been conducted in London (Atkinson, 2000) and New York City (Newman and Wyly, 2006), asking survey respondents who are new to an area to give reasons for their recent move. In several of these initial attempts to assess population relocation, research hinted that population relocation due to gentrification may be negligible (Grier and Grier, 1978; Lee and Hodge, 1984; Newman and Owen, 1982). However, in many of these early surveys the former residence of the respondents were unable to be identified; therefore, it is impossible to determine how much population relocation is actually due to gentrification and how much is due to more natural succession patterns (Freeman and Braconi, 2004). For example, it could be that the survey respondents made a lateral move – their new neighborhood looks very much like their old one. High turnover from a neighborhood might also happen due to factors other than gentrification, such as a sudden rise in unemployment. By measuring people in their new neighborhood, this research was unable to provide a detailed examination of the community from which they were displaced.

Succession methodology has also been utilized to assess population relocation due to gentrification. In this research, the characteristics of residents who are new to an area are compared to the characteristics of those who have moved out. Again, early studies using this technique concluded that population relocation due to gentrification was minimal (Henig 1980; Spain, Reid and Long, 1980). This technique, however, has its own measurement problems. While it is possible to conclude that population changes have taken place, succession methodology makes it impossible to determine the reasons for this change. The assumption made in this early research using succession

methodology was that gentrification explains the turnover. However, it is impossible to tell what reasons former residents had for moving out; it could have been due to gentrification, but there are also many unobserved explanations which could play a role in residential turnover (Freeman and Braconi, 2004).

This preliminary research examining gentrification and population relocation leaves many questions unanswered. Most important to the current study, however, is the still unanswered question as to whether or not crime appears to be displaced when a neighborhood experiences gentrification. This will be a central focus of the current research.

*Gentrification in Harlem*

Several neighborhoods in New York City experienced gentrification during the 1990s, and an area that has garnered the most media attention and subsequent research is Harlem. Located at the top of Manhattan Island, Harlem's boundaries stretch across the top of the island, with the East River and Hudson River along its sides, 155$^{th}$ street to the north, and Central Park and 96$^{th}$ street to the south.[2] In 1986, Schafer and Smith wrote an article called, "The Gentrification of Harlem?" the title itself suggesting that the researchers were questioning whether or not this traditionally lower- and working-class African American area of the city was susceptible to gentrification in the future.[3] Several factors hinted that this may be the case. Harlem had been experiencing a decline in population during the 1970s (Stegman, 1982), its location just north of Central Park offered promise for developers, and although there were many vacancies, its residential

[2] Retrieved from http://www.NYC.gov on May 15, 2013.
[3] U.S. Census Bureau data show that in 1980, Central Harlem was 96.1% black, had 65.5% of households in the low-income bracket, and 5.2% of adults were college graduates (U.S. Bureau of the Census, 1983).

areas were filled with late 19th century brownstones which were being used as multi-unit dwellings and could be renovated and converted into single-family homes (Shafer and Smith, 1986). The article concludes by suggesting that although gentrification has not happened yet, Harlem could be ripe for the process in the near future.

In subsequent years, researchers and media reports demonstrated that Harlem did indeed experience gentrification. Housing prices surged, private developers came in and planned luxury condominiums and retail spaces, and a new wave of middle-class African American residents came from other areas of the city (Wyly and Hammel, 1999). An article in *The New York Times* discussed the strong pull of Harlem for affluent blacks:

> *Black professionals are snatching up 5,000-square-foot brownstones off avenues named for black leaders… they are also looking to bring the amenities they had found in SoHo and the Upper West Side to neighborhoods that, while on the upswing, are still marked by abandonment and a dearth of shops and restaurants.* (Foderaro, 1998: B5)

In 2006, Dr. Lance Freeman published *There Goes the 'Hood,* a book describing the gentrification process experienced by several New York City neighborhoods in the 1990s, and offered a detailed explanation for why this area seems to have experienced such dramatic improvements in both crime and citizen satisfaction. According to his research, a high amount of displacement had not taken place. Challenging the notion that there is always a high amount of displacement in gentrifying neighborhoods, Freeman found that poor families living in gentrifying neighborhoods in Harlem were actually 24% less likely to relocate than families in non-gentrifying areas (Freeman, 2006).

What Freeman (2006) and several other commentators also observed in Harlem, is that the in-movers were often African American, much like the long-time residents who

remained. They tended to be younger, working professionals, but their entrance into the neighborhoods did not significantly alter the racial profile of the area. In several news reports, it was described as the 'New Harlem Renaissance' because those moving in embraced the long-standing culture and mystique of this area (Williams, 2008). One such article quotes an interview with an African American man who had recently moved into the area:

> *I have always had a fascination with the Harlem of legend and folklore… Reading the writers of the Harlem Renaissance created a lot of mythologies in our heads. I just felt this visceral kind of connection that I don't know how to describe.* (Foderaro, 1998: B5).

What lessons can we take from the gentrification of Harlem that can be applied to the current research project? It appears that gentrification as a process cannot be assumed to have a uniform effect (either negative or positive) on the various neighborhoods experiencing it. When the gentrification process threatens and disrupts the long-standing group dynamics and racial profile of a neighborhood, and when a neighborhood does not have the cohesion and efficacy to act in response to problems, crime may increase during these rapid periods of change and renewal. However, as is the case in 1990s Harlem, when gentrification happens but the longstanding group dynamics are not threatened, and when the neighborhood has a high level of cohesion and efficacy, crime may decrease as a result. A close examination of this process has not been attempted in Harlem, because the only data taken during that era were data charting the demographic changes. However, the data gathered at the community level in Chicago in the 1990s may shed light on the suggested mechanisms behind the relationship between gentrification and crime.

In this disruption of group dynamics, it is suggested that gentrification may work to threaten the prevailing neighborhood culture of an area. The presence of neighborhood culture was introduced in the early work on social disorganization in criminological theory. Thomas and Znaniecki (1918) described the loss of cultural identity in the younger generations of Polish immigrants in early 20th century Chicago, and Shaw and McKay (1942) suggest that neighborhood culture may work to transmit attitudes favorable to deviance amongst youth gangs. In his ethnographic work in Philadelphia, Eli Anderson (1999) also demonstrated that in many disadvantaged areas there is a prevailing 'code of the street' which residents either embrace or learn how to maneuver. The idea that the weakening of neighborhood culture may be associated with various forms of crime has also been examined; Barbara Warner (2003), for example, refers to this weakening as 'cultural attenuation. In neighborhoods experiencing gentrification, one potential problem with this process could be the loss of a neighborhood's cultural identity. Conversely, gentrification efforts that attempt to preserve an area's cultural identity may experience better outcomes than those whose long-time residents feel as if their neighborhood's character and identity has been sanitized and taken away.

*Gentrification's Impact on Crime*

Interest in gentrification's specific impact on crime can be traced to the 1980s when Scott McDonald (1986) wrote one of the first papers addressing the relationship between gentrification and crime rates. His paper examined fourteen neighborhoods from five major U.S. cities (Boston, New York, San Francisco, Seattle, and Washington

DC) and examined tabular crime data from 1970, 1975, 1980 and 1984. McDonald examined changes over this time span and determined that a negative association existed between gentrification and violent crime. While he did not find that property crime is reduced in gentrifying areas, he did suggest that it may be difficult for neighborhoods undergoing gentrification to improve because crime may act as a "feedback loop" and prevent them from becoming more stable (McDonald, 1986). This initial examination of gentrification and crime was not without its limitations, most notably the method used to determine which neighborhoods were gentrifying. Neighborhoods were considered to be gentrifying based on the author's familiarity with the areas, and while some neighborhoods were included due to changes in the residential population, others were included for undergoing commercial changes (McDonald, 1986). Aside from this initial study, there have only been a few attempts to examine gentrification's impact on crime with their results yielding contradictory and often complex relationships.

Taylor and Covington (1988) examined crime in improving Baltimore neighborhoods during the 1970s. By examining census data in 1970 and 1980, and UCR Part I crime data for each year, they determined that gentrification's impact varies by crime type. In gentrifying areas, for example, violent crimes (murder and assault) rose, but property crimes declined. The authors compared two processes, social disorganization and relative deprivation. Relative deprivation refers to one's perceived sense of being worse-off than others. While objective qualities of poverty have long been used to explain crime, the authors suggest that the effects of relative deprivation may increase violence due to an increasing sense of injustice (Taylor and Covington, 1988). The authors determined that in gentrifying neighborhoods social disorganization explains

more of the variation in violence. They assert that being in a state of change can be detrimental to the neighborhood's standards and norms (Taylor and Covington, 1988). These authors followed up this study with another examination of gentrification in Baltimore during the 1970s, this time examining robbery and larceny (Covington and Taylor, 1989). In this study, they again found that gentrifying areas experienced rises in crime, but only in robbery; larceny rates did not change in areas undergoing gentrification. They suggest that neighborhood change that occurs rapidly may act to destabilize neighborhoods, and weaken informal social control.

A positive relationship has also been observed utilizing victimization data. In a recent study in the Netherlands, similar results were found looking at residents' risk of victimization for theft, violence, and vandalism. Utilizing survey data from all 25 Dutch police regions in 1999, the authors constructed a socioeconomic disadvantage index, and observed a positive relationship between rapid positive change in this index and crime victimization (Van Wilsem et al., 2006). Presenting the phenomenon from a rational choice and opportunity perspective, Lee (2010) used data from Los Angeles in the early 1990s and observed a positive relationship between gentrification and property crime, which he attributed to the fact that incoming more affluent residents provide "greater payoffs and new opportunities for criminal behavior" (Lee, 2010: 572).

Not all studies have suggested that gentrification leads to an increase in crime, in fact some researchers have instead suggested that it is declining crime rates which spark gentrification. A recent study in Portland, Oregon during the 1990s suggests that drops in crime led to neighborhoods being revitalized, and the displacement of lower income residents further lowers the crime rate (O'Sullivan, 2005). Papachristos and colleagues

(2011) recently conducted a study in Chicago examining gentrification in primarily White, Black, and Latino neighborhoods and concluded that the process is experienced differently across social contexts. While homicide rates declined in all three types of gentrifying neighborhoods, there was an increase in street robberies in the predominantly Black areas (Papachristos et al., 2011).[4]

Thus far, the research discussed has suggested either a positive or a negative relationship between gentrification and crime in a neighborhood. The research suggesting a positive relationship (Covington and Taylor, 1989; Lee, 2010; Taylor and Covington, 1988; Van Wilsem et al., 2006) tends to suggest that gentrification is a destabilizing influence.

Variables related to social disorganization are discussed as possibly being able to explain the relationship, although these are rarely tested directly (McDonald, 1986). The research suggesting that a negative relationship exists between gentrification and crime vary in both their definition of gentrification, and in the extent to which crime declines as a result of it (O'Sullivan, 2005; Papachristos et al., 2011). They also disagree on the causal agent – some argue that dropping crime *causes* gentrification, while others suggest that it is this reinvestment that sparks the changes in crime.

Another possible relationship that has been explored is that the relationship between gentrification and crime is nonlinear. It may be the case that gentrification results in rises in crime initially, but this effect becomes less significant as time passes. A recent study in Seattle used tract-level census data from the 1990s and their results

[4] Papachristos et al. (2011) provide a possible explanation as to why there were racial differences in the impact of gentrification.

support a ‘curvilinear’ relationship; areas that saw renewal and revitalization efforts experienced small increases in crime initially, but over the entire decade these tracts saw reductions in crime (Kreager et al., 2011).

Others have suggested a nonlinear relationship, where gentrification results in an increase in crime initially but after a certain point its effect weakens. In other words, a relationship that has been suggested but never empirically proven is that gentrification’s impact on crime may be strong initially but once crime increases to a certain point a variety of outside factors may cause it to continue at its heightened level (Van Wilsem et al., 2006).

*New Contributions to Research on Gentrification and Crime*

While prior research has laid the foundation upon which gentrification and crime can be examined, the current study hopes to build off this prior research and extend it by addressing some problems and unexamined areas. First, there is a lack of agreement in the field as to how gentrification should be measured. One challenge in this field has been the ability to systematically identify areas that are in fact experiencing gentrification. For example, in Covington and Taylor’s (1989) gentrification study in Baltimore, they used a single measure of gentrification, changes in house-value percentile scores as reported by owner-occupied housing in each Baltimore neighborhood. By regressing percentile scores in 1980 on their 1970 scores, they were able to capture residuals which they surmised could be used as evidence of gentrification; large positive residuals indicating a large increase in the housing value over the decade (Covington and Taylor, 1989). While housing value has long been noted as a valuable indicator of

neighborhood change (DeGiovanni and Paulson, 1984; Lee and Mergenhagen, 1984) Covington and Taylor's (1989) measure of residual change does not account for the prior state of housing values in the neighborhood. A neighborhood that had initially high housing values and experienced a large increase could be misinterpreted as a 'gentrifying' neighborhood in this study, because degree of change was the only element examined. A few early studies also focused primarily on changes in homeownership, when gentrification may also occur by middle- and upper-class renters moving into an area (Lee, 2010). This is problematic because homeownership rates may remain stable, but the social class and demographic profile of the residents may in fact change. While the measure of gentrification used in the current study will have its own limitations, multiple items will be examined to determine the extent of gentrification, combining data from both the Census and the Chicago Transit Authority. One goal of such a method of operationalization is that this measurement of gentrification can be used in future research to examine gentrification in other urban areas.

Second, in a few of the initial studies the neighborhoods were identified mainly based on the authors' personal knowledge, and no criteria were given justifying their selection as neighborhoods undergoing gentrification. For example, in McDonald's (1986) study, he selected fourteen neighborhoods from five U.S. cities, and demonstrated through various characteristics that gentrification had occurred. However, he did not justify what made these neighborhoods distinct from others in their respective cities, leaving the reader to assume that these were the only neighborhoods that experienced gentrification during the time period. It may in fact be the case that these were the only

neighborhoods that experienced gentrification, but without clear selection criterion it leaves the question open for debate.

There will be limitations to any measurement tool attempting to capture gentrification, including the one used in this dissertation. In the current research, the measure of gentrification will attempt to be more inclusive, factoring multiple characteristics into the operationalization of the process. It is my hope that this method of measuring gentrification will complement prior work and serve as a useful measurement for future research.

*Gentrification and Displacement*

Since the concept was introduced by Glass in the 1960s, a common concern with gentrification is the issue of displacement. There are two contexts within which the issue of displacement may be relevant – the displacement of individuals and the displacement of crime. Several studies have examined the potential for gentrification-induced displacement of individuals. This can occur when appreciation in the housing market causes sharp rises in rents, forcing lower-income residents in a neighborhood to move elsewhere for a lower cost of living (Atkinson, 2000). It can also occur when in-movers to an area disrupt the social networks and characteristics of a neighborhood, prompting long-time residents to relocate out of dissatisfaction with the community. Freeman and Braconi (2004) distinguish between direct and secondary displacement, the former being the succession of one demographic or ethnic group by another due to a specific program, the latter referring to low-income residents moving due to appreciation of rent and taxes, neighborhood harassment, or removal of services. Secondary displacement (also referred

to as 'involuntary displacement') is the version which has generated the most concern and research (Kennedy and Leonard, 2001; Levy, Comey, and Padilla, 2006; Marcuse, 1986).

As a process, measuring the displacement of residents due to gentrification poses many methodological challenges, which may explain why research examining this issue is rarely done. First, a study must track residents who relocate during a period of gentrification; their former and current addresses must be obtained. The complexity and challenges with completing a study tracking such residents has been discussed frequently in the gentrification literature as a limiting factor in the progression of this research (Hamnett and Williams, 1980; LeGates and Hartman, 1986). Second, researchers must ascertain the reasons for the move; the term 'displacement' implies that residents were coerced or forced to relocate. Individuals and families may relocate during a period of gentrification for a variety of reasons; this makes it difficult to prove that it was gentrification itself that forced the relocation to take place (Badcock and Cloher, 1980).

In a recent attempt to measure residential displacement following gentrification in central London, Atkinson (2000) measured displacement in three neighborhoods from 1981 - 1991. He concluded that displacement tends to impact renters who are single, elderly, or low-income families who are offered incentives to relocate (78% of those who were displaced were in unskilled occupations). The Urban Institute examined neighborhoods in six major urban areas in the United States[5] and examined displacement by conducting telephone interviews with residents to record displacement-mitigation

[5] Cities examined: Atlanta, GA; Chicago, IL; Los Angeles, CA; Sacramento, CA; Seattle, WA; St. Petersburg, FL (Levy et al. 2006).

initiatives and their success. They found that addressing the affordable housing needs of low-income residents through targeted programming makes retention possible, but turnover continues to rapidly take place (Levy et al., 2006). In New York City, Newman and Wyly (2006) examined housing and vacancy survey data collected every three years from 1991 – 2002. They determined that for those moving within the city, displacement fluctuated between 6.2 – 9.9%, and concluded that "the vast majority of these households were forced to move by cost considerations." (Newman and Wyly, 2006: 29).

Not all research has demonstrated a displacement effect. Several studies assert that prior research on displacement suffers from a failure to properly quantify the problems associated with gentrification, assuming and giving the impression that displacement is a significant issue without the evidence (Freeman and Braconi, 2004). Freeman (2005) examined residential mobility and displacement using data from the Panel Study of Income Dynamics (PSID), a national study of urban households from 1986 – 1996, and came to the conclusion that displacement-induced effects are modest; mobility was not found to be significantly greater in gentrifying areas than elsewhere. In subsequent work, Freeman (2006) has postulated that long-time residents may enjoy the improvements made to public space and resources in the area, and fight to remain. Housing initiatives such as rent control and asset-building strategies may encourage this (Levy et al., 2006).

While the extent to which gentrification causes residential displacement has been examined repeatedly, less attention has been given to the extent to which crime may be displaced due to gentrification. However, there are theoretical arguments for why the spatial displacement of crime due to gentrification may occur. In her seminal text *The*

*Death and Life of Great American Cities*, Jane Jacobs (1961: 35) discusses the importance of there being "eyes upon the street" to ensure safety. She states that a city street with public spaces, shops, and restaurants sprinkled throughout will encourage a sort of involuntary policing by residents who are occupying the area. Therefore, it could be suggested that when gentrification happens, this results in more vigilance to a neighborhood, which may encourage offenders to pursue crimes where there are not quite so many watchful eyes. In the words of Jacobs (1961:34), "a well-used city street is apt to be a safe street." Therefore, if spatial displacement were to occur as a result of gentrification, it is logical to hypothesize that crime would be displaced to a nearby area where these changes and developments have not yet taken place. Jacobs is by no means an advocate for gentrification; in the first sentence of her book she states that the book is intended as an "attack on current city planning and rebuilding" (Jacobs, 1961: 3). However, her insights into the mechanisms by which city streets may enhance safety provide a theoretical rationale for why crime may be spatially displaced when gentrification causes more activity and use of neighborhood space.

In his examination of gentrifying neighborhoods in Boston, New York, San Francisco, Seattle, and Washington, DC, McDonald (1986: 163) begins his paper with the hypothesis that the "displacement of low-income residents by newcomers should reduce crime." Although his study demonstrates that crime is reduced in the primary areas, it does not address whether or not the crime has been displaced along with the former residents. Such research provides the current study with the motivation to explore the possibility of the spatial displacement of crime due to gentrification. To date no study has offered an empirical examination of this process. This may not be surprising,

however, given the challenges in measuring such a phenomenon. It is difficult to prove that an increase in the crime rate in one neighborhood is directly caused by a decline in offending in a neighboring area. Theoretically, it has been suggested that the low-income residents who are forced to relocate include many of the persons who would have been contributing to the local crime rate (Baldwin and Bottoms, 1976; Covington and Taylor, 1989) but empirically this is difficult to prove. Parallels can be drawn to the problems with measurement of crime displacement as a result of a policing intervention at a criminal 'hot spot.' When an intervention program is successful at lowering crime in the target area, one long-standing concern in this body of research has been that crime will relocate. Reppetto (1976: 167) was one of the first to discuss this potential problem: "…will not the foreclosure of one type of criminal opportunity shift the incidence of crime to different forms, times, and locales?" However, recent analysis suggests that the spatial displacement of crime due to a policing intervention may be minimal. In a study utilizing data from Jersey City, Weisburd et al. (2006) found little evidence for crime displacement, and instead demonstrated that the nearby areas benefited from the intervention program even though it was implemented nearby and not in that location. In this way, they argue that when an intervention is implemented, adjacent areas may enjoy a diffusion of crime-reduction benefits rather than a rise in the crime rate.

While this offers insights for research on crime displacement and gentrification, it may be the case (and is quite likely) that gentrification and policing interventions have very different implications for the spatial displacement of crime. Therefore, it is important to make clear at the beginning that the current study does not assume that similar causal mechanisms will be at work here as they are in hot spots policing research.

This is a critical point for a few reasons. First, when a policing intervention occurs it does not cause residents to relocate, whereas gentrification has the potential for this to occur. Second, the policing interventions in prior research were implemented in extremely small areas, often a single block face or intersection. Gentrification, in contrast, can affect much larger areas in a neighborhood, and does not have a uniform impact across the area. Thus, while the current study intends to examine gentrification and crime displacement in Chicago using the methodology from policing studies as a guide, there is no obvious reason to assume that the displacement results will be similar.

*Conclusion*

In sum, modern research on gentrification suggests that there may be a negative association between gentrification and crime, although historically studies have found evidence for competing relationships. The use of several different definitions and operationalizations of the concept of gentrification make generalized conclusions difficult. There is a small but growing level of attention to this phenomenon in criminology, and while important work has been done to suggest contextual factors which may be involved few have attempted to empirically examine such mechanisms. Evidence of displacement from gentrification is at times weak, but there are theoretically compelling reasons to continue to explore the possibility that gentrification causes a spatial displacement of crime. This dissertation hopes to reconcile a few of these problems and explore some missing elements in prior research examining gentrification and crime.

# CHAPTER THREE MEASUREMENT OF NEIGHBORHOODS AND NEIGHBORHOOD-LEVEL EFFECTS

Research examining gentrification in neighborhoods must necessarily stop to consider the conceptualization and measurement of 'neighborhoods' and 'neighborhood-level effects' before embarking on an empirical evaluation of such factors. In this chapter, I will discuss the use and definition of neighborhood as a unit of analysis and examine the methodological and theoretical literature on neighborhood-level effects.

## *What is a Neighborhood?*

Although many studies claim to study effects at the neighborhood-level, the conceptualization of what a neighborhood is remains difficult to consistently define. The understanding of 'neighborhood' is not unlike the conceptualization of pornography in our legal system: It's difficult to define, but "everyone knows it when they see it." (Galster, 2001: 2111). In their groundbreaking book, *Neighborhoods and Crime*, Bursik and Grasmick (1993: 6) state that a neighborhood is "a small physical area embedded within a larger area in which people inhabit dwellings." In neighborhoods, residents share proximity and must share in the circumstances that come out of living in a physically close space. Similar definitions focus on the ecological aspects of neighborhoods, although some in urban studies include social elements into the definition, stating that a neighborhood is "a limited territory within a larger urban area, where people inhabit dwellings and interact socially" (Hallman, 1984: 13). Attempting to resolve problems with prior definitions, Galster (2001: 2112) created the following definition for

neighborhoods: "Neighborhood is the bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses."

One problem with modern conceptualization of neighborhoods is a presumption that residents in the area are in agreement on the physical boundaries; a resident on the border of a neighborhood may feel more socially connected to another neighborhood (Galster, 2001). However, several scholars point out that the concept of living in a neighborhood and living in a 'community' are not necessarily synonymous (Guest and Lee, 1984; Lee and Campbell, 1997). Neighborhoods and their residents *may* share attitudes, relationships, and common sentiments, but this is not necessarily the case (Kirk and Laub, 2010). In contrast, discussion of a community implies a group sharing such sentiments and solidarity. A discussion of community factors should refer to intangible qualities amongst residents, whereas neighborhood factors are thought of as more objective; you can spatially plot the boundaries of a neighborhood, but for a community this is not the case (Kirk and Laub, 2010; Tilly, 1973).

Given the growing trend toward globalization, some have recently questioned whether or not neighborhoods or the study of community still matters. In the current era of telecommuting, the Internet, and plane travel, some would argue that variation at the local level has lost its importance. The current study contends that neighborhoods continue to have significance in the explanation of social processes within. The changing nature of our routine activities and socialization patterns necessitates a modern approach to community- and neighborhood-level research, but the answer is not to abandon the study of neighborhoods and communities. Rather, what becomes interesting in modern

research is how such processes continue to matter and also how they have changed (Sampson, 2012).

*Neighborhood Measurement*

Although neighborhoods are thought of as physical units, the exact method in which they are defined and measured has varied across social science research. The choice of how to measure a neighborhood is critical; its operationalization can impact the conclusions drawn about causal mechanisms at work (Bursik and Grasmick, 1993; Hipp, 2007; Kirk and Laub, 2010). Studies have used blocks, block groups, census tracts, zip codes, and many others as proxies for neighborhoods, the decision of measurement often being one of necessity given the data available (Morenoff, Sampson, and Gannon-Rowley, 2002). A typical strategy involves gathering and summing the data obtained from individuals within households in a particular area. However, as Elliott and colleagues (2006: 298) have said, "theory, not convenience should drive our definitions of what constitutes a neighborhood."

Hunter and Suttles (1972) contributed to the conceptualization of neighborhoods by stating that there are four levels which can be used to measure behavior, each having its own mechanisms. The first and smallest level is Local Networks, which they generally limit to study at the block face. The second level is what they call Defended Neighborhoods, referring to the smallest possible unit with a recognizable identity. The third level is called Community of Limited Liability; these are areas that are large enough to be recognized by official sources such as the government. And finally, the fourth and largest level of groupings is called Expanded Community of Limited Liability. These

units are defined and utilized for gathering external resources for the area. In criminology research, while some have suggested that aggregating crime to the block level is preferred (Hipp, 2007), most researchers examine neighborhoods using an aggregation of data beginning at the census tract level, placing most analyses in the Defended Neighborhood or Community of Limited Liability categories.

*Measurement of Neighborhood-Level Effects*

Exactly how one should capture effects at the neighborhood level also has little consensus within the criminological literature. One popular method involves collecting individual-level data and then aggregating their responses up to the neighborhood level. A potential problem with this technique is the potential for same-source bias. Such bias is problematic because individuals report on their personal impressions and opinions, and have difficulty discussing characteristics of the neighborhood in general without biasing their results with their own personal experiences. Thorndike (1920: 28) referred to this problem as "the constant error of the 'halo'". What has become preferred in criminological research (and social science in general) is gathering an independent sample (Kirk and Laub, 2010).

A modern method of measuring neighborhood-level mechanisms suggested by Raudenbush and Sampson (1999) is what they call 'ecometrics,' where neighborhood processes are systematically considered as ecological phenomena. They contend that approaching the study of neighborhood-level effects from an ecometric approach allows for a distinction between processes at several layers. In this way, measures of neighborhood mechanisms such as social ties (Morenoff et al., 2001), collective efficacy

(Sampson et al., 1997), and social capital (Morenoff et al., 2001; Rose and Clear, 1998) have been collected and examined for their relationship to crime and neighborhood dynamics.

Studies on neighborhood-level analysis of crime have tapped into a variety of data sources to gather such independent samples. For example, Tita, Petras, and Greenbaum (2006) used a combination of census and housing data tracking characteristics of residences, such as number of bedrooms and bathrooms, age of the residence, and amenities (air conditioning, fireplace, etc.) to examine crime and residential choice in Columbus, Ohio. To capture citizen participation in neighborhood organizations, Ohmer and Beck (2006) collected survey data from four neighborhood organizations in Pittsburgh. Examining neighborhood-level deprivation and collective efficacy, Odgers and colleagues (2009) utilized data from a longitudinal twin study in England and Wales where people living in the same neighborhood as the participants were administered an independent survey. The current study utilizes data from the Project on Human Development in Chicago Neighborhoods (PHDCN) in which a community survey was administered in 1994-95 and 2001-02. The benefit of this data collection over prior studies is the number of neighborhoods in the analysis (343). This is beneficial because similar neighborhood-level analyses in other cities have often yielded a much smaller number of neighborhoods for comparison.[6]

In criminology, neighborhood-level effects are investigated to determine if crime varies systematically by such characteristics across neighborhoods. Structural

[6] For example, Taylor and Covington's (1988) study of Baltimore includes only 66 neighborhoods. Green et al.'s (1998) examination of New York City includes 45 community districts for analysis.

characteristics such as poverty, mobility, and heterogeneity are examined in their relation to crime, the presence of physical disorder, and measures of social disorder (Hipp, 2007). While many studies have demonstrated that certain structural characteristics promote higher crime, they often vary significantly in their level of aggregation. This is particularly true in research examining gentrification and crime. Neighborhoods are operationalized either using zip codes (Van Wilsem et al., 2006), census tracts (Covington and Taylor, 1989), or by larger community areas such as police districts (McDonald, 1986).

If research on gentrification and crime can continue, it is vital that researchers base the measurement and aggregation of neighborhoods on theoretically sound reasoning. This will enable conclusions from a variety of studies to be compared across cities and over time. The current study utilizes the PHDCN's operationalization of neighborhood clusters as a preferable unit of analysis for a few reasons. Their definition of a neighborhood complements prior research definitions in its focus on physical space, and by aggregating to a slightly larger scale than census tracts, this operationalization of neighborhoods takes into account the possibility that residents from these clusters will share similar public space, have chances to interact with each other in the area, and will distinguish their neighborhood area from those around it. These clusters were also not created out of convenience, but constructed to represent ecologically meaningful units (Sampson et al., 1997). Given the development of neighborhood measurement in prior research, this method of distinguishing neighborhoods seems appropriate to examine social and contextual factors within. This measurement process will be discussed more in Chapter Six.

# CHAPTER FOUR NEIGHBORHOOD-LEVEL SOCIAL CONTROL AND GROUP THREAT

In the 1830s, Guerry and Quetelet became the first scientists to apply empirical analysis to what many considered social problems. Using the newly published official crime statistics from the French *Compte généralé*, their work ushered in a new era for social scientists to look at social phenomena, including crime, and study them scientifically (Lindesmith and Levin, 1937). In particular, what these 'moral statisticians' recognized was the geographic regularity of crime statistics, and their tendency to fluctuate along with other problems such as poverty, infant mortality, and mental illness. Even at a time when phrenology, feeblemindedness, and physiognomy were taking root, these scholars were laying the foundations for a more sociological explanation for criminal behavior.

In this chapter, I discuss the development and research within the framework of neighborhood-level social control. I begin with a description of its origins, move into the early Chicago School, and then move on to an assessment of this research in the modern era (1980s – present). A review of the concept of collective efficacy and research investigating it will follow, and this chapter will conclude with a discussion of the research on racial and ethnic threat that (ultimately) will be tied into the collective efficacy and control framework.

## *Overview and Historical Development*

The origins of the concept of social control are often attributed to Emile Durkheim. He wrote that crime is a necessary element of human societies because establishing certain acts as criminal helps individuals to understand the boundaries of

appropriate behavior (Durkheim, 1895). In his famous book *Suicide* (1897), Durkheim introduced an implicit assumption about human nature which is subsequently present in all control theories in criminology. He stated that individuals who are in weakened groups in society are vulnerable because they only rely upon their own personal desires and interests in guiding their behavior (Durkheim, 1897). The assumption, therefore, is that human beings are naturally self-serving and hedonistic; they must be controlled by societal rules and norms to keep from committing crime. George Herbert Mead is another early scholar to discuss the concept and origins of social control in individuals. He argued that social control "will depend on the degree to which the individual does assume the attitudes of those in the group who are involved with him in his social activities" (Mead, 1925: 476). While some scholars developed criminological theories centering on the influence of individual-level mechanisms to establish social control (Hirschi, 1969; Reiss, 1951; Toby, 1957), scholars also examined how social control is both strengthened and weakened by mechanisms at the neighborhood level.

The pioneering work of scholars at the University of Chicago in the 20th century helped to establish the importance of social control mechanisms in the study of crime. The concept of social disorganization developed from these origins, and interest in this neighborhood quality set off what has now been almost a century of research in neighborhoods and crime. Social disorganization theory emerged during the early 20th century, the earliest research being conducted in Chicago (Shaw and McKay, 1942; Thomas and Znaniecki, 1918; Thrasher, 1927). During this period, the city of Chicago was undergoing a massive population increase due to an influx of immigrants flocking to the urban center. Population estimates from the 1900 and 1920 Chicago census show that

the population increased from 1.7 million to 3.4 million, a 200% increase in just thirty years.[7] Scholars grew interested in the outcomes of having such a heterogeneous population living in such disadvantaged conditions.

Thrasher's (1927) examination of gangs in Chicago introduced the concept of social disorganization when describing neighborhoods with persistent gang activity. According to his study of over 1,300 gangs, he concluded that the source of gang formation is disorganization within a community leading to unmet needs for local youth. Gangs are not organized to commit delinquent acts, according to Thrasher, they commit crime because they have no adult supervision and are free of control. In this way, Thrasher introduced a pure control theory at the neighborhood level, and suggested that community organization is crucial to inhibit stable levels of youth gang crime and delinquency.

Clifford Shaw and Henry McKay continued crime scholars' interest in neighborhood-level explanations for crime by framing cities as spatially pathological. Their original theory (1942) was a mixed model including elements of control and cultural transmission. Initially tapping into the work of human ecologists such as Park and Burgess (1925) they observed that a particular area in Chicago (the 'zone in transmission') was characterized by stable and high levels of poverty, residential instability, ethnic heterogeneity, and disproportionate amounts of crime. By documenting the delinquency rates in Chicago over several decades, Shaw and McKay found that this stability existed despite the changing composition of the area, and they characterized such neighborhoods as having social disorganization, meaning these

[7] Retrieved from the United States Census Bureau (www.census.gov) on May 16, 2013.

neighborhoods were unable to realize common values or solve community problems (Shaw and McKay, 1942). In short, in the origins of social disorganization theory the neighborhoods, and not the people within them, were criminogenic.

Social control elements play a primary role in Shaw and McKay's explanation of stable crime patterns in neighborhoods. Specifically, Shaw and McKay claim that social disorganization leads to a weakening of the community's ability to exert informal social control; few people within this neighborhood attempt to prevent or interfere with problems as they arise in the community. This environment, lenient on supervision and control, makes adolescents and teenagers within the community feel that they are free to commit delinquent and criminal acts. They can vandalize property, shoplift from local shops, and get into scuffles without fear of sanction. In this way, Shaw and McKay's theory of social disorganization has a strong element of social control; it is only when there is a breakdown in the informal social control elements of a community that delinquency and crime flourish (Shaw and McKay, 1942).

In conjunction with his work developing social disorganization theory, Clifford Shaw also began the Chicago Area Project in 1932. This project installed neighborhood centers which were run by residents, and the goal of the centers was coordinating resources for the community and sponsor activity programs (Shaw and McKay, 1969). The Chicago Area Project continues to operate, but its effectiveness at reducing crime and delinquency was never carefully assessed, leading some scholars to assume that it did not have a strong impact on crime (Kobrin, 1959; Lundman, 1976; Miller, 1962). Nevertheless, its mission of community building and mobilizing low-income residents to

take responsibility for their neighborhood has resulted in numerous youth, career, and community programming.

*Modern-Era Research (1980s – present)*

The Chicago Area Project's failure to demonstrate a preventative effect on delinquency contributed to a general decline in popularity of social disorganization theory in the 1950s and 1960s. There were also several critiques pertaining to the theoretical framework itself. First, critics took issue with the emphasis on group dynamics; it was thought that explanations at the neighborhood-level were too deterministic. At a time when self-report and survey methodology were in vogue, which indicated that crime was not restricted to particular urban areas, it is perhaps not surprising that scholars were losing interest in neighborhood-level effects. Second, the stability of city development and crime levels were not the same after the Second World War. European immigrants were no longer the majority.

Bursik and Webb (1982) specifically examined this aspect of the original theory by examining turnover in Chicago neighborhoods in the 1940s and 1950s. While they concluded that the residential succession argument – that high crime persists despite population turnover – was supported in the 1940s, it was not supported with data from the 1950s. A third criticism pertained to the measurement of social disorganization. Essentially, critics took issue with prior studies for not measuring social disorganization independent of crime. These studies were criticized for tautological reasoning, defining social disorganization by the effect it was believed to cause. According to critics, the concept of social disorganization was still a 'black box' which needed to be unpacked

and measured separately from its causes or effects. Finally, scholars disagreed as to the critical theoretical argument to be made in social disorganization theory. In her 1978 evaluation of the theory, Ruth Kornhauser raised the point that there are two main arguments in the theory, social disorganization and cultural transmission. When pressed, Shaw and McKay concluded that the cultural transmission element was the critical element responsible for stable crime in these disorganized areas (Bernard, Snipes, and Gerould, 2010), but Kornhauser thought this conflicted with the process of their argument, arguing that the causal ordering of the theory suggests that delinquent subcultures can only emerge in neighborhoods that are already disorganized (Kornhauser, 1978).

With Kornhauser's book came a resurgence of interest in social disorganization, and in the 1980s it was dubbed a neighborhood or community control explanation (a.k.a neighborhood control theory). The essentials of Shaw and McKay's theory remained; when a community is impoverished, racially and ethnically diverse, and has high residential turnover, it will experience difficulty coming together to form relationships and solve problems. Kornhauser (1978) evaluated the social disorganization framework and concluded that moving forward the focus of the theory should be on the control aspects of communities, and not the cultural transmission process. Rather than continue to measure social disorganization by macrosocial structures (e.g. poverty), the suggestion was to examine the actual mechanisms by which these factors facilitate the microsocial control of residents (Kornhauser, 1978).

In the 1980s several studies identified neighborhood processes which may impact crime. One of the most important advancements to neighborhood control theory came

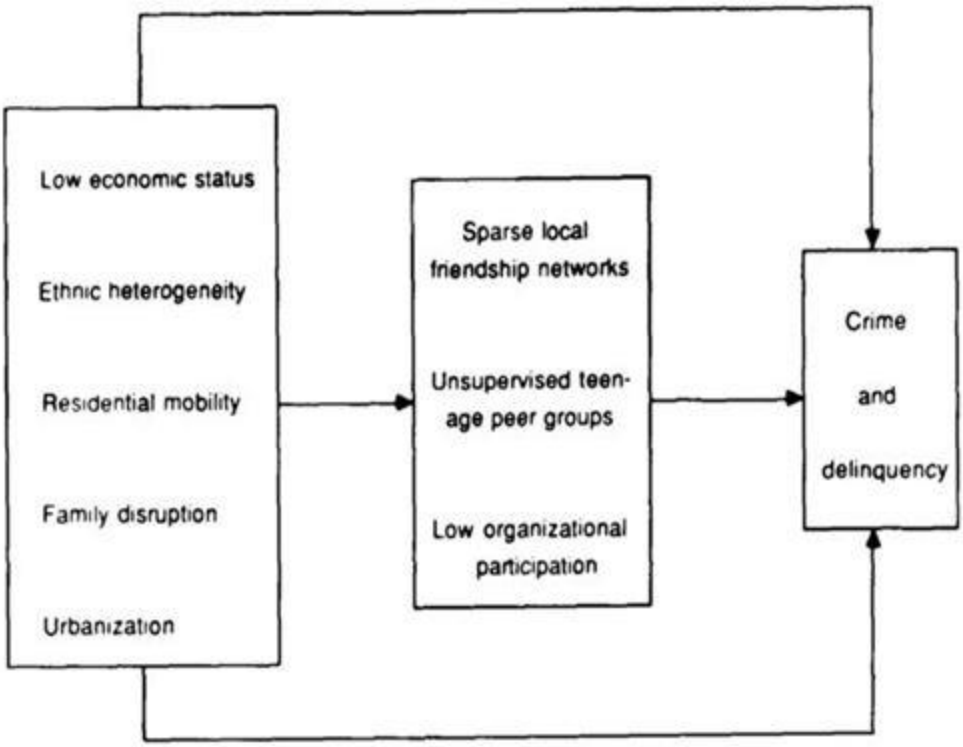
with the work of Bursik (1999) and Bursik and Grasmick (1993), where a systemic model of neighborhood social control was first explored. Targeting the criticism that the concept of social disorganization is a 'black box' that has yet to be appropriately measured, they focused on the importance of developing strong social ties to establishing effective informal and formal social control. The choice to apply a systemic approach came from a desire to more easily differentiate social disorganization from ecological processes, and also from crime and delinquency. Based on the assumption that residents share a common goal of wanting to live in an area free of crime, they posited that neighborhood characteristics such as poverty, heterogeneity, and instability impact both primary and secondary relationship networks. Disruption of these networks can subsequently compromise the neighborhood's ability to access public (law enforcement, local government), parochial (less intimate, secondary sources), and private (intimate/family relationships) sources of control. In *Neighborhoods and Crime*, Bursik and Grasmick (1993) stated that crime rates represent the outcome of group dynamics operating at the neighborhood level. They sought to reformulate social disorganization to emphasize how neighborhood life is shaped by the structure of different social networks with connections both within the community and between the community and external sources. In a test of this theory, Bursik (1999) examined Oklahoma City residents and mechanisms of social control. He found that the perception of being embedded within private and parochial networks was positively associated with long-time residence in the area and the perception that residents are similar to themselves.

Prior to Bursik and Gramick's (1993) book examining different levels of social control, scholars were also extending neighborhood control theory to examine the

different dimensions of social control in a systemic model. Robert Sampson (1988) introduced a multilevel systemic model in his examination of British Crime Survey data. He argued that prior research neglected the macro-social factors involved in community social organization as well as the effect of community-level factors on individual behavior. In short, at the community level, he predicted that neighborhoods with high residential stability will have dense friendship networks, strong collective attachment, and more social activity. At the individual level, he predicted that factors such as length of residence will increase their social ties, attachment, and participation in the community, all of which would increase informal social control. Results supported his hypotheses and led to a follow-up article with W. Byron Goves, where they introduced an updated systemic model of social disorganization (Sampson and Groves, 1989).

In this updated model, Sampson and Groves (1989) identified community dimensions of social disorganization which could be explicitly measured. As a systemic model, their focus was on how "social ties are embedded within ecological, institutional, and normative community structures." (Sampson, 1991:45) Specifically, they asserted that sparse friendship networks, the presence of unsupervised teenage peer groups, and low participation in community organizations were all dimensions indicating a community is socially disorganized. In this way, the dimensions of social disorganization were distinguished from crime and delinquency. This new model of neighborhood control, shown in Figure 1 below, suggests that neighborhood conditions such as poverty, heterogeneity, mobility, urbanization, and family disruption may have a small direct effect on crime and delinquency, but they also impact these community conditions which themselves cause crime and delinquency to increase.

Figure 1: Systemic Model of Social Disorganization (Sampson & Groves, 1989)




Again using British Crime Survey (BCS) data, which was a 1982 self-report victimization survey of 10,905 randomly selected residents (aged 16 and over) from across Great Britain, results showed clear support for the authors' updated model of neighborhood control theory. The study found that the level of unsupervised teenage peer groups had the largest effect on victimization. It also found that less extensive community ties are associated with more victimization. Sampson and Groves' hypotheses were further supported in the finding that none of the exogenous factors (poverty, heterogeneity, stability) have direct effects; they are largely mediated by unsupervised peer groups (Sampson and Groves, 1989: 792). In a follow-up examination of this model, Sampson (1991) more closely examines residential stability and its impact on the formation of community friendships, developing acquaintanceships, and stranger

recognition. Using the 1984 BCS data, he found that the more friend and acquaintance relationships and the less anonymity in a community, the more cohesive and satisfied the community. A later test of 1994 BCS data replicating Sampson and Groves (1989) supported the model again, this time the community dimensions mediated the effects of the structural characteristics even more than in the original study (Lowenkamp, Cullen, and Pratt, 2003).

The shift in these systemic models away from the traditional conceptualization of social disorganization was necessary for researchers to move away from tautological measurements of the concept. However, a lingering problem in these early systemic models was the importance placed on strong social ties in promoting informal social control (Sampson, 2012). Several criticisms have been raised pertaining to this element. First, some scholars have suggested that strong ties within a community may have no impact on improving resources or social control (Wilson, 1996). Second, the strength of social networks in place for illicit purposes (such as drug dealing and gang networks) may do little to improve the community. In a recent examination of PHDCN and homicide data from the 1990s, Browning and colleagues (2004) found that social networks may increase the social capital of offenders. The final criticism stems from the influential paper by Mark Granovetter (1973) about the usefulness of weak social ties. In short, the ability of a community or community members to gain access to resources, jobs, housing, (etc.) may depend on communication within loose, wide social networks where the ties are weak but nonetheless effective at relaying information. This is important to the neighborhood control perspective because it has traditionally operated under the assumption that dense, strong social ties matter. In fact, it may be that these are

not always predictive of strong community social control; knowing your neighbors a little may be just as effective as knowing them very well. Addressing some of the lingering problems with the importance of social ties, Sampson and colleagues (1997) discussed an alternative explanation with their introduction of the concept of collective efficacy.

*Collective Efficacy*

In 1938, sociologist Louis Wirth described urbanism and its impact on our way of life. In this paper, he famously described the fact that in most urban areas people know very little about their neighbors. According to his now classic paper, "The bonds of kinship, of neighborliness… are likely to be absent or, at best, relatively weak." (Wirth, 1938: 11) With this background, and given the difficulty reconciling the importance of social ties in systemic models of neighborhood control, the next evolution of neighborhood control came with a theory proposed by Sampson and colleagues (1997) which they titled 'collective efficacy.'

The authors' choice to publish the introductory article for their theory in *Science* magazine is worth mentioning, because this is not a traditional academic journal for criminological theory. A brief survey of the current issue reveals that article topics include neuroscience, chemistry, archaeology, infectious diseases, and atmosphere science.[8] One reason for this choice of publication could have been to broaden the range of readership, which would have otherwise been primarily restricted to criminology and criminal justice students, researchers, and professors in an academic journal such as *Criminology*. Similar to Wilson and Kelling's (1982) decision to introduce their 'broken

[8] *Science* 347: 1169 - 1284. Retrieved from www.sciencemag.org/content/current on March 14, 2015.

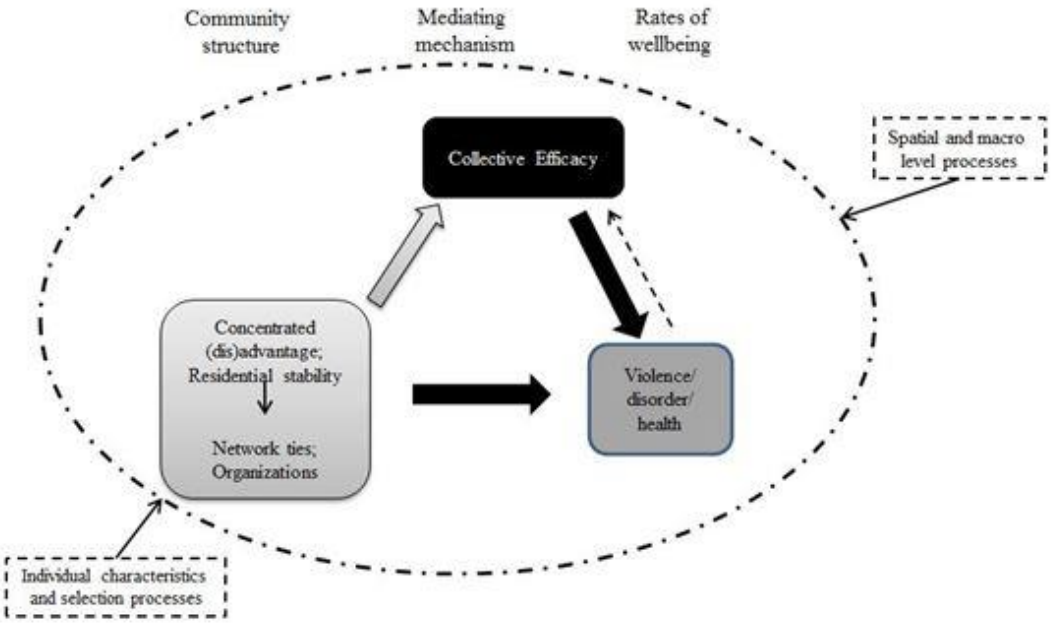
windows' theory in *The Atlantic* magazine, the decision to introduce collective efficacy in this manner led to the article being widely read and discussed in subsequent years by a wide range of interested parties.

Collective efficacy is a concept that encompasses two general qualities of an area, social cohesion (the "collectivity") and shared expectations for social control (the "efficacy"). In this theory, the requirement for dense social ties to produce social control is deemphasized and it is a working trust, and not friendship, which can be enough to produce this collective efficacy in a community (Sampson, 2012). Social ties can produce collective efficacy, but they are not a requirement as they are with concepts like social capital. This is a critical point of differentiation from prior research which largely assumed that strong social ties are necessary and protective factors for communities. Sampson (2012) has since elaborated on this point, drawing on recent research which suggests that strong social ties are not necessarily always a good thing for communities, but can sometimes be criminogenic forces (Browning et al., 2004).

Originally the term 'collective efficacy' was defined as a linkage of mutual social trust and cohesion, and shared willingness and expectation that neighbors will intervene to solve problems and exercise informal social control (Sampson et al., 1997). In their initial examination of this concept, the authors speculated that collective efficacy is associated with a reduction in violence, and they used 1995 survey data from Chicago neighborhoods to examine this question. They found support for this hypothesis; in neighborhoods where measures of collective efficacy are high there tends to be lower incidence of violence. Importantly, this factor mediates the effect of neighborhood-level structural factors such as poverty and residential mobility (Sampson et al., 1997).

As shown in Figure 2, the most recent model of collective efficacy suggests that structural neighborhood-level characteristics do have an impact on crime and disorder. However, the theoretical model suggests that characteristics such as concentrated disadvantage, mobility, and heterogeneity in a community are important because they weaken and disrupt network ties (Sampson, 2012). Collective efficacy is also acknowledged as being influenced by these factors, but as the model suggests, it has its own strong and direct effect.

Figure 2: Model of Collective Efficacy (Sampson, 2012)




Follow-up studies examining collective efficacy have continued to show support for its importance in predicting neighborhood crime patterns. It has been found that the level of collective efficacy in a neighborhood can account for levels of crime and disorder (Sampson and Raudenbush, 1999). Scholars also contend that high collective efficacy in one neighborhood may have benefits to nearby areas. The suggestion is that it may

'ooze' over into nearby places, so they too enjoy a lower level of crime (Morenoff, Sampson, and Raudenbush, 2001). Recent research has also examined collective efficacy's ability to impede subsequent breakdowns in neighborhood social control.

Empirically, the importance of collective efficacy in explaining crime within neighborhoods has been demonstrated both in the U.S. and internationally (Sampson, 2012). In their meta-analysis of over two hundred examinations of neighborhood crime rates spanning several decades, Pratt and Cullen (2005) found that collective efficacy had a mean correlation of -0.303 (scale of -1 to 1) which they describe as a robust finding. Importantly, they conclude that collective efficacy's explanatory power trumps other commonly identified causal factors such as poverty.

While collective efficacy is often measured as a macro-level concept, it likely also operates at the individual level. Prior research has already demonstrated that individuals living within neighborhoods high in collective efficacy are more likely to benefit from authoritative parenting (Simons et al., 2005). Additionally, collective efficacy has been found to have effects on adolescent behaviors; neighborhoods high in collective efficacy have been found to have less unstructured socializing by youths (Maimon and Browning, 2010).

Another neighborhood-level process that has been examined independently from collective efficacy is the impact of minority and group threat in a community on crime rates. In the following section, I will discuss the prior literature on this area and introduce a way to combine this perspective with the concept of collective efficacy. These two concepts have been examined independently, but the current research will

show that the two may interact and should therefore be considered and examined together. There has been a recent trend in neighborhood-level research to revive a discussion of cultural mechanisms. In the current study, I include a measure perceived neighborhood change to represent group threat dynamics, and use it to interact with the gentrification process in affecting crime rates over time.

*Group and Minority Threat Perspective and Research*

Group threat has been examined for its impact on a variety of outcomes. One body of literature suggests that out-group prejudice, when racially charged, can explain punitive attitudes towards the minority group in question (Ousey and Unnever, 2012). In several empirical examinations of prejudice and intolerance toward minority groups, it has been revealed that these same areas also are the most supportive of punitive penalites for offenders in general (Hurwtiz and Peffley, 2005; Ousey and Unnever, 2012; Unnever and Cullen, 2010). Scholars have also begun to examine this process internationally, comparing minority threat and prejudice across Europe (Lahav, 2004; Quillian, 1995). For the purposes of the current study, the focus will be on research examining racial and minority threat dynamics at the neighborhood level.

Group-threat theory suggests that when the majority group in an area perceives threats from a minority group, prejudice and hostility towards this minority group will have a variety of negative outcomes (King and Wheelock, 2007). In Herbert Blumer's classic article about this phenomenon, he suggests that within areas groups develop a kind of hierarchical social position which makes group members at the top believe they

are entitled to most of the area's resources and opportunities. According to his theory, when another group threatens to disrupt this dynamic and use the community's resources, prejudice and intolerance can increase to the point of action (Blumer, 1958). This process is thought to become amplified when the minority group presence increases or they mobilize and attempt to seize additional community resources and privileges (Blalock, 1967; Bobo, 1988; Bonilla-Silva, 1997, 2006). Building off Blumer's original piece, Blalock (1967) contended that the size of the minority group plays a large role in the perceived threat they pose; as their relative size increases in a community, the majority will become more concerned and threatened about the social and financial resources at stake. For Blalock, the assumption is that the majority group tends to be white, and the growing minority presence in the community is black. Subsequent research has built upon this racially charged process, finding that white majority residents begin resorting to longstanding racial stereotypes to characterize their black neighbors as their presence increases (Van Ausdale and Feagin, 2002).

The majority of the literature on group threat examines this dynamic looking at a white majority reacting to the invasion of a black minority group presence. Levine and Campbell (1972) studied levels of violence and minority presence, and concluded that when the minority (black) presence is larger, there are a greater number of attacks on this population. Bobo (1988) emphasized that white residents prefer to enjoy a relative "social distance" from minority residents, and when this presence increases they feel threatened that this social distance will close. Similar studies have confirmed that while white residents claim to support integrated communities, they still prefer to be in the majority and thus receiving the majority of resources and privileges (Bobo, Shurman, and

Steeh, 1986; Clark, 1991; Frey, 1979). Research on the concept of 'defended neighborhoods' taps into this group threat dynamic, and data have found that when crime is directed against racial and ethnic minorities this tends to take place in neighborhoods where a recent influx of minority residents has taken place (Green, Strolovitch, and Wong, 1998).

In subsequent analyses, one possibility that has been explored is the idea that group threat may have a 'tipping point.' That is, while initial increases in the minority presence create conflict and problems, there is actually a curvilinear relationship in place; eventually if the minority presence becomes large enough it is suggested that feelings of prejudice, interracial conflict, and racially motivated crimes will decline (Blau, 1977; Horowitz, 1985; Sampson, 1984). However, just how much of a minority presence is required to reach this tipping point is up for debate. In Donald Horowitz's examination of competition and change across several countries he discusses what happens when an ethnic minority eclipses the original group in power, suggesting that conflict arises when a new majority is reached (Horowtiz, 1972). Peter Blau's 1977 book, *Inequality and Heterogeneity*, introduces a macro sociological theory which describes the social associations between groups; he explains that the varying levels of particular groups affect the dynamics and relationships between groups who diverge in their social structural position. While contact between groups may bolster intergroup relations, Blau also suggests that "the very conditions that foster social integration of various groups and strata into a coherent social structure simultaneously precipitate frequent interpersonal conflicts among members (Blau, 1977: 113). Sampson (1984) conducted a follow-up study to test Blau's theory using National Crime Survey (NCS) data from 1973-1978. He

found that there is some evidence for the curvilinear relationship, but cautions that it is still difficult to determine if the motivation behind interracial crime is group-threat and conflict (Sampson, 1984).

In gentrifying neighborhoods, changes are made to both the physical appearance of the area and the residential composition. However, across neighborhoods and context gentrification is not always received consistently by the long-term residents. At times, historical accounts reveal a significant degree of resistance to gentrification. For example, in the Tompkins Square area of New York City gentrification efforts underway in the late 1980s were met with protests and demonstrations, occasionally requiring police action (Jacobs, 1998). In Harlem, the "boutiquing" process (upscale designer stores replacing local retailers) began as early as the 1970s, and the use of public space began to change. Neighbors who used to feel comfortable congregating on the street to socialize began to get ushered away by local law enforcement at the request of merchants (Freeman, 2006; Jackson, 2005). Similar anecdotal accounts of gentrification being met with resistance and anger have been found in Chicago newspaper coverage of changes in areas such as Bronzeville and Pilsen. The changes that accompany gentrification may have obvious benefits to the growing middle class population in the area, but may also marginalize and unsettle the poor, longstanding population (Jacobs, 1998). It is this phenomenon that has the potential to cause the long-standing residents of a gentrifying community to feel that their neighborhood is not actually making changes for the better.

At the individual level, it is likely that perceptions of group threat work to impact attitudes and opinions as well. For example, research has demonstrated that individuals have increased perceptions of threat toward immigrant groups. In Ousey and Unnever's

(2012) examination of individuals across 27 European countries, they find that larger numbers of racial and ethnic minority groups is associated with more negative attitudes by individuals toward these groups, and it is also associated with a preference for more severe punishments for offenders. It is likely, therefore, that within these neighborhoods in Chicago perceptions of threat and dissatisfaction with the presence of perceived 'out-groups' may be working at the individual level to impact feelings of prejudice, discrimination, and desire for punitive treatment.

In the current study, the concept of perceived neighborhood change is introduced as a possible moderating force associated with the effect of gentrification on crime. If residents feel threatened, and perceive that changes in the environment and people in their area are not for the better, this implies as sense of unrest and discomfort. It is suggested in this study that this may cause crime to get worse, and not improve with the new developments. Survey measures in the current project will shed light on whether or not this sense of threat and discomfort has a relationship to crime over time.

*Conclusion*

Both collective efficacy and perceived neighborhood change are suggested as mechanisms which may interact with the process of gentrification in a neighborhood. This chapter has discussed how these concepts have been examined in prior research. In this dissertation, they will be utilized as moderating mechanisms to explain the variation in the relationship between gentrification and crime across neighborhoods. In Chapter 5,

these mechanisms are examined together to demonstrate how the suggested interactions between these factors may occur.

# CHAPTER FIVE THEORETICAL FRAMEWORK

In her groundbreaking 1961 book *The Death and Life of Great American Cities*, Jane Jacobs argues that streets where people are occupying public space and using it productively will not only be safer and experience less crime, but will also be generally better places to live. Throughout Jacobs' book, she stresses that success comes from residents becoming invested and engaged with keeping public spaces in neighborhoods accessible and constantly in use. Such an environment enhances the safety of both strangers and residents within an area (Jacobs, 1961). Jacobs' book paved that way for urban scholars in suggesting that it is important to understand how quality of life is impacted by both physical and social elements of city life. It is certainly one goal of gentrification projects to improve the quality of life in neighborhoods and make them better places to live. However, whether or not this is always the case, or these benefits are enjoyed by everyone in the area, is one of the questions that will be explored in the current project. In the following chapter, the theoretical framework for the current project will be laid out, so that the four primary mechanisms (gentrification, collective efficacy, perceived neighborhood change, and crime) can come together in a logically consistent story.

First, it is important to acknowledge that the processes being investigated in the current project likely occur alongside one another in neighborhoods. This simultaneity of processes makes it difficult to disentangle the temporal sequencing of causal events in this study, and this is an important limitation of the current project which will be discussed with more detail in the closing chapters. However, there are theoretical principles which can be drawn upon to build a foundation for studying how all of these

processes interact and influence crime over time, and that will be the focus of the proceeding chapter.

Similar to prior research, in the current project perceived neighborhood change is expected to be higher when gentrification causes the demographic profile in a neighborhood to dramatically change. Several studies have demonstrated this (Bobo, 1988; Van Ausdale and Feagin, 2002) but this work has largely been done examining areas that begin predominantly white and experience a rise in the number of racial-ethnic minority residents. In the current study, this same theoretical relationship is being examined where a variety of racial-ethnic groups are predominant in neighborhoods, and it is suggested that perceived neighborhood change dynamics will manifest in similar ways. It is suggested that the issue is one of a disruption to the homogeneity of an area; regardless of the racial or ethnic groups in question. For example, if gentrification in a historically African American neighborhood results in an influx of middle-class African American residents moving into the area, it is not expected that perceived neighborhood change would be as high as it might be if the incoming residents were middle-class and white. I ground this expectation in several historical accounts of gentrification in Harlem in New York City, and Bronzeville in Chicago. In Harlem, a large influx of middle-class African American residents took place in the early 20$^{th}$ century. Ethnographers have posited that these incoming residents sought to preserve the historical neighborhood culture, and so their moving into the area did not cause tension or neighborhood discord (Freeman, 2005).

In Chicago, the Bronzeville area began experiencing gentrification in a similar manner; effort was taken by developers to entice middle-class black residents into the area.

> *Developers who have gone into Bronzeville have explicitly marketed housing there to blacks, both because the community wanted to keep its historic identity and because there were doubts whites would have moved in. But the hope was that even if whites did not arrive with moving trucks, they would come down to hear the Blues.* (Badger, 2012: 6)

The gentrification processes in Bronzeville coincided with the demolition of the public housing projects, which paved the way for redevelopment of the area (Hyra, 2008).

However, citing the literature on racial and ethnic threat, when significant demographic shifts happen in a neighborhood over time, this can be associated with rises in varying levels of crime and disorder (Blau, 1977; Sampson, 1984). We have evidence that this takes place when a traditionally white, middle-class neighborhood experience an influx of minority residents (Levine and Campbell, 1972) so the current study represents a logical extension of prior research to examine whether or not this mechanism is experienced with less traditional groups in these roles. Therefore, the first element of this theoretical model implies that gentrification may be perceived as threatening if the process changes the neighborhood's traditional demographic profile. Several studies have suggested that there is an overall negative association between gentrification and crime (O'Sullivan, 2005; Papachristos et al., 2011). While gentrifying neighborhoods with no perception of group threat may experience a decrease in crime, it is suggested in the current study that gentrifying neighborhoods where perceived neighborhood change exists may experience higher rates of violence and victimization. Prior research has stated that one source of conflict in changing neighborhoods is the fear that new residents

will take over community resources (Clark, 1991; Frey, 1979; Green et al., 1998). It stands to reason therefore, that a neighborhood experiencing gentrification may see rises in violence and victimization as a result of conflicts that arise out of this competition for space and resources. If public spaces traditionally used for the leisure activities of longtime residents are taken over by the gentrifying population, this may lead to physical altercations, or the destruction of property. If the gentrifying population has a larger volume of automobiles per household, and they begin to take over most of the public parking, vandalism and auto theft may ensue.

Examples of this theoretical process in action can be found in archival newspaper accounts of the gentrification processes as they unfolded in Chicago neighborhoods in the 1990s. In the West Loop neighborhood, Fulton Street Market was a place for local food producers and craftsmen to sell their merchandise for decades, but real estate developers fought to rezone the area to make way for upscale loft condominium conversions. The local merchants felt that this move was effectively putting them out and threatening their businesses, and several instances of violence and property damage were the results of old and new residents clashing (Mendell, 1999). An example of gentrification causing longtime residents to feel 'pushed' out of the area comes from descriptions of the changes experienced in the northern neighborhood of Bucktown. In the late 1980s and early 90s this area experienced an influx of artists purchasing large spaces for lofts and studios. A longtime resident of Bucktown was interviewed about these changes in the Chicago Tribune:

> *I like the way this neighborhood is – mostly Puerto Rican – and I wish it would stay that way. All these families have been here for years and*

> *they're going to be pushed into another low-income neighborhood.*
> (Lauerman 1992: 1)

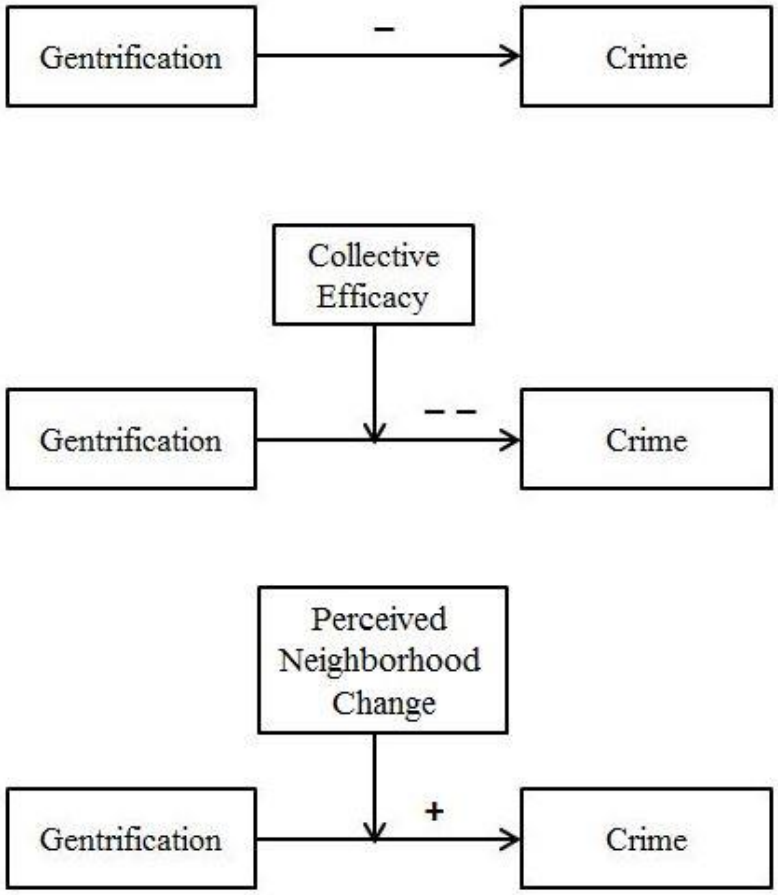
Such threats to both neighborhood culture and neighborhood resources parallel the problems discussed in prior research that connect group threat to crime. Therefore, an important point of the current investigation will be to examine whether or not the connection between gentrification and crime is moderated by levels of perceived neighborhood change.

This project also incorporates theoretical principles of collective efficacy into its explanation of crime. Incorporating collective efficacy into the theoretical framework implies a few assumptions, which bear explanation. First, one assumption is that neighborhoods rely on social control mechanisms to inhibit crime, and while forces at the individual level and a more macro-level may have some impact, it is these neighborhood-level factors which play a significant role in the levels of crime over time (Sampson, Raudenbush, and Earls, 1997). Second, this project assumes that collective efficacy is a quality which plays a strong role in a neighborhood's ability to maintain informal social control and lower crime. As a construct, collective efficacy's importance to crime levels in neighborhoods has been demonstrated in cities in the United States and abroad (Mazerolle, Wickes, and McBroom, 2010; Zhang, Messner, and Liu, 2007). While this neighborhood-level factor has not been examined for its interaction with gentrification processes, there is a compelling theoretical rationale for why it may be important to the relationship. Collective efficacy is thought of as a dynamic quality in neighborhoods that is partly endogenous, or contingent on the challenges at hand (Sampson, 2012). Rapid turnover and changes to the population of a neighborhood have long been associated with increased crime (Bursik and Webb, 1982; Shaw and McKay, 1942), but it may be the

case that having a high level of collective efficacy at the start of a challenge such as gentrification can protect the neighborhood from harmful consequences.

In summary, this dissertation's theoretical perspective attempts to merge the theoretical concepts of collective efficacy and perceived neighborhood change with the process of gentrification. Figure 3 displays the theoretical relationships between the primary variables of interest. It is my hope that the current project can merge these theoretical perspectives together in the following ways. First, it is suggested that examining gentrification for its overall impact on crime will result in a negative association, but this overall relationship is masking the changing impact of gentrification depending on contextual factors, which will be revealed once contextual factors are included. When gentrification takes places and the long-standing residents in a neighborhood perceive this as perceived neighborhood change, this will modify the relationship between gentrification and crime and these neighborhoods will experience an increase in crime.

Figure 3: Theoretical Relationships Between Gentrification, Collective Efficacy, Perceived Neighborhood Change, and Crime




Second, it is suggested that collective efficacy will moderate the relationship between gentrification and crime by strengthening the negative association. For example, if long-standing residents of a neighborhood notice that a large turnover in their population has occurred, and this turnover results in a change to the composition of the area, it stands to reason that a neighborhood high in collective efficacy would take productive action (i.e. calling meetings of neighborhood associations, organizing events designed for residents to meet and get to know one another). In contrast, a neighborhood low in collective efficacy that experiences disruptive gentrification may respond

negatively – where long-standing residents are dismissive and newer, more affluent residents seek to take control of the area and separate themselves from the longtime residents.

As simultaneously occurring factors, collective efficacy and perceived neighborhood change also likely impact each other within neighborhoods. Although the data do not allow for an examination of reciprocal effects, there are theoretical ways in which these processes may impact each other, and the direction and magnitude of these are important to consider. In this dissertation, it is theorized that high levels of collective efficacy may weaken any perception of perceived neighborhood change in neighborhoods; thus, it is not anticipated that these two factors will be positively correlated with one another because collective efficacy will have a negative impact on perceived neighborhood change. This prediction is based on the fact that the concept of collective efficacy has been linked to the ability of neighborhoods to actively solve their problems (Sampson, 2012; Taylor, 2002). The tense circumstances within which group threat perceptions arise may not be as likely to escalate to high levels in a neighborhood with high collective efficacy because these neighborhoods actively engage and solve problems before they build. For example, a neighborhood high in collective efficacy might engage with incoming residents to build a sense of cohesion and understanding about the expectations for shared public space. Perhaps in areas high in collective efficacy neighborhood organizations reach out to incoming residents to get them to join these groups, making them be perceived less as outsiders or invaders. Therefore, while these reciprocal effects cannot be examined in the current study, it is theorized that group threat is weakened by collective efficacy over time.

It is also theorized that group threat dynamics may serve to weaken the effectiveness of collective efficacy. Several scholars have noted that the degree to which collective efficacy can be effective at solving problems is contingent upon neighborhood context (Baumer, 2002; Wells et al., 2006) and the current study argues that perceptions of perceived neighborhood change may be just such a neighborhood condition that impacts the effectiveness of collective efficacy. Therefore, just as high levels of collective efficacy may weaken perceptions of perceived neighborhood change over time, escalating levels of perceived neighborhood change may themselves work to weaken collective efficacy. It is anticipated that these conditions will have a high negative correlation with each other, and they each have the potential to impact each other's effect on gentrification and crime in meaningful ways. It is a limitation of the current study that such simultaneous and reciprocal effects cannot be properly measured; reliable data on these measures were only collected at one point in time. This limitation is discussed in more detail in Chapter Eight, along with relevant implications for future research.

This theoretical framework establishes that these contextual factors may have differing effects; collective efficacy may be helpful in protecting neighborhoods from some of the potentially problematic outcomes of gentrification when perceived neighborhood change arises, but group threat forces may be harmful to gentrifying neighborhoods. Therefore, it is suggested that levels of these contextual factors will moderate the relationship between gentrification and crime.

# CHAPTER SIX RESEARCH DESIGN AND METHODOLOGY

## Introduction

The previous several chapters discussed the literature that serves as a foundation upon which this dissertation will be based. Although many valuable and informative contributions have been made, there are still many questions about gentrification and crime that are currently unanswered. Several puzzles have been named as key areas where research on gentrification and crime must go in the future (Kirk and Laub, 2010). In this research, I attempt to address some of these puzzles by examining the relationship between gentrification, crime, and informal social control, and perceived neighborhood change mechanisms.

The current chapter will begin with a discussion of the hypotheses that have been generated from the research questions presented in the introduction of this dissertation. It will then lead to a description of the data gathered from three major sources: The Project on Human Development in Chicago Areas (PHDCN) – specifically, the Community Survey administered in 1994-95 and 2000-01, the U.S. Census, and the Chicago Transit Authority (CTA). The current chapter will discuss the analyses investigating gentrification, crime, and contextual effects. While the analysis of displacement effects will be examined using the same data sources, the corresponding methodology and results will be discussed at the end of this chapter.

## Research Hypotheses

The first research question addresses the overall relationship between gentrification and crime. In the current study, this research will build on prior research and examine the following hypothesis:

$H_1$: Gentrification will be negatively associated with the levels of perceived violence and victimization in neighborhoods, such that levels of these variables will decrease with increases in the level of gentrification in a neighborhood cluster.

$H_2$: Collective efficacy will interact with gentrification at the neighborhood level and moderate the effect of gentrification on levels of perceived violence and victimization. Collective efficacy, therefore, will strengthen the negative association between gentrification and perceived violence and victimization.

$H_3$: Perceived neighborhood change will interact with gentrification at the neighborhood level and moderate the effect of gentrification on levels of perceived violence and victimization, changing the direction of this association. When gentrification interacts with high levels of perceived neighborhood change in a neighborhood, this will be associated with an increase in perceived violence and victimization.

$H_4$: There will evidence of a spatial crime displacement effect from gentrifying neighborhoods to adjacent areas.

*Data and Sample*

PHDCN

This project uses data from the Project on Human Development in Chicago Neighborhoods (PHDCN), specifically data from the 1994-95 Community Survey.[9] The PHDCN is an interdisciplinary study focusing on the causal pathways that lead to both positive and negative outcomes for children and adolescents, as well as for neighborhoods. It includes data on family dynamics, schools, and neighborhoods and their effect on youth development (ICPSR 2013). Survey questions taken for the current project include items relevant to crime, perceived neighborhood change, and items tapping into the concept of collective efficacy, which captures the neighborhood's social cohesion and willingness to intervene to maintain social control. In the PHDCN, neighborhoods were measured by placing all 866 census tracts in Chicago into 343 neighborhood clusters. The census tracts were originally constructed to be homogenous neighborhoods, making them a good starting point for neighborhood-level analysis (Green and Truesdell, 1937; Hipp, 2007). The PHDCN sought to aggregate these tracts into neighborhood clusters, designed to be "as ecologically meaningful as possible, composed of geographically contiguous census tracts, and internally homogeneous on key census indicators." (Sampson et al., 1997: 919). An average neighborhood cluster contains about 8,000 residents, and in the 1994-95 Community survey a probability sample is gathered of 8,782 residents within the 343 neighborhood clusters (Kirk and Papachristos, 2011). After excluding omitted responses for key variables used to construct the scales for collective efficacy and perceived neighborhood change, the final sample size for the current project was 7,739. For the purposes of the current research study, the unit of analysis is the neighborhood cluster as defined in the PHDCN data.

[9] The 2000-01 Community Survey data are used for exploratory analyses, which will be discussed later in this chapter.

The cluster which is mostly filled with Chicago's O'Hare Airport is excluded, leaving a total of 342 neighborhood clusters for analysis.[10]

It is advantageous to use data from the PHDCN Community Survey for a few reasons. First, these data have been a rich source of research on collective efficacy and crime for almost twenty years (Sampson et al., 1997) and the structure of the survey has been taken and implemented in other major cities, both within the United States and internationally (Wickes et al., 2013). Although these prior studies establish the importance of neighborhood-level effects in general, the current study contributes to this body of knowledge by suggesting connections between these well-established neighborhood mechanisms in areas of change. Second, the PHDCN's implementation of neighborhood clusters offers the possibility to consider neighborhood-level concepts, such as social cohesion, efficacy, and threat, because they have been constructed with attention paid to the composition of residents within. For example, there are some census tracts in Chicago which actually cover industrial areas; places like these are not included as neighborhood clusters, thus preserving the idea that only neighborhoods where residents live are being considered.

Chicago Transit Authority

Data were also gathered from archival records of the Chicago Transit Authority to ascertain the presence of 'L' train stations in each of the neighborhood clusters. Good access to metro services has been identified as a leading indicator of urban gentrification

[10] One limitation in using data from 1990 on gentrification and survey data from 1994-95 for the neighborhood-level mechanisms is that gentrification processes have the potential to impact contextual mechanisms such as collective efficacy and group threat. Therefore, it could be that the levels of these factors have already been altered by the gentrification process in 1994-95. In future research, it will be beneficial to capture these data simultaneously across a timeframe, so that these impacts can be examined.

elsewhere (Turner and Snow, 2001) but this has yet to be included in an examination of gentrification in Chicago, so its inclusion enhances the construction of the gentrification measure. To ascertain whether or not an L train station was in operation during the timeframe of the current project, a system map of the Chicago Transit Authority from 1990 was examined to identify the street addresses of each of the L train stations. These stations were then located within each of the neighborhood clusters, and a binary variable was generated (1 = L station within cluster).[11] These data are included with the census data measuring gentrification in the clusters.

In 1993, the L system included new stops on the Orange Line, which runs from the downtown 'Loop' to Midway airport. Neighborhoods that acquired these L train stations in 1993 were coded as '1' in data, because their inclusion provided new public transportation access to these neighborhoods that may have influenced development in the area. This allowed four additional neighborhoods to be coded '1' as having good L train access.

## Measures

A description of all variables used in the study is included in Table 1. The following sections will describe the measurement of each variable in detail.

[11] I considered that an L train station directly on the border between two NCs might provide similar access to both neighborhoods. In fact this only occurred three times, and in these cases I coded both clusters as having good L train access.

| Table 1. Summary of Dependent and Independent Variables, PHDCN Data | | |
|---|---|---|
| **Variables** | **Coding Scheme** | **Description** |
| *Dependent Variables* | | |
| Perceived violence | Ordinal Scale | Violence in past 6 months |
| Personal victimization log odds | Continuous | Logarithmic odds of victimization |
| *Individual-Level Independent Variables* | | |
| Gender | 1=Female | |
| Race-Ethnicity | 4 Dummy Variables | Black, Latino, Other, with White omitted |
| Age | Continuous | |
| SES | Index | % Families below poverty line, % on PA, % Unemployed, % female-headed households, % under 18 |
| Years at address | Continuous | |
| *Neighborhood-Level Independent Variables* | | |
| Racial-Ethnic Composition | 3 Dummy Variables | 70% A.A., 70% Latino, Mixed, with 70% White omitted |
| Perceived Neigh. Change | Scale | 3 item scale; alpha=.78 |
| Gentrification | Scale | 6 item scale; alpha=.85 |
| Collective Efficacy | Scale | |

*Dependent Variables*

In the PHDCN data there are a few potential ways to measure crime and violence. The first is through survey questions asking citizens to report on violent incidents that have happened in the neighborhood in the past six months. The second method is to analyze personal victimization through a question asking participants to report on all violent victimization experiences while living in the neighborhood. I examine these two outcomes of interest in the current study, and will report results using both measures as outcome variables of interest. For a few important reasons, the current project focuses on perceived neighborhood violence as the primary outcome variable of interest. One appealing element of this measure is its limited reporting window. By restricting participants to report on violence that has occurred in the past six months only, this

measure is preferred because it restricts the outcome to incidents happening after gentrification has been measured.[12] Another appealing reason to utilize the perceived violence measure is that prior research comparing results from this scale to victimization or homicide data as outcome measures yields comparable results.[13] However, it will also be advantageous to examine victimization data, because this will be a less rare event, and therefore the potential for a larger range of between-neighborhood variation may be observed.

The perceived violence scale is derived from survey responses to questions asking residents to report whether in the past six months the following actions happened: 1) How often was there a fight in this neighborhood in which a weapon was used? 2) How often was there a violent argument between neighbors? 3) [How often were there] gang fights? 4) [How often was there] A sexual assault or rape? 5) [How often was there] A robbery or burglary? Respondents were given the option to respond 'often' 'sometimes' 'rarely' or 'don't know' (ICPSR 2766: 21).

Summary scales such as this are a common method for creating factors to be used as outcome variables (Osgood, McMorris, and Potenza, 2002) but they are not without their limitations, which should be acknowledged. By giving equal weight to each of these items, the implicit assumption is that they are of equal severity, which may not be the case (DiPietro, 2010). This method also assumes that the questions are comprehensive in their capturing of all forms of the measure. While the perceived violence measure

[12] While the survey question on victimization gives participants the ability to report on all incidents, prior research has demonstrated that for approximately 40% of those surveyed the incident they disclosed occurred within the past six months (see Sampson, Raudenbush and Earls 1997: note 22).
[13] Sampson, Raudenbush, and Earls (1997) demonstrated that measuring neighborhood-level factors for their relationship to these three outcomes yielded comparable results. See Table 5 (Sampson et al. 1997: 923) for more detail.

captures a wide range of violent actions, it may be the case that some forms of neighborhood violence are being missed.

The measure of violent victimization in the PHDCN is a dichotomous variable (1 = yes). Each respondent was asked, "While you have lived in this neighborhood, has anyone ever used violence, such as in a mugging, fight, or sexual assault, against you or any member of your household anywhere in your neighborhood?" While the respondents were not restricted to a particular window of time for this question, original analyses using restricted time frames on reported incidents gave very similar results (see Sampson et al., 1997: note 22). From this variable, the logarithmic odds of victimization were calculated in each neighborhood cluster and are used in the current analyses.[14]

*Independent Variables*

Gentrification

Building off prior research, gentrification is partially measured in this study using data from the 1990 Census, but the current study also incorporates data from other sources for a more complete consideration of the process. The first consideration in identifying areas for gentrification potential in the 1990s was identifying the areas with low housing values. Beginning at this point will prevent neighborhoods from being seen as gentrifying if, for example, they were already affluent neighborhoods and simply went further along that extreme. To this end, all neighborhoods with an average home value

[14] The structural model mirrors that of Eqs. 4 and 5 in Sampson et al. (1997): 921.

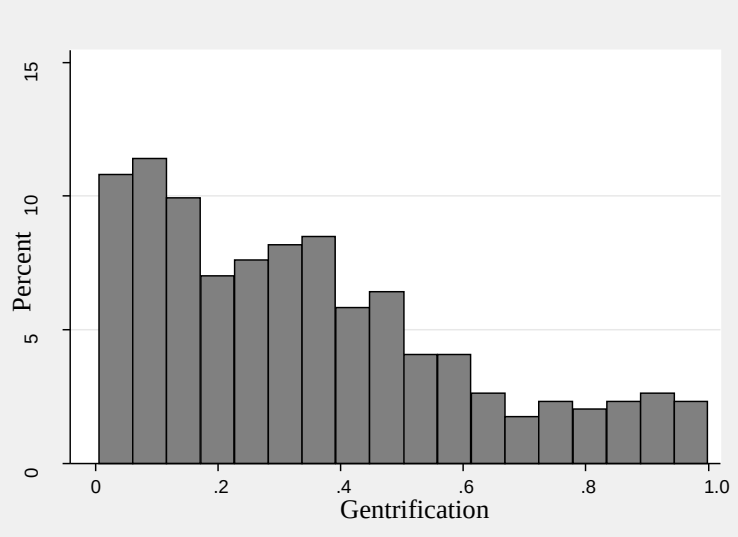
below the city's average are considered low-priced areas.[15] In total, there were 121 neighborhood clusters that could be defined as low-priced by this definition.

Drawing data from the 1990 U.S. Census and the CTA, the gentrification scale was conducted. To identify areas of gentrification potential in 1990, the following dichotomous variables were included in a summed scale of binary variables where responses for each neighborhood was either yes (= 1) or no: 1) [Low priced area…] Adjacent to a high-priced area,[16][17] 2) Containing an L train station within its boundaries, 3) With the majority (>50%) of residences having historic architecture (built before 1940), 4) With the majority (>50%) of residences having large (5+) housing units, 5) With less than 20% eligible (persons 25+) with a bachelor's degree, 6) With median income below the median income for the city.[18] Responses were summed and divided by the total number of items in the scale; higher scores indicate a higher level of gentrification potential.[19] This gentrification potential scale is modified from a similar scale used to measure gentrification potential by the Urban Institute in their 2001 analysis of Washington, DC (Turner and Snow, 2001).[20]

[15] In 1990 the average home value in Chicago was $110,000 (U.S. Census, 1990).
[16] This included all areas where the home value was above the city's average.
[17] Median home value would likely be a more reliable method of measuring prices in these areas, as the average home value may be impacted by extremely affluent areas of the city. In future research utilizing this scale, average home value will be replaced with median home value.
[18] In 1990, the median family income for the city of Chicago was $30,707 (U.S. Census, 1990)
[19] Principle components factor analysis indicated that the items load onto a single factor (eigenvalue = 3.85) which explains 48.3 percent of the variance in the measures. Individual factor loadings range from .623 to .745.
[20] The scale used in the current study mirrors their 'Five Leading Indicators of the Location of Future Gentrification' with the exception of a measure of recent appreciation. For the purposes to this study, access to the L train was taken as a comparable measure to access to Metro stations in the study of Washington, DC. Reliable comparable data for this indicator was not able to be derived from the Census data.

There are several potential benefits to creating a scale as an estimation of gentrification using these measures. First, they are all measured in the same way, and there are theoretical reasons for believing that all six measures are relevant to the underlying concept. The gentrification scale has validity (Cronbach's Alpha) of $\alpha = 0.85$, which suggests that it has internal consistency, and the items included in the gentrification scale are appropriate for measuring gentrification potential. Removal of any items in the scale did not increase the alpha level. The mean score was .35, with higher scores indicating a greater level of gentrification potential in the neighborhood. Figure 4 shows the distribution of neighborhood clusters across the gentrification scale. Approximately 49 percent of the neighborhood clusters (170 clusters) scored relatively low on the gentrification scale (.06 to .30). There were 34 neighborhood clusters (9.9 percent) scoring relatively high on the scale (.75 to 1.0).

Figure 4: Level of Gentrification in Neighborhood Clusters (N = 342)




It is important to verify that the gentrification scale, which uses data from 1990 to predict gentrification from 1990 – 2000, is accurately identifying neighborhoods that

experienced gentrification during this time period. To verify this, data from all 342 neighborhood clusters were examined with the 1990 and 2000 Census data. Neighborhoods scoring extremely high ($\geq 75^{th}$ percentile) on the scale should have significantly changed on these measures, whereas neighborhoods scoring lower on the scale should have seen less significant changes over time. For example, in neighborhoods experiencing significant gentrification, it is expected that the home value would increase, there would be fewer numbers of large housing units, more eligible residents would have bachelor's degrees, and the median income in the area would be significantly higher. However, in the neighborhoods in lower percentiles on the scale, it is not expected that these changes will be significant. Table 2 presents the results of this verification analysis. As predicted, neighborhoods in the $75^{th}$ percentile or higher on the gentrification scale changed in the predicted ways, but neighborhoods in the lower percentiles did not have significant changes to most of these indicators. This increases confidence in the validity of the gentrification scale. Although it uses 1990 data to predict gentrification in the coming decade, these analyses give verification that the scale accurately predicted those neighborhoods which had the most dramatic change.

**Table 2.** One-tailed T-test Comparison of Gentrification Measures from U.S Census (1990-2000)

| | **1990** | **2000** | |
|---|---|---|---|
| *≥ 75th percentile on scale* | | | |
| Home Value (1990 adj. $) | $59,326.43 | $136,203.83 | *** |
| % Large (5+) Housing Units | 67.33 | 29.99 | *** |
| % Eligible Persons with Bachelor's Degree | 8.97 | 35.33 | *** |
| Median Income (1990 adj. $) | $17,336.71 | $51,030.40 | *** |
| *50th - 74th percentile* | | | |
| Home Value (1990 adj. $) | $61,743.21 | $65,966.77 | * |
| % Large (5+) Housing Units | 48.25 | 41.42 | * |
| % Eligible Persons with Bachelor's Degree | 15.85 | 19.34 | |
| Median Income (1990 adj. $) | $21,321.34 | $23,435.29 | |
| *25th - 49th percentile* | | | |
| Home Value (1990 adj. $) | $71,487.61 | $73,589.21 | |
| % Large (5+) Housing Units | 42.55 | 40.68 | |
| % Eligible Persons with Bachelor's Degree | 26.34 | 28.47 | |
| Median Income (1990 adj. $) | $34,899.00 | $37,641.00 | |
| *1st - 24th percentile* | | | |
| Home Value (1990 adj. $) | $95,374.54 | $101,255.78 | * |
| % Large (5+) Housing Units | 15.31 | 14.27 | |
| % Eligible Persons with Bachelor's Degree | 34.77 | 36.98 | |
| Median Income (1990 adj. $) | $45,745.36 | $49,678.45 | |

*p < .05 **p < .01 *** p < .0001

## Collective Efficacy

Consistent with prior research, the measure of collective efficacy in the current study is identical to the scale as it was originally developed by Sampson et al. (1997) and has been used in a variety of follow-up research examining the construct both in the United States and internationally (Kirk and Papachristos, 2011; Wickes et al., 2013). The scale can be broken down to the measurement of three basic elements: social control,

social cohesion, and trust. Questions assessing the level of neighborhood social control asked respondents to indicate their willingness to intervene in the following scenarios: 1) children skipping school, hanging out on street corners, 2) children spray-painting graffiti on a local building, 3) children showing disrespect to an adult, (4) fighting in front of houses and someone was being beaten or threatened, and 5) budget cuts causing closest fire station to be closed down (ICPSR 2766: 10). To measure social cohesion and trust, the following items were combined: 1) people around here are willing to help their neighbors, 2) people in this neighborhood can be trusted, (3) people in this neighborhood generally get along with each other, (4) this is a close-knit neighborhood, and (5) people in this neighborhood share the same values.

The scale for collective efficacy was constructed using multilevel models, accounting for responses to each question coming from individuals who are nested within neighborhoods. From this, neighborhood-specific empirical Bayes (EB) residuals are used as the scale. In this way, similar to prior research, the collective efficacy scale represents the average level of collective efficacy in each neighborhood (Kirk and Matsuda, 2011; Sampson et al., 1997).

Perceived Neighborhood Change

The measure of perceived neighborhood change (examining the possibility of group threat dynamics) in the current analysis is constructed as a scale, combining responses to questions where participants were asked about changes to the neighborhood, and whether these changes make the area 'better,' 'worse,' or 'the same.' The following items were considered 1) During the past five years has this [neighborhood's looks]

changed for the better, stayed about the same, or gotten worse? 2) Have the people living in the neighborhood changed for the better, stayed the same, or gotten worse? 3) In the next five years, do you think this neighborhood will change for the better, remain the same, or get worse? The perceived neighborhood change scale has reliability (Cronbach's Alpha) of $\alpha = .78$. The mean score is .39, with higher numbers indicating a higher level of perceived neighborhood change in the neighborhood. Similar to the construction of the collective efficacy measure, to generate a variable measuring the average level of perceived neighborhood change in a neighborhood multilevel modeling was used to generate neighborhood-specific EB residuals.

Neighborhood-level Controls

Several structural characteristics were included in the analysis, taken from the 1990 and 2000 Census. Consistent with prior research, the racial-ethnic composition of each neighborhood was measured using dummy variables (DiPietro, 2010; Kirk and Matsuda, 2011). *African American NC* refers to clusters with a 70 percent or higher African American population. Similar variables were constructed for *White NC* and *Latino NC*. For the variable *Mixed NC*, the clusters were coded "1" if they had less than 70 percent of one single group. In this study, the largest proportion of neighborhoods were classified as 'Mixed' (52 percent), with 22 percent identified as African American, 16 percent identified as White, and 10 percent identified as Latino. The concentration of poverty of the neighborhood clusters is also examined with a scale assembled from the 1990 U.S. Census.[21]

[21] This measure includes: percentage of families below poverty line, percent receiving public assistance, percent unemployed, percent female-headed households, and percent under the age of 18. This scale

*Analytic Strategy*

In the PHDCN Community Survey, the participants are nested within each neighborhood cluster, which means that the data include individuals who are clustered within similar surroundings and environmental conditions. Analyses utilizing single-level modeling strategies are therefore inappropriate because these assume that the variance between individuals is constant, and that although individuals are nested within similar conditions they differ at random. It is necessary, therefore, to account for this clustering to address any violation of independent error terms across neighborhoods (Raudenbush and Bryk, 2002). Because my focus in the current study is how neighborhood conditions affect violence and victimization, the focus of my analyses will be on the between-neighborhood (level 2) variation.

A multilevel research design will allow an examination of neighborhood-level characteristics and the contextual effects of violence and victimization. Hierarchical linear modeling (HLM) is appropriate for the current analyses for several reasons. In traditional techniques such as ordinary least squares (OLS) regression, a critical assumption is independence of error terms. However, in the current sample it is at least probable that individuals nested within the same neighborhood clusters will have similar responses. Therefore, if OLS regression were used in the current study there would be a risk of violating the assumption of independent error terms and underestimating standard errors (Bryk and Raudenbuch, 1992; Ulmer and Johnson, 2004). HLM is also useful because it adjusts the degrees of freedom to the number of level-2 units (in this case, the

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mirrors scales of concentrated poverty that have been constructed to examine PHDCN neighborhood clusters in prior research (Kirk and Matsuda, 2011; Sampson et al., 1997).

342 neighborhood clusters as opposed to the 7,739 participants). HLM will allow the current project to model individual-level characteristics and neighborhood-level characteristics, while taking into account within- and between-neighborhood variation. The current project uses HLM 6.0 to conduct all multilevel modeling analyses. Hierarchical linear modeling is chosen because both perceived violence and victimization risk are continuous variables. The model follows a normal distribution of the outcome variable.

The general form of the two level linear model is as follows:

$$Y_{ij} = \beta_{0j} + \beta_{1j}\left(X_{1ij} - \bar{X}_1\right) + \cdots + \beta_{kj}(X_{kij} - \bar{X}_k) + r_{ij}, \text{ where} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_1 + \cdots + \gamma_{0_m}W_m + u_{0j}, \quad (2)$$

$$\beta_{1j} = \gamma_{10} + u_{1j}, \text{ and} \quad (3)$$

$$\beta_{kj} = \gamma_{k0} + u_{kj} \quad (4)$$

Equation 1 is the level-one model which includes the vector of individual-level characteristics. Grand-mean centering is used given the interest in the current study on contextual factors to avoid constraining the neighborhood-level contextual differences unnecessarily (Johnson and Ulmer, 2004). Equations 2 through 4 demonstrate the neighborhood-level analyses, where all level 2 predictors are used to predict the level 1 intercept ($\beta_{0j}$). Error terms are included for both the individual level ($r_{ij}$) and the neighborhood level ($u_{ij}$).

When examining perceived violence, each model in the analysis assumes a normal distribution of the outcome variable. The results will be discussed in the following chapter, and the analyses will proceed in a series of three steps. The first step shows the descriptive results, highlighting the inter-neighborhood variations. The second

step is a presentation of the unconditional model, which will show there is sufficient inter-neighborhood variation to warrant multilevel modeling. And the third and final step is the contextual analysis, examining perceived violence and victimization and the effect of neighborhood conditions. To examine whether the relationship between gentrification and crime is moderated by collective efficacy and perceived neighborhood change, interaction terms will be included in the final models.

The following chapter will also discuss the results of the analysis of spatial displacement effects. This section utilizes data from the same sources, and the analytic strategy and results for this analysis are presented at the end of Chapter Seven.

# CHAPTER SEVEN RESULTS: CONTEXTUAL AND DISPLACEMENT EFFECTS

The following chapter presents the results of the analyses. First the analyses examining the first three research hypotheses pertaining to gentrification's relationship to crime and the possibility of contextual effects of collective efficacy and perceived neighborhood change will be presented. After outlining the descriptive statistics and zero-order correlations between neighborhood-level variables, this chapter will examine multilevel models aimed at addressing the research hypotheses concerning the link between gentrification, crime, and other contextual factors. This will be followed by an examination of the fourth research hypothesis, pertaining to spatial displacement effects.

Table 3 displays the descriptive statistics for the sample, which provide preliminary evidence for inter-neighborhood variation. The sample is 59 percent female, with an average age of 42.7 years. The same is predominantly African American (40 percent) and the respondents had spent an average of 10.39 years at their current address at the time of the survey. Approximately 33.4 percent of the respondents had lived in their neighborhood for less than five years. This is significant because it reveals that the majority of the respondents to the PHDCN survey were residents who were living in their neighborhoods before the measures of gentrification in each neighborhood cluster began. In other words, the majority of the survey's participants were likely not 'gentrifiers' to the neighborhood.

| Table 3. Descriptive Statistics for Study Variables, PHDCN Community Survey. 1994-95 | | | | | |
|---|---|---|---|---|---|
| | **N** | **Mean** | **S.D.** | **Min** | **Max** |
| ***Dependent Variable*** | | | | | |
| Perceived Violence | 7,739 | 2.02 | 0.41 | 1.2739 | 3.3104 |
| Violent Victimization | 7,739 | 1.67 | | | |
| ***Individual-Level Variables (N=7,739)*** | | | | | |
| Female | | 0.59 | 0.49 | 0 | 1 |
| African American | | 0.40 | 0.49 | 0 | 1 |
| White | | 0.28 | 0.45 | 0 | 1 |
| Other | | 0.08 | 0.48 | 0 | 1 |
| Latino | | 0.25 | 0.43 | 0 | 1 |
| Age | | 42.66 | 16.72 | 17 | 100 |
| Socio-economic index | | 44.26 | 18.07 | 17 | 97 |
| Years at Address | | 10.39 | 11.97 | 0 | 81.5 |
| ***Neighborhood-Level Variables (N=342)*** | | | | | |
| Hispanic Neighborhood (70%+) | | 0.10 | | 0 | 1 |
| White Neighborhood (70%+) | | 0.18 | | 0 | 1 |
| Black Neighborhood (70%+) | | 0.55 | | 0 | 1 |
| Mixed Neighborhood | | 0.17 | | 0 | 1 |
| Gentrification | | 0.35 | 0.29 | 0.06 | 1 |
| Collective Efficacy | | 3.54 | 0.90 | 1.03 | 4.99 |
| Perceived Neigh. Change | | 1.94 | 1.41 | 0.00 | 4.96 |

The variation in the neighborhood-level variables provides preliminary evidence that there is between-neighborhood variation, but this will be evaluated with unconditional models to determine whether or not this variation is significant enough to warrant multilevel modeling techniques. For example, while the average score on gentrification scale was 0.35, neighborhoods ranged from 0.06 to 1.0. Similarly, for the variables capturing collective efficacy and perceived neighborhood change, there is considerable range in the scores across neighborhoods on both of these measures. There is also variability in the composition of these neighborhoods; the majority (55 percent) of neighborhoods are predominantly African American, but the remaining neighborhoods

are split between white (18 percent), Hispanic (10 percent), and Mixed neighborhoods without one predominant racial-ethnic group (17 percent).

Table 4 shows the zero-order correlations between predictors at the neighborhood-level being used in the study. These results provide valuable preliminary evidence for associations between the key variables of interest.

**Table 4. Neighborhood-Level Zero-Order Correlation Matrix**

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Perc. Neigh. Change | -- | | | | | |
| 2. African American NC | 0.548*** | -- | | | | |
| 3. Latino NC | 0.120 | -0.785*** | -- | | | |
| 4. Mixed NC | 0.489** | -0.682** | -0.473** | -- | | |
| 5. Collective Efficacy | -0.645*** | -0.376** | -0.175* | 0.348* | -- | |
| 6. Gentrification | 0.621** | 0.501** | -0.242* | 0.627** | -0.189* | -- |

N = 342 *p < .05; **p < .01; ***p < .001.

Results indicate there is a strong negative association between perceived neighborhood change and collective efficacy ($r = -.645$, $p < .001$). This suggests that neighborhoods with high levels of threat and dissatisfaction with the changes to their neighborhood are less likely to engage in collective efficacy – at least as it relates to violence and crime. This finding is consistent with previous research examining the effects of social control forces and perceived threat on crime at the neighborhood level (King and Wheelock, 2007). There is also a strong positive association between perceived neighborhood change and gentrification ($r = .621$, $p < .01$), which indicates that in many neighborhoods where gentrification is happening there are feelings of dissatisfaction, threat, and resentment towards the changes.

The results also indicate that gentrification is more likely in predominantly African American neighborhoods ($r = .548$, $p < .001$) or in neighborhoods with no racial-ethnic group comprising the majority ($r = .489$, $p < .01$), but there is no significant association between gentrification and Latino neighborhoods ($r = .120$). These findings complement prior research (Velez, Lyons, and Boursaw, 2012) and archival newspaper coverage of the gentrification process as it unfolded in Chicago during the 1990s; several newspaper stories discussed the rapid change to traditionally African American areas, and noted that the neighborhoods that changed first were those where there was already a more racially mixed population (Chase, 1998; Lauerman, 1992; Martin, 1996). Neighborhoods that are predominantly Latino ($r = -.175$, $p < .05$) or African American ($r = -.376$, $P < .01$) are less likely to have high collective efficacy scores, but high collective efficacy scores are significantly more likely in mixed neighborhoods ($.348$, $p < .05$). Additionally, there is a modest but significant negative association between collective efficacy and gentrification ($r = -.189$, $p < .05$).

*Contextual Effects*

The multilevel models used in the current analyses are built in a series of steps, the first being the creation of unconditional models. The unconditional models of perceived violence and of victimization are necessary to show whether or not there is significant inter-neighborhood variation in perceived violence and in victimization to warrant further multilevel analysis (Luke 2004). These models have no predictors, and only include the dependent variables.

| **Table 5. Unconditional HLM Models of Perceived Violence and Victimization** | | | | | |
|---|---|---|---|---|---|
| *Perceived Violence* | | | | | |
| **Fixed Effects** | **b** | **SE** | **T-Ratio** | **Df** | **P-value** |
| Intercept, B0 | | | | | |
| Intercept, G00 | 1.862 | 0.0702 | 26.507 | 341 | 0.000 |
| **Random Effects** | **Var** | **SD** | **χ-sq.** | **Df** | **P-value** |
| Level 2, U0 | 0.35922 | 0.59935 | 2886.1105 | 341 | 0.000 |
| | | | | | |
| *Victimization* | | | | | |
| **Fixed Effects** | **b** | **SE** | **T-Ratio** | **Df** | **P-value** |
| Intercept, B0 | | | | | |
| Intercept, G00 | 1.574 | 0.0814 | 28.365 | 341 | 0.000 |
| **Random Effects** | **Var** | **SD** | **χ-sq.** | **Df** | **P-value** |
| Level 2, U0 | | | | | |
| Level 1, R | 0.47811 | 0.68432 | 2944.235 | 341 | 0.000 |

The fact that there is a significant variance component (b = 1.862, p < .001) at level two for the outcome indicates that multilevel modeling may be useful in this study to identify neighborhood-level variations in perceived violence. Similarly, the unconditional model including victimization also includes a significant variance component (b = 1.574, p <.001), which indicates that throughout the city of Chicago there is meaningful variation in the level of victimization by neighborhood cluster.

To examine the effect of gentrification, collective efficacy, and perceived neighborhood change on crime, a series of multilevel models are estimated. The initial model incorporates individual-level predictors, so that the effects of these variables can be controlled to examine the contextual (neighborhood-level) effects. The model is then expanded iteratively with the addition of gentrification, concentrated poverty, racial-ethnic composition variables, collective efficacy, and perceived neighborhood change. To examine the possibility of collective efficacy and perceived neighborhood change moderating the effect between gentrification and crime, interaction terms are introduced.

When adding interaction terms to the model, an increase in the variance that is explained (r-squared) and a significant effect of the interaction term will be used to evaluate whether moderation has occurred. If the original predictors are still significant after inclusion of the interaction terms, this will suggest that these predictors still have a direct effect (Sharma, Durand, and Gur-Arie, 1981). In this way, it will be possible to determine whether the strength and direction of the relationship between gentrification and crime depends on either the level of collective efficacy or the level of perceived neighborhood change perceived in the neighborhoods. If the interaction terms have a significant effect, this will confirm the moderation relationship. If the significance of the perceived neighborhood change and collective efficacy variables are reduced and insignificant, it will suggest that these variables do not have a direct effect on crime, but are meaningful primarily for their interaction with gentrification processes.

To check for potential collinearity problems, variance inflation factors (VIF scores) were calculated for the level-two predictors. Statisticians have generally referred to VIF scores of 10 as the threshold above which problems of multicollinearity may arise. However, more recent scholars have challenged this rule of thumb, arguing that VIF scores as high as 40 do not automatically guarantee multicollinearity problems (O'Brien, 2007). As shown below, none of the VIF scores exceeded 11; therefore, potential problems interpreting coefficients are not thought to be an issue in these analyses.

| Variable | VIF Score |
|---|---|
| Latino NC | 2.83 |
| Black NC | 2.10 |
| Mixed NC | 2.51 |
| Concentration of poverty | 2.03 |
| Gentrification | 8.89 |
| Collective Efficacy | 8.08 |
| Perc. Neigh. Change | 7.75 |
| Gent x PNC | 10.74 |
| Gent x Collective Efficacy | 9.93 |

Model 1 in Table 6 reveals that there are significant differences in perceived violence and victimization by gender, racial-ethnic group, and by socioeconomic status. Similar to prior research (Kirk and Matsuda, 2011; Morenoff, Sampson, and Raudenbush, 2011), being disadvantaged ($b = -.345$ $p < .05$), male ($b = -1.879$, $p < .001$), and a member of a racial or ethnic minority ($b = 1.754$, $p < .001$) is associated with a heightened perception of violence and higher risk of victimization. Living more years at the current address was associated with a decreased perception of violence, but this relationship did not reach statistical significance ($b = -.212$). In addition, the relationship between age and perceived violence did not reach statistical significance, but it appears that higher levels of perceived violence and higher levels of victimization were reported by younger respondents ($b = -.312$). These results are supportive of the findings from prior literature that violence and victimization rates are higher amongst the young (Farrington, 1986; Stafford and Galle, 1984).

**Table 6. Multilevel Model of Perceived Violence and Victimization with Individual-Level Characteristics**

| | Model 1 (Perceived Violence) | | | Model 1 (Victimization) | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coefficient** | | **(SE)** | **Coefficient** | | **(SE)** |
| Intercept | 1.024 | *** | 0.085 | -1.878 | *** | 0.074 |
| *Individual-Level Variables (N=7,739)* | | | | | | |
| Female | -1.879 | *** | 0.165 | -1.764 | *** | 0.105 |
| African American | 1.754 | *** | 0.263 | 1.817 | *** | 0.274 |
| Other | -1.035 | * | 0.294 | -1.014 | † | 0.307 |
| Latino | 1.075 | *** | 0.260 | 1.021 | * | 0.213 |
| Age | -0.312 | | 0.064 | -0.299 | | 0.071 |
| Socio-economic index | -0.345 | * | 0.104 | -0.378 | * | 0.139 |
| Years at Address | -0.212 | | 0.078 | -0.243 | | 0.068 |

†p < .10; *p ≤ .05; **p ≤ .01; ***p ≤ .001

Table 7 displays the analyses using perceived violence as the outcome variable. In Model 2, which is displayed in Table 7, the primary neighborhood-level variable of interest was introduced (gentrification). For every additional increase in the level of gentrification on the scale, the level of neighborhood violence decreases by an average of .259, and this effect is statistically significant (b = .259, p < .01). This result provides an important initial examination of the overall relationship between gentrification and perceived violence; similar to prior research (O'Sullivan, 2005; Papachristos et al., 2011), these data suggest that neighborhoods experiencing gentrification also experience a significant decline in perceived violence. This effect is significant after controlling for the racial-ethnic composition of the neighborhood and the level of concentrated poverty in the neighborhood.

**Table 7. Hierarchical Linear Models of Perceived Violence**

| | Model 2 | | | Model 3 | | | Model 4 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Variables** | ***b*** | | **(SE)** | ***b*** | | **(SE)** | ***b*** | | **(SE)** |
| Intercept | 1.014 | *** | 0.088 | 1.018 | *** | 0.090 | 1.021 | *** | 0.089 |
| *Individual-Level Variables (N=7,739)* | | | | | | | | | |
| Female | -1.897 | *** | 0.142 | -1.853 | *** | 0.138 | -1.867 | *** | 0.211 |
| African American | 1.698 | *** | 0.234 | 1.742 | *** | 0.337 | 1.755 | *** | 0.286 |
| Other | -1.024 | ** | 0.317 | -0.980 | * | 0.301 | -0.984 | * | 0.304 |
| Latino | 1.107 | *** | 0.249 | 1.151 | *** | 0.243 | 1.162 | *** | 0.287 |
| Age | -0.246 | | 0.048 | -0.202 | | 0.056 | -0.238 | | 0.102 |
| Socio-economic index | -0.383 | * | 0.099 | -0.382 | * | 0.102 | -0.401 | * | 0.098 |
| Years at Address | -0.241 | | 0.077 | -0.230 | | 0.075 | -0.195 | | 0.077 |
| *Neighborhood-Level Variables (N=342)* | | | | | | | | | |
| Latino NC | 1.249 | † | 0.745 | 1.127 | | 0.731 | 1.121 | | 0.789 |
| Black NC | 1.568 | ** | 0.588 | 1.560 | ** | 0.426 | 1.534 | ** | 0.475 |
| Mixed NC | 1.372 | * | 0.476 | 1.278 | * | 0.385 | 1.272 | * | 0.362 |
| Concentration of poverty | 0.211 | * | 0.144 | 0.126 | | 0.137 | 0.123 | | 0.135 |
| Gentrification | -0.259 | ** | 0.342 | -0.197 | ** | 0.296 | -0.107 | | 0.301 |
| Collective Efficacy | | | | 0.075 | | 0.145 | 0.080 | | 0.133 |
| Per Neigh Change | | | | 0.530 | ** | 0.217 | 0.186 | † | 0.223 |
| Gent x PNC | | | | | | | 0.374 | * | 0.314 |
| Gent x Collective Efficacy | | | | | | | -1.425 | ** | 0.392 |
| Proportion of Variance Explained | | | 0.35 | | | 0.40 | | | 0.52 |

†p < .10; *p ≤ .05; **p ≤ .01;
***p ≤ .001

Model 3 in Table 7 introduces both the collective efficacy and perceived neighborhood change factors at the neighborhood level. In this model, the negative correlation between gentrification and perceived violence remains significant, but the effect size has been reduced (b = -.197, p <.01). Perceived neighborhood change has a positive and significant association with perceived violence (b = .530, p < .01), suggesting that the level of violence in a neighborhood increases by .530 for every increase in the level of perceived neighborhood change. While few studies have examined perceived neighborhood change from the specific context of threat as a

response to gentrification, this result is consistent with prior research findings that areas with high levels of perceived neighborhood change from outside groups tend to have higher rates of crime (King and Wheelock, 2007; Levine and Campbell, 1972). The relationship between a neighborhood's average level of collective efficacy and perceived violence is not significant (b = .075). Prior research has generally found that collective efficacy is negatively associated with crime (Pratt and Cullen, 2005). However, these findings do complement recent research findings which indicate that the effect of collective efficacy on crime is not significant once other neighborhood-level contextual factors are included (Kirk and Matsuda, 2011).

Interaction terms are introduced in Model 4 of Table 7 to examine the interaction between the key variables of interest with gentrification. Perceived neighborhood change and collective efficacy were each examined for potential interaction effects with gentrification. Both moderators were included in the model to examine whether or not any direct effects remained after inclusion of the interaction terms. Model 4 suggests that the interaction between gentrification and perceived neighborhood change results in a positive and significant association with violence (b = .374, P <.05). Results reveal that the relationship between gentrification and perceived violence varies depending on the level of perceived neighborhood change in neighborhoods. An interaction between gentrification and increasing perceived neighborhood change is associated with a significant increase in levels of violence. The interaction term included to examine whether there is an interaction between gentrification and collective efficacy suggests a significant negative association (b = -1.425, p <.01). It appears from this result that

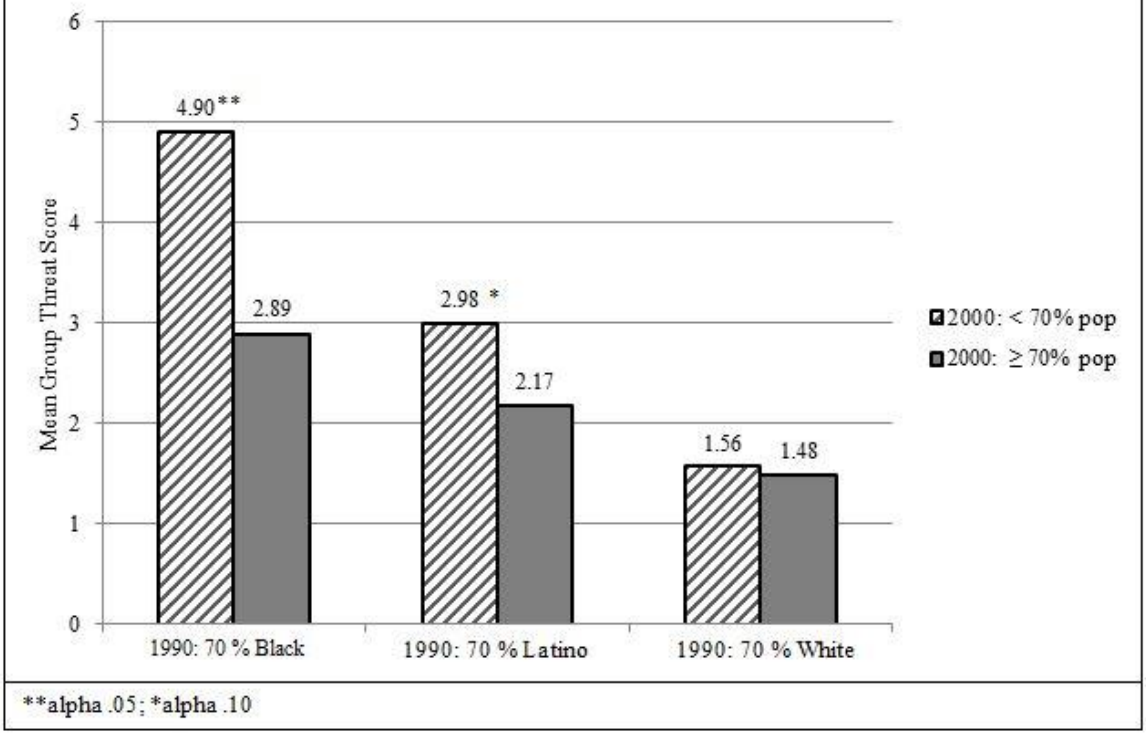
collective efficacy in gentrifying neighborhoods may strengthen the negative association with violence.

The fact that the interaction terms suggest a different association between the factors and perceived violence seems to complement data from the Table 4 correlation matrix; it appears that there is not much overlap between neighborhoods high in collective efficacy and high in perceived neighborhood change ($b = -.645$, $p < .001$), so the fact that these contextual factors produce different effects with gentrification on perceived violence indicates that the way in which gentrification impacts perceived violence is highly dependent on neighborhood contextual factors. It is informative that these divergent contextual factors have varying effects on areas experiencing gentrification. Collective efficacy appears to work as a protective factor, whereas when gentrification is accompanied by high levels of perceived neighborhood change, this increases a neighborhood's level of violence.

In Chapter Five, it was suggested that perceived neighborhood change may increase when a gentrifying neighborhood experiences a significant shift in the racial or ethnic profile of the area. Supplementary analysis offers support for this by examining levels of perceived neighborhood change in neighborhoods whose racial-ethnic composition saw a change from the beginning to the end of the decade. To examine this, the neighborhoods scoring in the $75^{th}$ percentile or higher on the gentrification scale were included, which resulted in 87 clusters for analyses scoring from 0.58 to 1.0 on the scale. Out of all 87 neighborhoods, 61 percent were neighborhoods that were predominantly African American in 1990 ($\geq 70\%$). Ten percent were neighborhoods that were predominantly white, and 6 percent were predominantly Latino neighborhoods. If

perceived neighborhood change is indeed a factor that is driven by racial-ethnic characteristics, we would expect higher levels of perceived neighborhood change in neighborhoods that saw a dramatic compositional change from 1990 to 2000. Figure 5 presents data which support this claim, showing variation in perceived neighborhood change by change in the racial-ethnic profile of the population.

Figure 5. Variation in Perceived Neighborhood Change Score in Gentrifying Neighborhoods by Change in Racial Composition from 1990 - 2000 (N=87)




**alpha .05; *alpha .10

For gentrifying neighborhoods that began the decade predominantly African American, those with a decline in the proportion of African Americans had significantly higher perceived neighborhood change scores than those where the neighborhood remained predominantly African American; a one-tailed t-test at alpha .05 yielded a p-value of .032. For gentrifying neighborhoods that began the decade predominantly Latino, those which were no longer predominantly Latino by the end of the decade had

higher perceived neighborhood change scores than those which remained predominantly Latino, but this difference was only marginally significant (p-value .091). For gentrifying white neighborhoods, those remaining predominantly white were not significantly different than those whose racial profile changed in their level of perceived neighborhood change (p-value .621).

Examining the results using victimization as the outcome variable, similar patterns emerge. Similar to the analyses above, Table 8 reveals that the significance of gentrification goes away once the interaction terms are included in the model. While gentrification initially had a significantly negative association with victimization, this effect diminishes and is no longer significant once the moderation variables are included. When gentrification interacts with collective efficacy, this has a significant and negative effect on victimization; this strengthens the conclusions drawn from analyses with perceived violence, in both cases, it seems that gentrifying neighborhoods with higher levels of collective efficacy have lower levels of victimization. Additionally, gentrification and perceived neighborhood change interact and are significantly associated with increases in victimization. Therefore, similar to prior results, gentrifying neighborhoods with higher levels of perceived neighborhood change have a higher risk of victimization. Since perceived violence and victimization are measuring a wide range of perceived violence and victimization, it is notable that the interaction variables have similar effects on both outcomes.

**Table 8.** Hierarchical Linear Models of Victimization

| | Model 2 | | | Model 3 | | | Model 4 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Variables** | ***b*** | | **(SE)** | ***b*** | | **(SE)** | ***b*** | | **(SE)** |
| Intercept | -1.895 | *** | 0.048 | -1.887 | *** | 0.081 | -1.898 | *** | 0.092 |
| *Individual-Level Variables (N=7,739)* | | | | | | | | | |
| Female | -1.657 | *** | 0.134 | -1.613 | *** | 0.141 | -1.641 | *** | 0.207 |
| African American | 1.588 | *** | 0.223 | 1.632 | *** | 0.322 | 1.659 | *** | 0.302 |
| Other | -1.011 | ** | 0.407 | -0.967 | * | 0.247 | -0.986 | * | 0.311 |
| Latino | 1.205 | *** | 0.202 | 1.249 | *** | 0.289 | 1.244 | *** | 0.284 |
| Age | -0.213 | | 0.044 | -0.169 | | 0.061 | 1.238 | | 0.121 |
| SES index | -0.452 | * | 0.107 | -0.451 | * | 0.121 | -0.433 | * | 0.097 |
| Years at Address | -0.310 | | 0.075 | -0.299 | | 0.068 | -0.301 | | 0.083 |
| *Neighborhood-Level Variables (N=342)* | | | | | | | | | |
| Latino NC | 1.201 | † | 0.778 | 1.109 | | 0.747 | 1.095 | | 0.774 |
| Black NC | 1.687 | ** | 0.543 | 1.521 | ** | 0.432 | 1.520 | ** | 0.402 |
| Mixed NC | 1.443 | * | 0.438 | 1.275 | * | 0.375 | 1.264 | * | 0.346 |
| Concentration of poverty | 0.104 | † | 0.137 | 0.103 | | 0.146 | 0.095 | | 0.124 |
| Gentrification | -0.275 | ** | 0.311 | -0.185 | ** | 0.304 | -0.178 | | 0.287 |
| Collective Efficacy | | | | 0.069 | | 0.143 | 0.071 | | 0.135 |
| Perceived Neigh Change | | | | 0.602 | ** | 0.211 | 0.163 | † | 0.261 |
| Gentrification x PNC | | | | | | | 0.373 | * | 0.319 |
| Gentrification x CE | | | | | | | -1.565 | ** | 0.395 |

†p < .10; *p ≤ .05; **p ≤ .01; ***p ≤ .001

These results offer partial support for the idea that perceived neighborhood change is higher when gentrification causes the racial-ethnic composition of a neighborhood to significantly change. For gentrifying neighborhoods that began predominantly composed of racial-ethnic minorities, changes to this composition were associated with higher levels of perceived neighborhood change. Given that the perceived neighborhood change measure specifically focuses on feelings related to population change, it is reasonable to assume that threat and changing racial-ethnic dynamics are linked. These findings are validated with both outcome measures, and

complement prior research which has found that group threat is closely linked to changes in the racial-ethnic composition, however the majority of prior research has examined this from the perspective of predominantly white neighborhoods with an increasing presence of racial-ethnic minorities (Bobo, 1988; Green et al., 1998). This study presents the novel finding that these dynamics are similar when other racial-ethnic groups are the majority in an area. The limitations and policy implications of these findings will be discussed in Chapter Eight.

*Conclusions – Revisiting First Three Research Hypotheses*

Hypothesis one in Chapter Six suggested that there would be an overall negative association between gentrification and perceived violence. Results from the multilevel modeling analyses provide partial support for that hypothesis. Prior to examining any moderating effects, results suggest that gentrifying neighborhoods experience less overall violence and victimization. However, the direct effect of gentrification on perceived violence is no longer significant once the interaction terms are included. Hypotheses two and three each predicted that gentrification would interact with collective efficacy and perceived neighborhood change at the neighborhood level and result in varying associations with perceived violence. Results from the multilevel modeling analyses suggest support for these hypotheses. Gentrification and perceived neighborhood change did interact and result in a positive association with violence; this suggests that when neighborhoods are experiencing gentrification but are dissatisfied and threatened by the changes to their neighborhood, this is associated with an increase in neighborhood

violence. There was also a significant negative association between collective efficacy and gentrification on violence, suggesting that in cohesive neighborhoods who exercise trust and social control, gentrification results in a decrease in neighborhood violence. The limitations and implications of these results are discussed in detail in chapter nine.

*Analyses of Displacement Effects*

Prior research on gentrification and crime has suggested that displacement of criminal activity is one potential outcome of this form of neighborhood change, although authors have noted that the accurate measurement of displacement effects have yet to be undertaken (Kirk and Laub, 2010). There are several methodological challenges between attempting an analysis of crime displacement due to a program or process. Formally defined, displacement refers to "the relocation of crime from one place, time, target, offense, or tactic to another" as a result of some initiative (Guerette, 2009:1). When discussed in the context of the implementation of intervention strategies, displacement has been characterized as an unintended negative consequence of efforts to reduce crime (Eck, 1993; Guerette and Bowers, 2009). In the current study, spatial displacement is being examined to determine whether or not offenders seem to switch from targets in gentrification areas to targets in adjacent neighborhoods that are not experiencing gentrification.

The logic behind predicting a spatial displacement effect has been addressed within opportunity theory and environmental criminology. While classic work in criminology has assumed that opportunities to commit crime are ubiquitous, and offenders are uneasily deterred (Sutherland, 1947), environmental criminological theory

has introduced compelling arguments to challenge these assumptions. Several scholars have noted that crime is not evenly distributed throughout areas, but is instead clustered into particular locations (Bursik and Webb, 1982; Weisburd et al., 1992; Wortley and Mazerolle, 2013). In his work developing situational crime prevention theory, Clarke and his colleagues have argued that most traditional criminology theories have a dispositional bias; by focusing so intently on the root causes of criminal behavior, they have neglected to account for the environmental and situational conditions within which crime tends to arise (Clarke, 1980, 1997; Clark and Mayhew, 1980). The issue of displacement due to change in opportunities has been examined by environmental criminologists, and the results generally fail to find displacement effects. Clark and Mayhew (1988) examined the detoxification of domestic gas in homes and the rate of suicides in England and Wales. In this study, they observed that when the opportunity to commit suicide using gas in the home (i.e. in an oven) was reduced due to a change in the composition of domestic gas, the result was an overall reduction in the suicide rate, and not an increase in suicide using other methods (Clarke and Mayhew, 1988).

Several scholars have followed this research, and found evidence against crime displacement by type (Clarke and Weisburd, 1994; Cornish and Clarke, 1987). Additionally, Weisburd and colleagues (2006) have shown that when hot spots policing initiatives are implemented at particular intersections, crime does not seem to spatially displace, but rather the benefits of the increased police presence are enjoyed in the surrounding blocks. It remains unknown, however, whether neighborhood-level processes that are more gradual and over larger areas can cause any spatial displacement effects. If gentrification makes crime less possible or more risky in one neighborhood,

criminal activity may not decline but simply relocate to a nearby neighborhood with conditions and opportunities similar to the original neighborhood prior to changes.

In the current study, Hypothesis Four predicts that there will be evidence of a spatial displacement effect from the gentrifying neighborhoods into adjacent areas. Both environmental criminological theory and prior research suggest that spatial displacement does not take place, and this serves as the basis for the current prediction. In the current study, having an awareness of the physical location of each area undergoing gentrification makes it possible to conduct an exploratory investigation into the possibility of a spatial displacement effect. The prior chapter demonstrated that overall there is a negative relationship between gentrification and perceived violence, although this effect is moderated by other neighborhood-level forces. In the current chapter, comparisons will be drawn between gentrifying areas and those adjacent to them, to ascertain whether or not any evidence of spatial displacement can be identified.

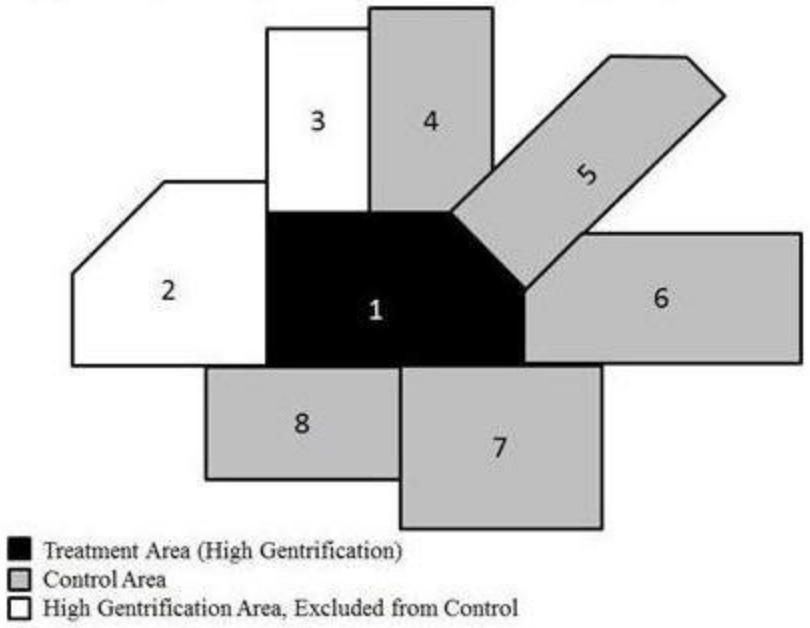
In the prior chapter, gentrification was measured as a continuous variable. However, in the current chapter only those neighborhoods scoring in the 90$^{th}$ percentile or higher on this scale will be discussed.[22] A binary variable was created for identification, resulting in 34 clusters out of the original 342. For the purposes of the current analysis, these are the 'gentrification' areas. If these gentrification areas are thought of as 'treatment' areas, the neighborhoods directly surrounding them can be considered the 'control' areas. There is some natural clustering of gentrification neighborhoods in the city; out of these 34 clusters, all but two of them are adjacent to

[22] The gentrification scale ranged from 0 – 1, and neighborhoods in the 90$^{th}$ percentile scored approximately 0.75 or higher. The logic behind restricting the current analysis to only those in the 90$^{th}$ percentile was to capture neighborhoods that had the most potential for rapid change from 1990 to 1995.

another gentrification cluster. When this occurred in the analysis, the control area excluded the adjacent gentrification cluster. The logic behind this decision is based on the general assumptions of spatial displacement effects. It is assumed that if gentrification causes the displacement of perceived violence to adjacent areas, this perceived violence will be displaced to areas with conditions reminiscent of the original area prior to gentrification, not adjacent areas undergoing similar changes. Going back to the theoretical framework from environmental criminology, perceived violence would be expected to move to an area where the opportunities and situational contexts are similar to the previous conditions (Clarke, 1997). For these reasons, the control areas only contain adjacent clusters without significant gentrification. To calculate rates and averages across each control area, their results were weighted by the population in each cluster to create measures of the outcomes across the entire control area.

Figure 6 offers a visual depiction of treatment and control areas. In this figure, gentrifying neighborhood cluster 1 is the dark central cluster (the 'Treatment Area'). On the gentrification scale (with scores ranging from 0 to 1) this cluster's value was 0.98 indicating a high level of gentrification. The control area contains the neighborhood clusters directly adjacent to this cluster (clusters 4 through 8), and in this figure they are shaded grey. On the gentrification scale, their average score was 0.38 (range 0.34 to 0.41). There are two adjacent clusters (clusters 2 and 3) that are identified as treatment clusters; they are shaded in white and are not included in the calculation of the control area for cluster 1. On the gentrification scale, cluster 2 scored 0.97 and cluster 3 scored 0.79.

Figure 6: Identification of treatment and control areas




For each of the 34 neighborhood clusters with high gentrification, two different outcome variables are examined: the logged homicide rates from 1990 and 1995, and the measure of perceived violence in neighborhoods in the 1994-95 and 2001-02 Community Surveys.[23] Both of these outcome measures have their limitations, which will be discussed within the analysis, leaving this examination of spatial displacement effects exploratory. If similar results are achieved with both measurements, this could strengthen confidence in their results. In the future, however, it will be beneficial to examine displacement effects with other outcome variables that have higher reliability.

If the spatial displacement of crime is in fact due to a change in the opportunity structures in an area, but adjacent areas have comparable opportunity structures, it is

[23] The logged homicide rate is used to improve the fit of the model; homicide rates are not normally distributed (Osgood 2000).

possible that prospective offenders will take advantage of these nearby opportunities that are comparable to those in the original area. In other words, crime may displace because the opportunities available in adjacent areas are viewed as more appealing than the opportunities available in the gentrifying location. For each treatment area, the areas designated as control areas shared some similar initial characteristics, but without the promise of gentrification; they were disadvantaged areas but did not possess some of the appealing elements which made their adjacent neighbors primed for gentrification. In the clusters shown above in Figure 6, for example, clusters 4 through 8 had low housing values, low median incomes, and low numbers of eligible residents with advanced degrees. They did not, however, have good L train access, appealing large housing units for conversion, or a large presence of historic architecture.

*Analytic Strategy*

To assess the possibility of displacement effects, difference-in-differences estimation is utilized. This technique captures the difference in outcomes across a time span for treatment and control groups, and then compares those differences (Ashenfelter and Card, 1985; Heckman et al., 1997). The construction of the difference-in-differences estimation is shown in Table 9

Table 9. Estimation of Difference-in-Differences

| | **1990** | **1995** | **Difference** |
|---|---|---|---|
| **Treatment** | $Y_{t1}$ | $Y_{t2}$ | $\Delta Y_t = Y_{t2} - Y_{t1}$ |
| **Control** | $Y_{c1}$ | $Y_{c2}$ | $\Delta Y_c = Y_{c2} - Y_{c1}$ |
| **Difference** | | | $(\hat{\delta}_1)$ $\Delta\Delta Y = \Delta Y_t - Y_c$ |

In the current analysis, values of $\widehat{\boldsymbol{\delta}}_{\boldsymbol{1}}$ that are closer to zero suggest that there is little difference between the changes in logged homicide rates for the treatment and control areas. Positive values will indicate that there was a larger change in the control areas, and negative values will indicate that there was a larger change in the treatment areas. The results of this estimation for all 34 high gentrification (treatment) areas are displayed in Appendix B. The percentage change is also displayed for the treatment and control areas; for example, in treatment cluster 1 the logged homicide rate decreased by 75.8 percent, and in control area 1 homicide decreased by 35 percent. The means used in the difference-in-differences estimation are shown below in Table 10.

Table 10. Estimation of Difference-in-Differences Calculations

| | **1990** | **1995** | **Difference** |
|---|---|---|---|
| **Treatment** Mean logged homicide rate | 3.2946 | 0.5388 | -2.7558 |
| **Control** Mean logged homicide rate | 3.3832 | 0.3668 | -3.0164 |
| **Difference** | | | $(\widehat{\boldsymbol{\delta}}_{\boldsymbol{1}})$ 0.2606 |

The difference-in-differences $(\widehat{\boldsymbol{\delta}}_{\boldsymbol{1}})$ value is 0.2606. This number is positive, which suggests that the change in homicide rates was slightly larger in the control areas, but it is fairly close to zero. To determine if there was significant difference in the declines in the treatment group compared to the control group, a one tailed t-test was used at alpha 0.05. With a p-value of 0.162, it is impossible to reject the null hypothesis; the changes in logged homicide rates between the treatment and control groups are not significant.

These results are contrary to the predictions of Hypothesis Four; it does not seem that gentrification causes a significant spatial displacement effect because the changes between areas gentrifying and those around them are similar. Exclusively utilizing homicide rates, however, is not a sufficient way to determine displacement effects. As a rare event, the rates in each neighborhood are extremely small, and changes in the homicide rate may be due to a variety of causes. Scholars have also found that gang-related homicides spread in an "epidemic-like process of social contagion" (Papachristos, 2009: 74) and so assuming that events can simply be spatially displaced may not be relevant or appropriate. Therefore, using similar methodology, alternative measurements of perceived violence are examined in the following section to further investigate the possibility of displacement effects.

To supplement these results, the level of perceived violence in the 2001-02 Community Survey was compared to the level in the 1994-95 survey for these 34 neighborhoods and their control areas. As stated in Chapter Seven, the 2001-02 data lacked the sample size and reliability to be used in the contextual analyses of Chapter Seven; there were several neighborhoods where the sample size was extremely low. However, because this outcome measure is a continuous scale measuring average level of perceived violence, it does offer more between-neighborhood variation. Therefore, it will be noteworthy if the results are comparable to those found with the logged homicide rates. Because the control and treatment areas were created using information from the 1990 Census and CTA data, this analysis allows for an examination of whether violence was significantly displaced from the middle to the end of the decade.

| Table 11. Estimation of Difference-in-Differences, PHDCN Perceived Violence Measure | | | |
|---|---|---|---|
| | **1994-95** | **2001-02** | **Difference** |
| **Treatment** Mean Perceived Violence | 2.0899 | 2.0775 | -0.0124 |
| **Control** Mean Perceived Violence | 2.0554 | 1.9422 | -0.1132 |
| **Difference** | | | $(\widehat{\boldsymbol{\delta}}_{\mathbf{1}})$ 0.1008 |

The result of this difference-in-differences estimation is displayed in Table 11. A t-test with alpha 0.05 reveals that these differences are not significant with a p-value of 0.275. Once again, this supports the idea that spatial displacement effects are not observed. Whether measuring changes in perceived violence or homicide, there is no evidence that the gentrification process leads to a displacement of perceived violence to nearby areas. One potential explanation as to why no evidence of spatial displacement is observed, could be the fact that some of these adjacent areas may have characteristics of what are known as 'buffer neighborhoods,' or neighborhoods that are located between affluent areas and areas experiencing gentrification (Duncan et al., 2013). These so-called buffer neighborhoods may not have appealing opportunity structures, and therefore would not be appealing neighborhoods for crime to emerge as a result of displacement.

*Conclusions – Revisiting Fourth Research Hypothesis*

The fourth research hypothesis for this project predicted that there would be evidence of a displacement effect between gentrifying areas and adjacent areas not experiencing these changes. This chapter has found results which do not support this hypothesis; measuring changes throughout the decade it seems that perceived violence

did not displace from gentrifying to adjacent areas. While these results may be considered complementary to the larger body of criminology research that has rejected displacement hypotheses, there are several important limitations to the current analysis which make these results preliminary. First, both outcome variables have limitations which may cause the outcomes to be extremely sensitive to changes in the data. The logged homicide rate examines an extremely rare form of violent crime, observing that a homicide rate had a statistically significant change may not be indicative of a meaningful change. We also have evidence that homicides are often retaliatory in nature, where one individual is killed and then another individual is killed in a nearby area as a form of revenge (Kirk and Papachristos, 2011). This makes it possible that the homicide rates are not independent between neighborhood clusters. Second, the data measuring perceived violence in the 2001-02 Community Survey are limited by an extremely small sample size. While there were approximately 3,000 participants throughout the city, in some neighborhood clusters there are less than 10 participants. This compromises the reliability of these data, and makes drawing comparisons between measures collected in the 1994-95 survey and 2001-02 extremely limited.

The fact that both methods of examining a displacement effect yielded similar results is encouraging for the hypothesis that displacement does not occur. Additionally, the current project has outlined a measurement technique to capture displacement effects of perceived violence across neighborhoods which may be valuable for future projects attempting to examine the spatial displacement of perceived violence during gentrification. However, the limitations affecting the current conclusions make generalizations from these results impossible. Much more research is needed if we wish

to say with confidence that displacement does not occur when gentrification processes unfold.

# CHAPTER EIGHT DISCUSSION AND CONCLUSIONS

As the twenty-first century progresses, the urban landscape continues to rapidly change. In the early 20th century human ecologists crafted an understanding of urban development and change which no longer characterizes the modern metropolis. It can no longer be assumed that there is a consistent outward migration from urban centers for improved living conditions (Park, 1936; Park and Burgess, 1925). Therefore, it is incumbent upon all scholars with an interest in the importance of neighborhood-level forces to examine how modern changes to neighborhood conditions impact crime. Gentrification continues to enter into the public discourse throughout the country. It is doubtful that gentrification will cease, and the tensions surrounding this process remain high. While many neighborhoods in Chicago experienced gentrification in the 1990s, the process continues, and elicits powerful reactions from the residents experiencing the changes. In January of 2015, for example, anonymous protestors taped up signs (shown in the picture below) in front of a few coffee shops in the Chicago neighborhood of Pilsen to protest gentrification efforts that are changing the area.


As this process continues to be debated in the public discourse, is incumbent upon the field of criminology to continue to examine gentrification and how it interacts with neighborhood factors and crime. As gentrification remains an extremely polarizing topic, many are continuously asking the basic question, "Will gentrification make neighborhoods better?" The answer to this question may help to develop policies and strategies that can be put into place as such neighborhood transformations occur.

This dissertation has examined the relationships between gentrification, neighborhood contextual factors, and perceived violence, and has offered an explanation for the interaction of these factors, rooted in the traditions of criminological theory about informal social control and perceived neighborhood change. Prior research has established an association between gentrification and crime, and in the current study I attempted to propose mechanisms which may explain this relationship. I also offer a preliminary exploration of spatial displacement effects which may result from gentrification. The results provide evidence for a nuanced picture of the relationship

between gentrification, neighborhood forces, and perceived violence. Not unlike many conclusions in social science, when addressing the question of whether or not gentrification makes perceived violence better, the answer is, predictably, "Well, it depends."

*Research Findings*

There were two primary goals in constructing the first three hypotheses in this study. First, I hoped to provide complementary evidence for the overall negative association between gentrification and crime which has been established in the most recent research on the phenomenon (Papachristos et al., 2011; Velez, Lyons, and Boursaw, 2012). Second, I hoped to uncover neighborhood contextual factors which might moderate the overall relationship between gentrification and perceived violence; it has been suggested in prior research that such variation may exist, but this has received little empirical attention (Kirk and Laub, 2010). Support for my first three research hypotheses suggests a few conclusions. First, when all neighborhoods experiencing gentrification are examined together they do seem to have lower levels of violence and victimization. This result is consistent with prior research (O'Sullivan, 2005; Papachristos et al., 2011; Velez, Lyons, and Boursaw, 2012), and seems to suggest that, in the aggregate, neighborhoods that experience gentrification will experience less perceived violence.

However, the current study extends prior research by examining ways in which this effect might vary by neighborhood context. With the finding that collective efficacy moderates the gentrification and perceived violence relationship by strengthening the

negative association, it is suggested that a more cohesive, trusting neighborhood might have an even stronger crime-reduction benefit as gentrification unfolds. The current study supports this idea; collective efficacy seems to strengthen the crime-reduction benefit of gentrification on perceived violence. There are several potential reasons why this may be the case. Collective efficacy has sometimes been described as a dynamic factor that is partly endogenous, or contingent upon the challenges at hand (Morenoff et al., 2001; Sampson, 2012). When posed with the challenges that accompany neighborhood turnover and change, perhaps neighborhoods high in collective efficacy do better because they take collective action to welcome new residents and new businesses into the area. They may go to meet their new neighbors and invite them to community meetings and events, instead of ignoring them and excluding them from local organizations. And earlier in the process, they may make efforts to partner with developers to become attached and invested in the outcome of the process.

Edison Park, a northwest Chicago neighborhood, provides anecdotal evidence for the power of collective efficacy in action during gentrification efforts. In this neighborhood, the residents took an active role in the process of redevelopment. Newspaper articles from the time suggest that while residents enjoyed most of the changes, they took action to address certain elements they did not support:

> *"Recently, a community group, worried that the streets might become more clogged with parked cars and related problems if new bars and restaurants move in, asked the city to prohibit any additional liquor licenses from being issued in the "Town Center" area along Northwest Highway. The proposed ban has attracted few critics and is supported by Edison Park's Chicago City Council representative, Ald. Brian Doherty (41st)."* (Chase, 1998: 1)

In an article discussing changes to the Bucktown area, Alderman Terry Gabinsky

(32nd District), a 46-year resident of the neighborhood had a similar positive experience with the gentrification process because of residents being proactive to participate in the changes:

> *"We`re meeting our goal, which, from my point of view, is a change from the absentee landlords we suffered through in the late `60s and `70s. Owner-occupied property is a majority now, though I can`t give you a number, and brings back stability. People who own their property are more aggressive about what they want in terms of city services, whereas absentee landlords only care about the rent."* (Lauerman, 1992: 2)

A neighborhood without the ability to take action and intervene to tackle such issues in this manner might grow upset over time if the changes to their area were upsetting their ability to use public space. The current study supports the idea that gentrification, coupled with collective efficacy, can help to improve neighborhood perceived violence. By taking action and addressing problems, perhaps gentrifying neighborhoods with collective efficacy enjoy lower violence and victimization because they stop problems from developing into criminogenic situations. This result is also complementary to prior work on collective efficacy. Scholars have often noted that this neighborhood quality can play a powerful role in solving problems and reducing crime (Mazerolle, Wickes, and McBroom, 2010; Morenoff et al., 2001; Sampson et al., 1997; Wickes, 2010). In the current project, the results complement prior research by demonstrating that collective efficacy can specifically help reduce perceived violence in gentrifying neighborhoods.

Another conclusion to be drawn from this study is that neighborhoods perceiving the changes to their community as threatening may experience rises in perceived violence. Prior research supports these conclusions, although most prior research assumes that the group being threatened is middle-class white residents (Eitle and Taylor,

2008; Hipp, 2007; King, 2007). In part, the results in the current study may be due to violent clashes between new and longtime residents, and it may manifest itself through property crimes designed to target newly redeveloped spaces and residences. It could also be the case that new residents instigate confrontations regarding the use of public space, appearance of residences, and power over resources. Results in the current study found similar positive associations between gentrification and perceived neighborhood change for violence and overall victimization.[24] The sense of threat in these changing Chicago neighborhoods is perhaps best personified with this quote from Erskine Sankey, a longtime resident of the northeast neighborhood Uptown along Chicago's border with Lake Michigan. Sankey was interviewed about the rising tensions in the area:

> *"My main reason for [protesting] is the woman who has two children and makes $300 a month on public aid isn't welcome here, but the guy who makes $100,000 a year is."* (Martin, 1996: 1).

The supplementary analyses examining variation in perceived neighborhood change by change in the racial-ethnic composition of gentrifying neighborhoods also supports the importance of group threat dynamics. Results suggest that gentrifying neighborhoods that began the process predominantly composed of one racial-ethnic minority scored much higher on the perceived neighborhood change measure if they lost predominance in the neighborhood. In this way, the study supports the idea that racial and ethnic dynamics remains an important way in which neighborhoods establish their identity; the threatening of this racial-ethnic identity seems to be a driving force behind perceptions of perceived neighborhood change. Prior research in group threat dynamics offers confirmation that race-ethnicity often plays an important role in establishing group

[24] Refer to Appendix C for analyses examining victimization as the outcome measure.

dynamics (Kane, 2003; King and Wheelock, 2007), and the current study reinforces these findings.

One slightly divergent finding, however came when examining predominantly white neighborhoods. Interestingly, when a predominantly white neighborhood lost this identity during gentrification, their measure of perceived neighborhood change was not significantly different from predominantly white neighborhoods who maintained this identity. In part, this may be due to small sample size; only five white neighborhoods lost their predominance as a result of gentrification, and for those who did the change in population may not have been enough to trigger perceptions of threat. Group threat research has discussed the idea of a 'tipping point' where members of the majority perceive a change in the minority presence (Blau, 1977; Horowitz, 1985); perhaps in these neighborhoods the change in population was not enough to trigger this perception.

In the group threat literature, competition for resources is commonly cited as the impetus for violence and crime (Bobo et al., 1986; Clark, 1991; Frey, 1979). The current study demonstrates that this may be true in circumstance other than the traditionally examined scenario of white middle- and upper-class residents perceiving rises in the number of racial-ethnic minorities in the area. The results of this study seem to strengthen the reliability of the group threat model; across racial and social context and situation, what is supported in this study is the notion that neighborhoods where change is met with dissatisfaction and unrest may experience problems with perceived violence as a result.

In summary, this study both complements and extends prior research examining the relationship between gentrification and perceived violence within neighborhoods. Several of the most recent studies have found a negative relationship between gentrification and subsequent crime (Kreager et al., 2011; Papachristos et al., 2011; Velez, Lyons, and Boursaw, 2012) and in the examination of the overall effect in Chicago the current study comes to a similar conclusion. However, this study also extends prior research by examining potential mechanisms which either strengthen or weaken this relationship, and the results suggest that the context within which gentrification emerges plays a large role in its effect.

The fourth hypothesis in this study addressed the possibility of spatial perceived violence displacement, and while results contradicted the prediction that crime is not displaced by gentrification, limited conclusions can be drawn from the analysis of spatial displacement effects. The differences between levels of violence and victimization in these neighborhoods were not significant; on its surface this suggests that displacement is not taking place. There are a few potential explanations as to why the changes are not significantly different. Perhaps the adjacent areas were being impacted by the changes to the gentrifying neighborhoods even though they themselves were not undergoing gentrification. When considering the logistics of the hypothetical spatial displacement of perceived violence due to gentrification, perhaps these findings make sense. It would take considerable motivation and initiative to relocate all of one's activities to another neighborhood. We have evidence from research on hot spots policing initiatives that crime does not seem to displace from one intersection to nearby blocks as the result of a short-term initiative (Weisburd et al., 2006), so the fact that perceived violence does not

displace as a result of the much longer and broader process of gentrification across neighborhoods makes intuitive sense. However, these conclusions can only be called preliminary; better measurement of perceived violence and crime at smaller intervals of time and between smaller spatial units is necessary in the future to examine the possibility of a spatial displacement effect on crime as the result of gentrification.

*Study Limitations*

The limitations of this study and how these limitations impact the findings are critical to consider when interpreting the results. First, the outcome measures in this study were gathered at one point; this made it impossible to assess the change in these outcomes over the entire span of the decade within which the gentrification processes took place. Therefore, while gentrification may have happened over the entire decade, we are only able to measure perceived violence and the neighborhood contextual factors at the midpoint of the decade. Therefore, our measurements of violence and victimization may be underestimated, and the measures of perceived neighborhood change and collective efficacy may have also changed by the end of the time frame. This will be important to examine in future research when more reliable data is collected across time. Second, the current study is limited by its measurement of gentrification in neighborhood clusters. While these groupings of census tracts are excellent for tapping into neighborhood-level mechanisms, they do not allow for a narrower examination of neighborhood change. Research on gentrification has noted that it does not always occur evenly across areas (Wyley and Hammel, 1999), but the current study was not able to examine variations in how gentrification impacted smaller portions of the neighborhoods. Much discussion has been given in recent research to the importance of basing the level

of aggregation in research on theoretically sound arguments (Hipp, 2007; Weisburd et al., 2004). The current study seeks to place the examination of gentrification and perceived violence within the framework of neighborhood social control, therefore the choice of neighborhood clusters complements the body of literature building in this area. However, it remains a limitation of the current study that it is unable to go within these clusters to measure variation in the impact of gentrification processes on perceived violence.

Third, a limitation which must be addressed is the fact that the processes being discussed in this research are likely occurring simultaneously; this makes definitive causal statements about the suggested pathways in the current research difficult because they are likely to all have some impact on each other. For this reason, the causal explanations throughout the study have been referred to as suggested relationships; future research will aid in our understanding of the causal pathways with evidence gathered from longitudinal data over time. Gentrification may reduce perceived violence, but it remains unexplored in the current project whether this reduction in perceived violence had any effect on *subsequent* gentrification processes. Similarly, the mechanisms of collective efficacy and perceived neighborhood change are examined for their effect on gentrification, but it is likely that these forces also impact each other over time. The current project utilized data that only measured these elements at one point in time, which made it impossible to examine the reciprocal nature of how all of these simultaneously working mechanisms impact each other. Future research in this area will benefit from considering these reciprocal effects with data that allow for measurement of all factors at multiple points.

Fourth, the outcome measures capturing violence and victimization are unofficial measures; they capture the perceptions of the residents and not official police reports of crime incidents. These data may give us a more accurate understanding of the level of violence and crime; scholars have long noted that police reports are underestimates of criminal incidents (Catalano, 2006; Lynch and Addington, 2006). However, as they are measures of residents' perceptions, they cannot be verified further. Additionally, research has also demonstrated that perception of violence and crime play a powerful role in neighborhood cohesion, activities in the area, and general satisfaction (Hartnagel, 1979; Sampson et al., 1997; Wyant, 2008). However, perceptions of violence may not always be valid measures of the levels of violence an area is actually experiencing. Future research should incorporate measurements of both perceptions and objective values of crime. When the measures of violence and victimization in the PHDCN data have been compared with external measures from official statistics, the results have been complementary (Browning, Dietz, and Feinberg, 2004; Morenoff et al., 2001; Sampson et al., 1997), but future research would benefit from employing both outcome measures in analyses.

Fifth, the measurement of gentrification in these neighborhood clusters was constructed using data from 1990 and 2000. Therefore, the rapidity and variation in changes was not able to be examined. Some neighborhoods may have primarily changed at the beginning of the decade, thus their responses to the 1994-95 survey are temporally accurate to report on these changes. But some neighborhoods may have started changing later in the decade, so their responses to the 1994-95 survey may not thoroughly capture their reactions to the process. Future research may benefit from employing

measurements of gentrification that can be captured in smaller time intervals. Additionally, future research would benefit from an incorporation of measures that capture commercial gentrification. Recent research has begun to do this, and it would be beneficial to future studies to examine both commercial and residential change (Papachristos et al., 2011).[25]

Finally, there are clear methodological limitations to the displacement analyses, making this section of the current study exploratory and its results preliminary. One limitation is the use of neighborhood clusters; displacement effects may occur on a more micro-level, with the redevelopment of buildings on one block prompting crime to displace to a nearby block that is still within a neighborhood. Another limitation is the use of homicide rates as the outcome. Homicide is a relatively rare event; therefore, it is difficult to discern if changes over these years are meaningful (Pridemore, 2005). This limitation was addressed by incorporating the measurement of perceived violence from the 2001-02 community survey, and comparing these results to the 1994-95 results, but the 2001-02 survey has a much smaller sample size, compromising its reliability. Future research will benefit from incorporating official statistics of crime across the entire span of the gentrification process; in that way, the preliminary conclusions from this project may be strengthened by results using more reliable and valid measures.

*Policy Implications*

[25] The current study attempted to gather from archival records of businesses entering into the neighborhoods in the 1990s, but this collection had to be abandoned. Since the information about each business only listed the name, category (i.e. restaurants, coffee shops, nail salons), and location, it was impossible to objectively discern if new businesses were evidence of gentrification or typical commercial turnover.

There are several potential recommendations from this dissertation for those in charge of housing policy and urban development. Since the current study demonstrates that gentrification can have crime-reduction benefits if the longtime residents do not feel threatened by it, perhaps future policymakers can make efforts to engage them in the process. In this way, longtime residents could feel as if redevelopment was something they could benefit from. Lance Freeman (2006: 325) wrote about gentrification in Harlem, and challenged the notion that longtime residents will automatically reject the changes. He writes, "The discourse on gentrification… has tended to overlook the possibility that some of the neighborhood changes associated with gentrification might be appreciated by the prior residents." From a policy perspective, it may be in a city's best interests to encourage active participation in the gentrification process. We have some evidence for this in Chicago; in the Bronzeville area of Chicago redevelopers in the 1990s worked with community organizations to design new and affordable housing that maintained a similar visual profile to the area. When Chicago's Planning and Development Commissioner (Valerie Jarrett) was interviewed about this in 1992, she elaborated about the efforts in Bronzeville:

> *"We want to maintain the existing resident base and to build around that and integrate with that," she said. "This will not lead to gentrification. One strategy will be to limit new development in both areas to buildings of no more than four stories tall. Even more important will be attracting middle-class and working-class people back to the areas….What we`re trying to do…is to change the mix. We want to try to introduce market-rate housing as well as low- and moderate-income housing."* (Reardon, 1992: 2)

Developers could also encourage gentrification efforts that have a goal of preserving the neighborhood's cultural history. In his accounts of gentrification in Harlem, Freeman (2005; 2006) concludes that much of the success was due to the

preservation of the rich cultural and historical significance the area holds for African Americans. However, some argue that capitalizing on a neighborhood's traditional image should be done thoughtfully and carefully. Anderson and Sternberg (2013: 457) observe that policymakers and redevelopers should be wary of making neighborhoods into sites of "ethnic consumption," where the culture is exploited for capital gain at the expense of making the longtime residents feel caricaturized by new residents and visitors.

One worry presented by several gentrification scholars is that race and class discrimination in mortgage lending and realtor steering will intensify as investment in a gentrifying area increases (Turner and Skidmore, 1999; Wyly and Hammel, 2004). In many disadvantaged neighborhoods historically occupied by minorities, such processes were the cause of their initially being pushed into these neighborhoods (Kain, 1968; William and Collins, 2001). Now, scholars worry that gentrification will intensify this process of spatial segregation (Wyly and Hammel, 2004). Lees (2008: 2449) offers a more extreme description of this, concluding that "[gentrifiers] tend to self-segregate, and, far from being tolerant, gentrification is part of an aggressive revanchist ideology designed to retake the inner city for the middle classes." If policymakers truly wish gentrification to result in positive outcomes for neighborhoods, promoting social inclusion and participation in the process across all residents may be vital for more neighborhoods to enjoy the crime-reduction benefits that gentrification can encourage. Perhaps developers could get the input of longtime residents for decisions about redesigning public spaces – investment in the process may encourage residents to take advantage of the changes and not feel threatened by them. The current study suggests

that attention to such contextual factors may be influential to violence and victimization in gentrifying neighborhoods.

It may also be advantageous for gentrification scholars to examine the emergence of housing redevelopment policies which incentivize gentrification efforts, and therefore play powerful roles in setting these processes of gentrification motion in neighborhoods with high potential. In the city of Chicago, for example, the late 1980s saw the emergence of federally funded affordable housing investments for the first time (Lenz and Shaw, 1993). It could be the case that policymakers play a pivotal role in setting gentrification efforts in motion in particular neighborhoods. Therefore, future research should continue to examine the interaction between local policy, investment, and redevelopment measures.

*Conclusions and Future Research Directions*

This dissertation incorporated criminological theory into the study of gentrification and perceived violence, suggesting contextual factors in neighborhoods which may play a significant role in moderating the relationship between these factors. Overall, the results suggested that the level of collective efficacy and perceived neighborhood change can each play a role in strengthening or changing the relationship between gentrification and perceived violence. Additionally, there is preliminary evidence from this study that perceived violence does not spatially displace to adjacent areas when gentrification impacts a neighborhood. While this project sheds light on mechanisms which may play a significant role in the relationship, there is still much more

work to be done before we have a thorough understanding of the nuanced ways in which gentrification affects perceived violence in neighborhoods.

In the past decade, the country has been hit by a significant economic recession, which has halted many gentrification and redevelopment projects in their tracks (Delmelle and Thill, 2014). Therefore, an important question to examine is how gentrification efforts that were initiated in the economic boom of the 1990s have been impacted by this significant hit to economic resources. It could be the case, for example, that abandoned gentrification efforts have harmed neighborhoods by beginning to develop sites and leaving them unattended and unfinished, contributing to social disorganization. The rapidly fluctuating economic climate has undoubtedly had an impact on gentrification processes throughout the country, and future research should consider what happens when gentrification efforts are not able to proceed as planned.

It will also be important in future research to examine variations in the rapidity of gentrification across and within neighborhoods. This will benefit from examining evidence of both commercial and residential changes, and to examine gentrification on a smaller scale, tracking changes both at more frequent intervals and across smaller spatial units of analysis. While archival data of business changes in the 1990s in Chicago proved unreliable, future research would benefit from gathering contemporary data demonstrating the ways in which gentrification impacts the population and the businesses in neighborhoods. It would also be interesting to examine in future research whether different types of crime are impacted by commercial versus residential displacement. Additionally, gathering data more frequently throughout an area will help to reveal whether or not the rapidity of gentrification process causes different interactions with

social control or threat mechanisms. One might speculate that more rapid change in an area with elevated perceptions of perceived neighborhood change could cause a more significant increase in perceived violence. Conversely, rapid change in an area of collective efficacy may continue to experience crime reduction benefits, but these questions must be left for future research to explore.

It will also be important in future research to examine gentrification processes in other urban areas. The city of Chicago has provided criminologists with a rich dataset to examine neighborhood context for several decades, but the examination of gentrification and crime should be expanded to other cities. Several scholars have already begin to do this, examining gentrification and crime patterns in Baltimore, Boston, San Francisco, Seattle, and New York City to name a few (Atkinson, 2000; Kreager et al., 2011; McDonald, 1986; Taylor and Covington, 1988). However, these studies have not yet examined the role of neighborhood contextual factors. The survey administered through the PHDCN has been administered in a few other urban areas (Wickes et al., 2011); future research in gentrification and crime should take advantage of these replications and gather the appropriate data on gentrification to determine if neighborhood contextual factors operate in similar manners as they have in the current study.

The final conclusions from this dissertation are modest. From this research, there is evidence to suggest that neighborhood context plays an important role in dictating whether gentrification will help to reduce crime, or whether it will make crime worse. There is also preliminary evidence suggesting that when gentrification is associated with reductions in perceived violence, this criminal activity does not simply move to surrounding areas. As the 21$^{st}$ century progresses, it is likely that many urban areas will

undergo gentrification processes. This dissertation suggests that it will be important in such future endeavors to take the time to examine neighborhood context; in this way, neighborhoods that experience gentrification can possibly avoid dangerous consequences and enjoy the crime reduction benefits that gentrification has the potential to encourage.

# APPENDIX

**Appendix A.** Difference-in-Differences Estimation for Logged Homicide Rate, Gentrification (Treatment) vs. Adjacent (Control) Areas

| Cluster ID | Txt loghom90 | Txt loghom95 | Δ Txt Homicide Rate | CA loghom90 | CA loghom95 | Δ CA Homicide Rate | Difference between Differences | Txt % change (90 - 95) | CA % change (90-95) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.8719 | 0.6954 | -2.1765 | 2.0328 | 1.3103 | -0.7225 | -1.4540 | 75.7872 | 35.5425 |
| 2 | 4.5786 | 0.7110 | -3.8676 | 4.3005 | 0.3229 | -3.9776 | 0.1100 | 84.4713 | 92.4906 |
| 3 | 4.7649 | 0.6907 | -4.0742 | 4.6848 | 0.2202 | -4.4646 | 0.3904 | 85.5043 | 95.2998 |
| 4 | 3.6724 | 0.6416 | -3.0308 | 3.7010 | 0.0201 | -3.6809 | 0.6501 | 82.5299 | 99.4574 |
| 5 | 5.0447 | 0.2228 | -4.8219 | 5.7602 | 0.0942 | -5.6660 | 0.8441 | 95.5837 | 98.3645 |
| 6 | 3.0214 | 0.6487 | -2.3727 | 3.2104 | 0.4783 | -2.7321 | 0.3594 | 78.5294 | 85.1029 |
| 7 | 4.7299 | 0.5659 | -4.1640 | 4.8629 | 0.3015 | -4.5614 | 0.3974 | 88.0361 | 93.7993 |
| 8 | 2.9258 | 0.7786 | -2.1472 | 2.3836 | 0.4172 | -1.9664 | -0.1808 | 73.3874 | 82.4957 |
| 9 | 1.4632 | 0.1305 | -1.3327 | 1.0390 | 0.1567 | -0.8822 | -0.4505 | 91.0810 | 84.9147 |
| 10 | 4.9086 | 0.6347 | -4.2739 | 4.7225 | 0.0907 | -4.6318 | 0.3579 | 87.0706 | 98.0801 |
| 11 | 2.1094 | 0.9440 | -1.1654 | 2.4812 | 0.1779 | -2.3033 | 1.1379 | 55.2497 | 92.8309 |
| 12 | 4.0623 | 0.6155 | -3.4468 | 4.2270 | 0.4620 | -3.7651 | 0.3183 | 84.8485 | 89.0710 |
| 13 | 4.2301 | 0.2256 | -4.0045 | 4.4809 | 0.7718 | -3.7091 | -0.2954 | 94.6665 | 82.7759 |
| 14 | 2.8722 | 0.9605 | -1.9117 | 2.3686 | 0.6317 | -1.7369 | -0.1748 | 66.5578 | 73.3293 |
| 15 | 3.6608 | 0.5420 | -3.1188 | 3.5986 | 0.3983 | -3.2003 | 0.0814 | 85.1959 | 88.9318 |
| 16 | 3.2787 | 0.7969 | -2.4818 | 3.3318 | 0.1708 | -3.1610 | 0.6793 | 75.6932 | 94.8750 |
| 17 | 2.7276 | 0.7477 | -1.9799 | 2.5385 | 0.3881 | -2.1504 | 0.1705 | 72.5875 | 84.7117 |
| 18 | 2.6148 | 0.5490 | -2.0658 | 2.5526 | 0.1616 | -2.3910 | 0.3253 | 79.0025 | 93.6710 |
| 19 | 3.5296 | 0.6469 | -2.8827 | 3.7906 | 0.1531 | -3.6375 | 0.7548 | 81.6717 | 95.9603 |
| 20 | 1.7589 | 0.3677 | -1.3912 | 1.3038 | 0.7805 | -0.5233 | -0.8679 | 79.0926 | 40.1358 |
| 21 | 2.0307 | 0.3163 | -1.7144 | 2.9757 | 0.4080 | -2.5676 | 0.8532 | 84.4241 | 86.2876 |
| 22 | 2.7203 | 0.6359 | -2.0844 | 2.5295 | 0.2993 | -2.2302 | 0.1458 | 76.6228 | 88.1662 |
| 23 | 4.1656 | 0.2342 | -3.9314 | 4.7882 | 0.7536 | -4.0346 | 0.1032 | 94.3772 | 84.2614 |
| 24 | 3.3798 | 0.3054 | -3.0744 | 3.8438 | 0.0164 | -3.8273 | 0.7529 | 90.9639 | 99.5724 |
| 25 | 3.0617 | 0.7711 | -2.2906 | 3.5844 | 0.0017 | -3.5828 | 1.2922 | 74.8149 | 99.9534 |
| 26 | 3.4340 | 0.6377 | -2.7963 | 3.6666 | 0.8220 | -2.8446 | 0.0484 | 81.4288 | 77.5820 |
| 27 | 3.3318 | 0.5060 | -2.8258 | 3.0009 | 0.6085 | -2.3923 | -0.4335 | 84.8144 | 79.7210 |
| 28 | 3.4318 | 0.8670 | -2.5648 | 3.9117 | 0.3495 | -3.5622 | 0.9974 | 74.7349 | 91.0654 |
| 29 | 3.1043 | 0.2529 | -2.8514 | 3.6533 | 0.2360 | -3.4172 | 0.5658 | 91.8539 | 93.5392 |
| 30 | 3.8489 | 0.2099 | -3.6390 | 3.8942 | 0.7407 | -3.1535 | -0.4855 | 94.5461 | 80.9795 |
| 31 | 4.2015 | 0.2763 | -3.9252 | 4.0926 | 0.4021 | -3.6906 | -0.2346 | 93.4234 | 90.1761 |
| 32 | 3.0353 | 0.4483 | -2.5870 | 3.9240 | 0.0567 | -3.8672 | 1.2802 | 85.2316 | 98.5540 |
| 33 | 0.0003 | 0.3758 | 0.3755 | 0.0012 | 0.0037 | 0.0025 | 0.3730 | 81.6755 | 84.7124 |
| 34 | 3.4431 | 0.3659 | -3.0772 | 3.7901 | 0.2634 | -3.5267 | 0.4495 | 89.3724 | 93.0507 |
| **Means** | **3.2946** | **0.5388** | **-2.7558** | **3.3832** | **0.3668** | **-3.0164** | **0.2606** | **82.8229** | **86.8106** |

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