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Movin' on Up?: Gentrification and Homicide in Chicago, IL, 1970 to 1995

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Movin' On Up? Gentrification and Homicide in Chicago, IL: 1970-1995

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Abstract

Movin' On Up? Gentrification and Homicide in Chicago, IL: 1970-1995  
By Tiffany Davis

This research examines the differential effects of social disorganization on neighborhood homicide rates in Chicago, IL, from 1970 to 1995. The main objectives are to determine whether gentrification influences neighborhood homicide rates, and to account for the structural conditions that contribute to changes in the homicide rates of areas undergoing gentrification compared to those that are not. Since social disorganization theory is the dominant theory for explaining crime rates in neighborhoods, it serves as the theoretical basis for this research on gentrification and homicide. Hypotheses from this theory suggest that different structural processes are occurring in gentrifying neighborhoods compared to non-gentrifying neighborhoods. The effects of residential stability, racial heterogeneity, and economic disadvantage are estimated for three main homicide time-series models – all neighborhoods in the city of Chicago, non-gentrifying census tracts alone, and gentrifying census tracts alone. The results suggest that gentrification does not significantly impact the homicide rates in Chicago neighborhoods after controlling for levels of social disorganization; however, indicators of social disorganization do operate differently in gentrifying neighborhoods compared to those neighborhoods that never gentrify. Overall, this study shows that, contrary to the tenets of social disorganization theory, residential stability actually works to increase violence in communities undergoing a social, physical, and economic upgrading.

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## **Chapter 1. Introduction and Background**

Over the past four decades in the United States, urban sociologists have been primarily concerned with understanding the root causes of a variety of social problems, such as teenage pregnancy and crime, for example, that are heavily concentrated in economically disadvantaged inner city communities (Massey & Denton 1993; Wilson 1987; Mayer & Jencks 1989). In 1987, Wilson's seminal book *The Truly Disadvantaged* focused on conditions in Chicago's inner city over the post-industrial period, and sparked renewed interest among scholars in investigating the social and economic features of urban neighborhoods (Bourgois 2002; Sampson & Laub 1994; Massey 1990). Despite this significant attention to severely disadvantaged urban neighborhoods that were stable or deteriorating, little research has been directed at gentrifying neighborhoods in some of the same cities. This is noteworthy as many previously impoverished inner city neighborhoods have undergone dramatic physical and social changes, experienced large demographic shifts in population characteristics, and exhibited marked socioeconomic improvement over the very period that Wilson and others studied.

While much is known about crime trends in disadvantaged neighborhoods experiencing a 'spiral of decline' (Skogan 1986), it is not clear how crime rates have been affected by the 'upward climb' in the socioeconomic prospects of gentrifying neighborhoods, or even why changes in the crime rate should be expected. Only a handful of studies have focused on the relationship between the neighborhood changes associated with gentrification and their effects on crime rate trends (Van Wilsem, Witterbood, & Graaf 2006; Covington and Taylor 1989; Taylor & Covington 1988; McDonald 1986). In this thesis, I argue that the paucity of research on gentrification is

surprising, particularly because one of the key macro-level theories in criminology – social disorganization theory – would predict countervailing crime rate trends as neighborhoods gentrify. Consequently, this study is intended to provide an initial exploration of crime rate changes in both gentrifying and non-gentrifying neighborhoods in Chicago.

Using the Chicago Homicide Dataset (Block & Block 1998), this thesis provides detailed time series analyses of the neighborhood characteristics that predict homicide rate changes in 1) the city of Chicago, 2) the 256 census tracts experiencing gentrification in Chicago, and 3) the remaining 599 that did not experience gentrification between 1970 and 1995. I also explore whether there are differences in the neighborhood characteristics that predict homicide in tracts that gentrified compared to those that did not - analyses which help to assess the applicability of social disorganization theory for understanding homicide rates in gentrifying areas. Specifically, my analyses use key neighborhood structural characteristics derived from social disorganization theory to predict neighborhood homicide rates over time. Although some research has explored gentrification, homicide, and (to a much lesser extent) the theoretical and empirical link between gentrification and crime, the factors that may influence increases or decreases in the homicide rates of gentrifying neighborhoods need to be clarified.

The present research attempts to address several voids currently plaguing the literature on crime and urban neighborhoods. This thesis provides an important theoretical contribution by examining the utility of social disorganization theory for explaining homicide trends in gentrifying neighborhoods. Arguably, social disorganization theory would predict increasing crime rate trends as a consequence of

decreased informal social control resulting from the increased residential mobility and ethnic heterogeneity associated with gentrification, yet a reduction in crime as a consequence of elevated economic resources in the neighborhood. Therefore, gentrifying neighborhoods represent a compelling test of the relationship between the structural characteristics of neighborhoods and social disorganization. In gentrifying neighborhoods, two of the variables that are expected to elevate social disorganization are actually increasing, while the other is declining. The process of gentrification and its influence on crime thus presents a puzzle for social disorganization theorists.

Macro strain theory would also predict increased conflict among existing and new residents. From this perspective, Agnew (1999) highlights the importance of differential social control as well as individual motivation for crime. Agnew (1999) argues that sources of strain such as the presentation of negative stimuli and loss of positively valued stimuli increase the community level of aggregated negative affect and, thus, crime rates. An application of macro strain theory to gentrification would suggest that conflict might occur in gentrifying neighborhoods as families are displaced residentially due to such factors as increasing property taxes (Agnew 1999). Although the available data analyzed in this thesis does not allow for an investigation of the relationship between individual motivations and crime, the potential for conflict early in the process of gentrification due to residential displacement is a possible consequence of gentrification. Macro strain theory would suggest that elevated levels of strain in a community as a result of displacement and consequently, conflict among residents, might lead to higher rates of crime.

Second, this study provides a detailed within-neighborhood exploration of changing homicide rates in gentrifying neighborhoods, which is important because there is a dearth of literature that explores these social processes over time. By studying within-neighborhood processes, this research provides an examination of how homicide rates vary across all gentrifying neighborhoods within a single city, even for those experiencing gentrification at different periods between 1970 and 1995. Since the local governments and housing markets of cities can be drastically different, focusing on multiple neighborhoods in *one* city will limit my ability to generalize about the relationship between gentrification and crime across different urban areas. However, the advantage of this approach is that I am able to hold the characteristics of the city constant, while focusing on time varying neighborhood characteristics to explore the factors that account for changes in homicide rates in gentrifying census tracts. Thus, an empirical contribution will be provided to the literature on gentrification.

Third, scholars have noted that gentrification is likely to continue in large cities across the United States (Brueckner & Rosenthal 2005; Atkinson & Bridge 2005). In fact, this process is generally encouraged by municipal governments who provide incentives to suburbanites to entice relocation back to the city (Slater 2004; Kennedy & Leonard 2004; Hackworth 2002; Lees 1994). Municipal governments see value in gentrification because it increases the city's tax base, strengthening the city's funds and widening the availability of resources (The Center for Urban Research and Learning 2002). For example, the city of Chicago used federal funds through the Hope VI Program to demolish and revitalize several long-standing public housing projects, such as the Cabrini Green Housing Project (Wyly & Hammel 1999). This housing project is currently being

redeveloped, and will be replaced with 718 mixed-income rental and homeownership units (Chicago Housing Authority 2008). The demolition of Cabrini Green began in June 1995, when the federal Department of Housing and Urban Development replaced the Chicago Housing Authority as property administrator (Salama 1999). The analysis conducted for this thesis identified one census tract (tract 3302 of the four tracts that comprise Cabrini Green Housing Projects) as meeting the criteria for gentrification during the 1990s. This coincides with the time during which the housing project was torn down and revitalized. In total, 165 other American cities have utilized Hope VI funds to eliminate public housing units since the program's inception in 1992, including Atlanta, GA, New York, NY, and Phoenix, AZ (Popkin, Katz, Cunningham, Brown, Gustafson, & Turner 2004). Gentrification is likely to continue to occur as local, state, and federal governments become more involved in revitalizing America's cities through such programs as Hope VI. Thus, the findings of this research may inform both academics and policymakers of the likely effects of gentrification on neighborhood violence.

Finally, this work will provide a quantitative, longitudinal analysis of gentrification in Chicago. Most empirical research on gentrification in Chicago focuses on one or two specific neighborhoods within the city and is heavily qualitative.<sup>1</sup> Therefore, this paper's empirical contribution will explore variations in the homicide rates of all Chicago neighborhoods, including both those that gentrify and those that do not, over almost three decades using both census and homicide data.

## **Background**

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<sup>1</sup> Exceptions include Morenoff, House, Hansen, Williams, Kaplan, and Hunte 2007; Weber, Doussard, Bhatta, and McGrath 2006; Helms 2003; Wyly and Hammel 2000; Wyly and Hammel 1998.

Located in the heart of the Midwestern United States, Chicago, Illinois is a well-researched city. Urban sociologists such as Robert Park (1925), E. Franklin Frazier (1932), Clifford Shaw and Henry McKay (1942), St. Clair Drake and Horace R. Cayton (1945), William Julius Wilson (1987), Robert Sampson (1997), and Mary Pattillo McCoy (1999) have all explored the city. While Park used the city of Chicago as a theoretical basis for understanding urban society, Shaw and McKay explored patterns of delinquency among young males living in Chicago in the mid-twentieth century. Park's work would facilitate the increasing prominence of the University of Chicago's Department of Sociology, which came to be known as the Chicago School. Drake and Cayton studied black community and culture on Chicago's historically black South Side during the late 1930's, providing insight into black housing, employment, and social integration.

A well-known contemporary example of a sociologist engaged in work involving Chicago is William Julius Wilson. Wilson researched the impact of concentrated poverty on the life chances of African-Americans.<sup>2</sup> He argues that the exodus of middle-class blacks from the inner-city had deleterious impacts on the remaining black "underclass" (Morenoff and Sampson 1997). Similarly, Pattillo's (1999) influential work on the black middle-class was based on residents living in Chicago neighborhoods bordering some of the most disadvantaged areas of the city. In fact, most neighborhood research has been conducted in Chicago, in part because of on-going major data collection efforts like the Chicago Homicide Dataset (Block and Block 1998) and the Project on Human

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<sup>2</sup> Wilson's work includes *The Declining Significance of Race* (1987), *The Truly Disadvantaged, When Work Disappears: The World of the New Urban Poor* (1996), and *There Goes the Neighborhood: Racial, Ethnic, and Class Tensions in Four Chicago Neighborhoods* (2006).

Development in Chicago Neighborhoods (PHDCN) (Earls, Brooks-Gunn, Raudenbush, & Sampson 1995).

Chicago is a particularly unique urban area, due to its racial and ethnic heterogeneity, large immigrant population, history of racial segregation, history of violence, connection to organized crime, and political unrest. Racial tensions have been and remained high, partially evidenced by the two race riots that occurred in 1919 and 1968. During World War I, blacks began migrating to Chicago and other large industrial cities in the Northern United States in large numbers (Fogelson 1968). This demographic exodus of blacks from the South was known as the Great Migration. In 1910, a large majority of black Chicagoans (78 percent) lived in adjacent neighborhoods on the South Side of Chicago. This area, known as the “Black Belt”, was comprised of 30 blocks of aging, dilapidated housing along State Street. According to Pattillo-McCoy (2002), this area would later experience extreme overcrowding, resulting in its expansion into previously all-white neighborhoods following World War II.

The Great Migration created tension between blacks and whites, especially surrounding segregated neighborhoods and recreational facilities, as black migrants moved into previously white neighborhoods in the early twentieth century (Tolnay, Crowder, & Adelman 2002). According to the Chicago Commission on Race Relations, this in-movement of blacks caused tension among the existing and new residents. In particular, when a black youth named Eugene Williams swam from a black beach to a de facto segregated beach for whites during the last week of July in 1919, racial conflict ensued that resulted in his drowning (Tuttle 1970). The police did not make any arrests in



the drowning incident, which infuriated blacks. Later that night a gang of whites counterattacked in the city, beginning the racial riot of 1919 (Tuttle 1970).

Some of the conflict that occurred during the racial riot of 1919 centered on issues of access to housing. Although infrequent, the white residents living in these “contested areas” were sometimes responsible for the destruction and bombings of black property. Within these neighborhoods, white gangs and “athletic clubs” were identified as the individuals/groups responsible for the arsons committed in the black neighborhoods (Grimshaw 1960). Interestingly, the area that experienced the most casualties and violence during the 1919 riot was one with no black residents. For example, the stockyard district of the Southwest Side reported the highest percentage (41) of injuries sustained while 34 percent of injuries sustained occurred in the “Black Belt” (Grimshaw 1960).

From the 1920s to the 1940s, the black areas of Chicago simultaneously experienced rapid population growth and extreme overcrowding. In 1932, Frazier identified seven zones within Chicago’s Black Belt, located on the South Side. These zones, which were on average one mile long, were characterized by differing class statuses. The first zone was closest to the central business district while the seventh zone was farthest from central city.<sup>3</sup> Using a variety of class indicators, Frazier found evidence of significant class stratification among blacks living in the segregated Black Belt of the 1920’s. During this time, Zone VII was home to the most well-to-do blacks living within the Black Belt. As the zones ascended, there were decreases in the percentage of Southern-born heads-of households, illiteracy rates, and delinquency rates. On the other

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<sup>3</sup> Like Park, Burgess, and McKenzie (1925) from the Chicago School of Sociology, Frazier delineated Chicago’s Black Belt by a series of concentric zones.

hand, both the proportion of mulattoes (mixed-race individuals) and home-ownership increased.

Wilson (2006) described a tension that characterized several areas of Chicago undergoing ethnic and racial changes even as recently as the early 1990s. Statistics show that between 1990 and 2000, the percentage of immigrants in Chicago increased from 17 percent to 22 percent (Taylor and Puente 2004). Chicago has historically been an attractive area for immigrants; in the nineteenth century, Chicago was a national entry port for immigrants (Taylor and Puente 2004). However, national restrictions such as the Immigration Act of 1924 slowed the influx of immigrants, and it is only recently that immigration levels have reached pre-twentieth century levels.

Even though immigration has increased since 1990, these new residents are neither widely integrated into nor dispersed across existing neighborhoods (Taylor and Puente 2004). Chicago was and remains a patchwork of ethnic and racial enclaves (Taylor and Puente 2004). Similarly, existing black residents and white residents in Chicago have historically lived in segregated neighborhoods. A common measure of racial segregation is the Dissimilarity Index, which for blacks would provide the percent of blacks who would need to move so that they would be equally distributed across all of Chicago (Massey 1990). Values can range from 0 to 1, with a score of 1 indicating a higher level of dissimilarity.

Table 1.1 shows Chicago's 1970, 1980, 1990, and 2000 scores on the black dissimilarity index. Though declining over time, by 2000 Chicago still ranked fifth nationally for the most segregated metropolitan areas for Blacks. Chicago was only surpassed by Detroit (.846), Milwaukee, WI, (.818), New York, NY (.810), and Newark,

NJ (.801) (U.S. Census Bureau 2000). Indeed, Massey and Denton (1988) identified Chicago as one of 16 hypersegregated American cities in 1980 based on their study on several dimensions of racial segregation.

**Table 1.1. Black Dissimilarity index for the City of Chicago**

<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
0.92	0.878	0.838	0.797

Source: (US Census Bureau 2000 and data from 1970 in Taylor & Puente 2004; Massey 2001)

### *Defining Communities in Chicago*

During the late 1920s, the city of Chicago was divided into 75 community areas based on various factors such as 1) settlement, growth and history; 2) local identification with the area; 3) local trade area; 4) distribution of membership of local institution; and 5) natural and artificial barriers (Chicago Fact Book Consortium 1995). These distinctions still exist today, although two additional community areas have been added. Each community area is composed of multiple census tracts. For example, Chicago's downtown area is subsumed under Community Area 32, known as the Chicago Loop (City of Chicago 2008). Within Community Area 32, there are currently six census tracts. The Loop is home to the Loop Retail Historic District and the well-known Magnificent Mile.

Although the community areas of Chicago could be used to study gentrification, these areas are too large to adequately capture the complex social processes associated with gentrification. In fact, analyses from this study show that, if gentrification occurs in a Community Area, it can be measured in only some of the census tracts that comprise

the larger area. Moreover, census tracts are the most widely used measure of neighborhoods in community-level research outside of Chicago (Sampson, Morenoff and Raudenbush 2002). Thus, this study treats census tracts as neighborhoods. Given the widespread interest in Chicago as an area of study, this thesis will continue in this academic tradition and explore the importance of gentrification in understanding homicide rates within and across neighborhoods between 1970 and 1995.

### *Gentrification in Chicago*

As previously discussed, the process of gentrification has recently occurred in many domestic and international cities. For this paper, gentrification is defined as the social upgrading of a previously disinvested area that occurs simultaneously with the physical upgrading of housing stock. In Chicago, gentrification initially began on the North Side during the early 1960's in the Lincoln Park Community Area (Fidel 1992). Lincoln Park, which is located north of downtown on Lake Michigan, is home to both the Lincoln Park Zoo and DePaul University (City of Chicago 2008). It shares borders with several community areas, including Lakeview, North Center, Logan Square, West Town, and the Near North Side. In 2007, the area of Lincoln Park between Armitage St., Willow St., Burling St., and Orchard St. was recognized as the most expensive block in Chicago by Forbes Magazine (Forbes 2007).

Although the Great Chicago Fire of 1871 destroyed most of the homes in Lincoln Park, the area was quickly rebuilt. It soon became home to numerous groups of immigrants, such as Germans, Irish, Poles, Rumanians, and Hungarians (Chicago Fact Book 1995). Until the Depression and World War II, the Lincoln Park neighborhoods

were ethnically heterogeneous. However, the Works Progress Administration (WPA) built the Julia C. Lathrop Homes in Chicago, and half of the 925 units were located in Lincoln Park (Chicago Fact Book 1995). The simultaneous construction and conversion of existing buildings increased the total housing units by 4,000 (Chicago Fact Book 1995). By 1950, the housing stock was overcrowded and deteriorating, which had devastating impacts on this lakefront community. Between 1950 and 1960, more than 22,000 residents had left Lincoln Park (Fidel 1992).

Reinvestment and gentrification did begin to occur, however. As Fidel argued (1992), “throughout the 1960s there was considerable housing renovation, land clearance, and new construction in Lincoln Park” (154). Using census tract data from 1960 to 1980, Fidel documented overall decreases in the number of available housing units, increases in the number of young residents (mostly childless), a reduction in population density, and an increase in social status. These changes, according to Fidel, signaled a process of gentrification. Numerous researchers continue to document the changes associated with gentrification that have occurred in Lincoln Park and other Community Areas of Chicago (Nyden, Edlynn, and Davis 2006; Weber, Doussard, Dev Bhatta, and McCrath 2006; Suchar 2004; Padilla 1987; Suchar 1994).

The forthcoming chapters in this thesis are organized as follows: Chapter 2 provides a review of the literature on inner city neighborhoods, gentrification, crime and gentrification, and social disorganization theory. Chapter 3 offers an overview of the data utilized in this study, as well as a description of the methodology. In Chapter 4, summary statistics and the results from the time-series are analyzed. Chapter 5 provides an in-depth

discussion of these results, followed by a conclusion. References and Appendices are included at the end of the thesis.

## **Chapter 2. Literature Review**

*Neighborhoods in the Inner City*

Significant work conducted on the urban underclass has focused on inner city communities that did not undergo the social process of gentrification. Much of this work builds on the research of Wilson (1987), who argued that the deindustrialization of American cities during the 1970s had deleterious effects on black families living in the inner-cities. The disappearance of low-skilled, entry-level manufacturing jobs from these areas left many poor black residents jobless. According to Wilson (1991), an increase in black joblessness “helped trigger an increase in the concentration of poor people, a growing number of poor single-parent families, and an increase in welfare dependency” (461). This concentration of poverty continued to worsen as those black working- and middle-class families who were able to leave the inner-city either moved to the suburbs or to wealthier neighborhoods.

The consequences of concentrated poverty were numerous, and included elevated levels of crime. This was supported in several studies inside and outside of Chicago, which focused on neighborhoods with very high crime rates and steadily increasing levels of concentrated poverty (Massey 1996; Parker & Pruitt 2000; Wilson 1987). Despite the racialized nature of this process, Krivo and Peterson (1996) argued that while extremely disadvantaged neighborhoods have unusually high rates of crime, local structural disadvantage is equally important in predicting crime in both black and white neighborhoods (see also Sampson & Wilson 1995). Their analysis found substantial support for these arguments, and the results of their research have been replicated in several studies (McNulty 1999; Parker & McCall 1999; Parker & Pruitt 2000; Shihadeh & Flynn 1996).

The high concentration of poverty and subsequent social isolation in these communities leads to social disorganization, or the “inability of a community structure to realize the common values of its residents and maintain effective social controls” (Sampson & Groves 1989, 777). As a result, the crimes rates of socially disorganized neighborhoods are disproportionately high. Yet researchers have explored the link(s) between concentrated poverty and crime in neighborhoods almost at the exclusion of gentrifying neighborhoods. In gentrifying neighborhoods, the de-concentration of poverty is likely as more affluent households enter into previously disinvested neighborhoods (Kennedy & Leonard 2001). This apparent tunnel vision of researchers may be due in part to research showing that, since 1970, a greater number of urban neighborhoods exhibit high poverty rates (Jargowsky 1994; Jargowsky & Bane 1990; Kasarda 1992, 1993). Since these disadvantaged neighborhoods tend to have high levels of violent crime as well, this focus on disadvantaged neighborhoods makes some sense. Nonetheless, questions remain about potential changes in the crime rates of initially disadvantaged neighborhoods that begin to gentrify and become more advantaged over time. Since little research has been conducted to show the crime trends of neighborhoods that are undergoing gentrification, this thesis will offer a preliminary attempt at filling the gap.

### *Defining Gentrification*

Scholars commonly credit sociologist Ruth Glass with the first definition of gentrification (Atkinson 2003; Butler 2003; Smith 2002; Schaffer & Smith 1986). In



1964, Glass identified the phenomenon through which the British working class was experiencing residential displacement. According to Glass,

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.... Once this process of ‘gentrification’ starts in a district it goes on rapidly until all or most of the working class occupiers are displaced and the whole social character of the district is changed (1964, xix).

Since then, urban sociologists have continued to study the causes and effects of this complex social process. This process has received multiple labels, such as “urban renewal”, “urban revitalization”, and “gentrification”, contributing to a lack of consensus concerning its meaning.<sup>4</sup> However, some researchers have highlighted differences between the various terms. These researchers argue that urban renewal is state and/or developer-driven, while gentrification is a more bottom-up process, involving new and more affluent residents’ renovations of property in lower income areas (Lambert & Boddy 2002). On the other hand, others have used “urban renewal” and “gentrification” interchangeably (Betancur 2002), or identified gentrification as a type of urban renewal (Carmon 1999).

Further complicating the definition of gentrification is the transformation in the nature of the process over the last two decades as it moved from involving the displacement of industrial working class residents to the involvement of multiple classes and parties, including real estate developers and governments (Bounds & Morris 2005; Hackworth 2002). Albeit true, this claim ignores the varied manifestations of

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<sup>4</sup> For a review on the lack of a clear and concise definition for gentrification, see Bourne (1993) and Slater (2000).

gentrification across the United States and the world. As Lees argued, “Gentrification occurs in various ways in different neighbourhoods of different cities, comprising diverse trajectories of neighbourhood change and implying a variety of protagonists” (2000, as cited in Van Criekingen & Decroly 2003, 2451). Although gentrification in New York City and other places like Sydney, Australia may be entering new phases of gentrification that involve the participation of the government and developers (Bounds & Morris 2005; Hackworth 2002), the municipal government of Chicago has been involved in gentrification in the Lincoln Park community since the late 1950s (Betancur 2002).<sup>5</sup>

As a result of the complexity of gentrification and its multiple meanings, some authors argue that the pursuit of a single definition of gentrification is fruitless (Slater, Curran, & Less 2004; Bounds & Morris 2005). Atkinson (2002) contends, however, that most researchers would generally agree that gentrification involves the "class-based colonisation of cheaper residential neighbourhoods and, secondly, a reinvestment in the physical housing stock" (2343). Nonetheless, Atkinson points out that debates continue concerning what gentrification is, why it occurs, and who it affects.

Notwithstanding the complexities of defining gentrification, a thorough review of the literature shows that certain common characteristics of gentrifying neighborhoods can be identified. Authors generally highlight racial changes (Sullivan 2007; Freeman & Braconi 2004; Schaffer & Smith 1986), socioeconomic changes (Sullivan (2007); Knotts & Haspel 2006; Freeman & Braconi; Victor 2002; Fidel 1992) and housing changes (Sullivan 2007; Freeman & Braconi 2004; Knotts & Haspel 2006; Victor 2002; Fidel

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<sup>5</sup> Specifically, the City of Chicago “clear[ed] pockets of “slum and blight” (inhabited by low-income tenants—mostly Puerto Ricans and blacks) while making land available for middle- to upper-income housing” (Betancur 2002, 783).

1992) in gentrifying neighborhoods. However, including racial changes (from majority black to white) in a measure of gentrification ignores the possibility that gentrifiers can be black (Knotts & Haspel 2006; Boyd 2005; Prince 2002; Pattillo-McCoy 1999) or even of other races (Nyden, Edlynn, & Davis 2006; Williams 1988). As Boyd (2008) argued, the phenomenon of black elites participating in gentrification is now present in cities such as New York, Chicago, and Philadelphia. Inclusion of racial change as a component of gentrification is problematic because Latinos, blacks, and Asians may all be gentrifiers depending on the city or neighborhood under study.

There are generally more differences than similarities in the way that researchers conceptualize gentrification. Some focus only on socioeconomic characteristics and race. For example, Schaffer & Smith's (1986) well-known study on the gentrification of Harlem highlighted increases in per capita income, increases in median family income, increases in median contract rent, and changes in racial composition as measures of gentrification. Others use various indicators of socioeconomic status alone. In Taylor & Puente's (2004) study on gentrification in Chicago, measures of median household income, median home value, median rent, and percent college were used. Occasionally, property and land use characteristics are included as characteristics of gentrification where, for example, Nyden et al.'s (2006) research on Chicago identified household income changes, property value increases, increased numbers of residential mortgages and business loans, and new construction as evidence of gentrification. Knotts and Haspel (2006) incorporated both housing (housing value, median rent, and increases in the number of housing units) and socioeconomic changes (percent of new households, percent college graduate, percent of persons in professional occupations, median

household income, and percent of persons in poverty) into a measure of gentrification. Incorporating both housing and socioeconomic changes into a measure of gentrification is therefore important.

### *The Benefits and Costs of Gentrification*

Documented benefits and costs of gentrification stemming from both qualitative and quantitative studies also emerged from this review of the gentrification literature. The displacement of existing residents due to increases in property taxes or rent is perhaps the most well-known cost of gentrification, and has received significant attention among scholars (Atkinson 2004; Freeman & Braconi 2004; Lyons 1996; Padilla 1987; Palen & London 1984). This loss of affordable housing often leads to the displacement of residents (Atkinson 2004). Padilla (1987) described the displacement of Puerto Rican residents from various neighborhoods in Chicago, even after these residents became involved in a political fight against their forced displacement. Similarly, Atkinson's study of gentrification in central London discussed the displacement of existing residents due to increased property values and rent, "inducements (cash sums for vacating the premises), harassment, violence and intimidation" (2000, 318).

On the other hand, the benefits of gentrification are numerous. Atkinson (2004) and others noted several benefits, including the physical rehabilitation of neighborhoods (The Center for Urban Research and Learning 2002), an increase in city tax revenues (The Center for Urban Research and Learning), and the "encouragement and increased viability of further development" (112). Although other benefits of gentrification are implied or suggested in the literature, including decreased crime (Berry 2005; Atkinson

2004) and a deconcentration of poverty (Atkinson 2004; Kennedy & Leonard 2001), minimal empirical support exists for the former “benefit.” Therefore, the central goal of this thesis is to study how gentrification affects neighborhood homicide rates specifically.

### *Gentrification and Social Disorganization*

Social disorganization occurs when neighborhoods with high levels of poverty, residential instability and ethnic heterogeneity create conditions in which residents are unable to exert informal social control over the area. In the earliest articulation of social disorganization theory, Shaw and McKay (1942) explored the importance of macro-level structural variables on crime. In their study, *Juvenile Delinquency in Urban Areas*, Shaw and McKay researched the socio-economically disadvantaged areas, focusing primarily on Chicago. Through their analysis of thirty years of juvenile court referrals, they identified three key neighborhood-level variables that influence the ability of a community to exert social control. These variables, poverty (or low socioeconomic status), residential instability, and ethnic heterogeneity complicated the formation and maintenance of neighbor networks. Residential instability occurred in these neighborhoods because those residents who could leave when it became “economically feasible” did leave (Bursik 1986). Ethnic heterogeneity was important in understanding a community’s ability to organize because it was difficult for existing residents to fight against the influx of new groups (Bursik 1986). Cultural and language differences prevented joint efforts at informal social control. Due to the relationship between these three variables (i.e. poverty, residential instability, and ethnic heterogeneity) and social

disorganization, a community's social control of crime and other deviant behavior would be weakened, allowing crime to flourish.

Inherent in this argument is an assumption that the economic characteristics of communities generally remain stable over time; a finding based on the economic stability of Chicago neighborhoods witnessed over 30 years. Shaw and McKay (1942) used Park and Burgess' Concentric Zone Model to divide Chicago into even grids, mapping average arrest rates during three time periods. They found that one specific area of the city (ecological zone 2) always had high delinquency rates, regardless of the immigrant group inhabiting the zone. Thus, Shaw and McKay (1942) concluded that poverty was the most important predictor of variations in delinquency rates, though residential instability and ethnic heterogeneity were also influential (Bryne & Sampson 1986). It is the degree of heterogeneity, not any specific ethnic or racial group that is important in producing high crime rates, according to Shaw and McKay. This is because crime rates remained stable despite dramatic succession in the racial and ethnic composition of the population in this zone. Subsequent research has demonstrated that a strong positive relationship exists between poverty, residential instability, ethnic heterogeneity, and crime (Blau & Blau 1982; Bordua 1958; Lee 2000; Messner 1982; Shaw & McKay 1942).

Researchers in the social disorganization tradition have attempted to replicate Shaw and McKay's findings. However, many recent social disorganization researchers have been criticized for their assumption of stability. This critique is articulated by Bursik (1986: 41), who claims that it is dangerous to "infer[...] a state of equilibrium from a single wave of data." Rather, neighborhood change may be more common than stability, particularly in the post-industrial period. Tests of social disorganization theory have not

been limited to the American context; international studies of social disorganization have also focused on examining the validity of the theory. For example, Sampson and Groves (1989) conducted the first known direct test of social disorganization theory using data from the British Crime Survey (BCS). Similar to other researchers, they focused on the key variables identified in the work of Shaw and McKay: socioeconomic status, residential instability, and ethnic heterogeneity, yet they were able to add variables measuring the intervening mechanisms between structural characteristics and crime, namely social control and friendship ties that are characteristic of social organization. This study found significant support for the tenets of social disorganization theory.

In the context of gentrification, neighborhoods undergo two conflicting processes. On one hand, gentrifying neighborhoods will exhibit increases in average levels of income, lowering overall poverty rates. More affluent residents move into gentrifying neighborhoods and the overall socioeconomic status of the neighborhood improves (Atkinson 2000; Butler & Robson 2001; Taylor & Covington 1988). As a result, the higher overall level of economic resources that communities can activate increases the possibility of internal organization. According to social disorganization theory, this ability to organize internally should decrease the risk of crime (Butler & Robson 2001; McDonald 1986).

On the other hand, gentrification increases the level of residential instability and may increase ethnic heterogeneity, as the neighborhood experiences economic upgrading. Past studies have found that most gentrifiers are white and high income (Lees 2000; Smith 1996). Although these neighborhoods become less economically disadvantaged through gentrification, the influx of more affluent residents attenuates social cohesion

“because many neighbors are not acquainted yet or else have only known each other for a short time” (Van Wilsem et al. 2006; 228). The process of gentrification, then, may be particularly conflict-ridden as new and different residents ‘invade’ the existing community.

Past studies have shown that conflict does occur between new and existing residents (Betancur 2002; Hackworth 2002; Smith 1996). Betancur (2002) studied gentrification and conflict among residents in the West Town community area of Chicago. His interviews with residents uncovered evidence of several types of conflict, including intimidation of property owners, solicitation, arson, and eviction without notice. Betancur also explored conflicts between community organizations, such as the one between “low-income artists represented by the Near Northwest Arts Council (NWAC) and upwardly mobile forces promoting high-end art and festivals” (805).

The potential conflict in gentrifying neighborhoods may stem from concerns over displacement and resident differences. Existing residents may experience feelings of territoriality and stress, as the potential for displacement increases during gentrification. If the neighborhood actually begins to experience displacement, resentment or anger among existing residents may grow toward the incoming residents. This resentment may manifest itself violently, in greater levels of homicide, just as macro-level general strain theory might predict (Agnew 1999).



Since the focus of this research is on how gentrification affects homicide rates in Chicago neighborhoods, an examination of past studies exploring the gentrification-crime relationship is necessary. In an early theoretical study on gentrification and crime, McDonald (1986) explored crime rates in 14 gentrifying neighborhoods of Boston, New York, San Francisco, Seattle, and Washington, D.C. He found that most of the neighborhoods lost population (particularly young males), had “higher-than-average concentrations of non-family households,” upgraded their housing stock, and experienced an increase in property values (McDonald 1986, 171). Relying on social disorganization theory, he hypothesized that crime rates would initially increase in gentrifying neighborhoods. This is because rent increases can cause the displacement of some residents, and “fewer people know their neighbors” (McDonald 1986, 169). The result of this residential turnover is an inability to control crime in neighborhoods, leading to an increase in crime rates. McDonald’s (1986) empirical results showed, however, that gentrification caused both an increase and decrease in crime rates of different neighborhoods.

McDonald’s study can be criticized on several fronts. First, he did not include details about the criteria he used to select gentrifying neighborhoods. Second, he did not control for possible regression to the mean; that is, he did not consider the possibility that the significant observed differences between neighborhoods could have been due to chance rather than the treatment (i.e. gentrification) (Covington & Taylor 1989). For example, cross-city differences in crime rates observed by McDonald could be due to differences in police reporting practices rather than factors associated with gentrification per se (Covington & Taylor 1989).

Another study that examined the relationship between gentrification and crime was Covington and Taylor's (1989) research on robbery and larceny rates in Baltimore neighborhoods during the 1970s. Covington and Taylor believed that increased conflict would occur in gentrifying neighborhoods, since these neighborhoods were becoming more diverse and tension was characteristic of these areas. Contrary to other authors, Covington and Taylor used a single indicator of gentrification to increase reliability and allow for replication. The authors claimed that using only the current market value of homes to measure gentrification avoided low internal consistency, or the potential for an inadequate measure of gentrification. Their measure of gentrification was an index of appreciation in neighborhood housing values.

Covington and Taylor (1989) argued for the superiority of their approach compared to other studies using multiple indicators of gentrification. However, a gentrification measure with multiple indicators acknowledges the multi-dimensional nature of gentrification. Rather than just being an upgrading and improvement of housing stock, gentrification entails significant demographic and socioeconomic changes of residents. Such changes were not included in Covington and Taylor's (1989) definition of gentrification.

Drawing on social disorganization theory and rational choice theory, these authors claimed that previously socially disorganized neighborhoods were likely to remain disorganized during gentrification. Although they do not provide an explicit rationale for this claim, they insinuate that persistent delinquency should be a result of "continuing population and housing diversity" and incomplete neighborhood change (Covington & Taylor 1989, 164). Their study found that robbery and larceny rates both increased in

gentrifying areas. The authors rationalized that “because revitalization is accompanied by turnover and heterogeneity in gentrifying neighborhoods, the revitalization process may create conditions that are ideal for increases in crime” (Covington & Taylor 165).

However, their data were limited to crime statistics from the beginning of the 1970s to the end of the 1970s. The implication of this short period of study is that long-term changes in the crime rate could not be explored. Rather, the authors were limited to studying a 10-year period, and could have missed other changes in the crime rate during the post-gentrification period.

A more recent examination of the relationship between gentrification and crime showed that residents living in gentrifying neighborhoods were more likely to be victimized than those living in non-gentrifying neighborhoods. Van Wilsem et al. (2006) explored the risk of crime victimization in the Netherlands during a period of heavy gentrification (1994-1998) using Dutch census data, interviews with residents, and data from the Dutch Police Population Monitor. The theoretical basis for their hypothesis that gentrification may stimulate, rather than decrease crime, was social disorganization theory. The authors argued that the socioeconomic upgrading as a consequence of residential turnover that accompanies gentrification may diminish the strength of local ties. In addition, the working trust and shared willingness of residents to intervene in social control would be weakened. The result would be higher crime rates. The authors found that regardless of the crime type (burglary, car-related theft, violence, car vandalism, and other vandalism), victimization risk was higher for residents living in socially improved neighborhoods than those living in non-gentrifying neighborhoods.

The positive relationship between gentrification and crime found in their study provided partial support for social disorganization theory. Specifically, only one of the social disorganization variables (residential instability) mediated the relationship between socioeconomic improvement and local victimization (Van Wilsem et al. 2006). Other variables, including income heterogeneity and ethnic heterogeneity, did not affect victimization risk.

### *Hypotheses*

A series of hypotheses about the relationship between gentrification, social disorganization, and crime can be crafted based on the foregoing discussion. First, the potential for conflict in gentrifying neighborhoods suggests interesting and paradoxical implications for crime trends in neighborhoods. The expected relationship between gentrification and homicide is as follows:

*Hypothesis 1:* Gentrification should increase neighborhood homicide rates in the following year due to increased conflict among residents, even when controlling for the level of neighborhood social disorganization.

The second, third, and fourth hypotheses predict how the three key constructs of social disorganization theory predict homicide in gentrifying and non-gentrifying neighborhoods. First, although originally conceptualized as residential turnover, this thesis uses residential stability to capture the extent to which original residents of gentrifying neighborhoods remain in their neighborhoods. Residential instability, or neighborhood change, is an important predictor of crime for all types of neighborhoods according to social disorganization theory (Sampson & Wilson 1995; Warner & Pierce 1993; Bursik 1986). Different forces, including natural succession, gentrification,

suburbanization, and residential preference, may independently drive neighborhood change. Gentrification, however, involves very distinct processes. These processes, which may include displacement, create a greater potential for conflict. Even though social disorganization theory predicts that residential stability is negatively related to crime in all neighborhoods, the processes associated with gentrification leads to different expectations concerning the relationship between residential stability and homicide. Indeed, the opposite relationship may be expected when greater numbers of existing residents live in communities beginning to gentrify, due to the potential for conflict that typically occurs between existing and incoming residents early in the process of neighborhood change:

*Hypothesis 2:* Contrary to social disorganization theory, the residential *stability* of gentrifying neighborhoods should be positively related to the homicide rate in the following year. This is because residential stability signals proportionately greater numbers of original residents in the community, who have yet to be displaced.

Second, social disorganization theory posits a positive relationship between economic disadvantage and crime. Previous discussions of the changes accompanying gentrification include the shift from an economically disadvantaged area to a more economically advantaged area. Thus, the hypothesized relationship between economic disadvantage and homicide is as follows:

*Hypothesis 3:* According to social disorganization theory, the degree of economic disadvantage in a neighborhood should be positively related to homicide in the following year, and this relationship should hold for both gentrifying and non-gentrifying neighborhoods.

Finally, ethnic heterogeneity is an important feature of social disorganization theory. This thesis follows in the work of others and utilizes racial heterogeneity in place

of ethnic heterogeneity (Warner & Pierce 1993; Sampson 1985). As the measure of gentrification used in this study does not include racial change (see Chapter 3), the degree of racial heterogeneity in neighborhoods is included as an independent variable tapping a key component of the social disorganization model. The relationship between racial heterogeneity and homicide should be as follows:

*Hypothesis 4:* Consistent with social disorganization theory, racial heterogeneity will be positively related to homicide in the following year in both gentrifying and non-gentrifying neighborhoods.

Overall, very few studies have specifically examined the gentrification-crime relationship. Similar to McDonald and subsequent researchers, I intend to utilize a longitudinal approach to understand the variables that impact homicide rates in the following year of gentrifying areas in Chicago, as well as the impact of gentrification on homicide from 1970 to 1995. The census and homicide data utilized in thesis will allow for such an exploration, as overall homicide trends can be explored for all census tracts. In exploring both gentrifying and non-gentrifying neighborhoods over almost three decades, this study contributes to the literature in the following ways. First, rather than providing a snapshot of a handful of gentrifying neighborhoods, this research provides an examination of hundreds of gentrifying neighborhoods in Chicago over a period of twenty-six years and compares them to neighborhoods in the remainder of the city. Second, the three key social disorganization variables are separately analyzed to determine the effects of residential stability, ethnic heterogeneity, and the economic status of neighborhoods on their homicide rates. In providing a pooled cross-sectional time series analysis of homicide trends in all neighborhoods as well as gentrifying and

non-gentrifying neighborhoods in Chicago, IL, the results of this study will contribute to the emerging literature on urban change, in the form of gentrification, and violence.

### **Chapter 3. Data and Methods**

Recent American studies designed to test the validity of Shaw and McKay's theory often utilize census data to capture neighborhood characteristics. For example, the level of socioeconomic disadvantage is most directly related to poverty levels, or the percentage of all people living below the federal poverty level in census tracts (Kawachi, Kennedy, & Wilkinson 1999; Silver 2000; Osgood & Chambers 2000). Residential stability is usually measured as the percentage of residents who lived in the same housing unit five years earlier (Sampson 1985; Silver 2000; Osgood & Chambers 2000). The last variable, ethnic heterogeneity, is commonly operationalized by multiplying the proportion African American by proportion white (Miethe & McDowall 1993; Smith, Frazee & Davison 2000) or by using the Index of Diversity, calculated as  $1 - (\sum p_i^2)$ . In this index,  $p_i$  is the proportion of households of a given ethnic group, which is squared and summed across the different groups (Osgood & Chambers 2000; Sampson & Groves 1989). This index measures the probability of selecting two random individuals from the population of different races (Blau 1977).

An additional variable included in studies using social disorganization theory is family disruption or family structure (Sampson 1987). This variable is commonly measured through the percentage of households headed by a single mother (Kawachi et al. 1999; Osgood & Chambers 2000; Smith et al. 2000). The rationale behind the inclusion of this variable is that single-parent households may provide less supervision and control to youth than two-family households (Sampson 1987). Sampson (1986) found support for the positive impact of family disruption on crime rates. Specifically, family disruption "had strong effects on robbery and homicide offending" (303). It is important to note, however, that the impact of family disruption may have differential effects for



different races. For example, Sampson (1986) argued that such disruption might more negatively impact black families than white families because the pool of marriageable men is smaller for black women than it is for white women. With such a small pool, black women may experience “prolong[ed] periods of financial stress and [family] disruption” (Sampson 1987, 305).

Since social disorganization theory is concerned with aggregate ecological relationships, researchers operating within this framework generally use data at the neighborhood level.<sup>6</sup> Although the operationalization of “neighborhoods” varies depending on data availability and the scale at which the social process is expected to operate (Hipp 2007), the census tract is the most common proxy for neighborhood boundaries (Silver 2000; Walsh & Taylor 2007). Census tracts are a powerful neighborhood delineation, because they provide large sample sizes and generalizability. The boundaries of census tracts are also relatively permanent, allowing for the testing of variables over time (U.S. Census 2001). These areas typically comprise between 2,500 and 8,000 persons, and do not cross county boundaries. Since census tracts were originally designed to be “homogeneous with respect to population characteristics, economic status, and living conditions,” they represent appropriate aggregate units for testing social disorganization theory (U.S. Census Bureau 2000). Census tracts are used in this study because of the wealth of available data, size, homogeneity, and comparability over time (White 1987).

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<sup>6</sup> However, there are some exceptions to the use of neighborhood level data. One such exception occurred in Kawachi et al.’s (1999) study, in which the authors utilized state level data to explore the relationship between income inequality/social cohesion and social wellbeing.

Tract-level census variables are available in the Neighborhood Change Database (NCDB) (Geolytics 2004). This database contains U.S Census data from 1970, 1980, 1990, and 2000. The variables and their selected measures are included in Appendix A. An important advantage of this dataset is that the tract-level data is normalized to the census tract boundaries of 2000, allowing for a comparison of data for various years within the exact same geographic boundaries. Since my study focuses on annual homicide rates in both gentrifying and non-gentrifying neighborhoods from 1970 to 1995, this database is an ideal data source.

### *Measuring Social Disorganization*

The social disorganization variables selected from the Neighborhood Change Database for this analysis include a measure of residential stability, racial heterogeneity, an index of socioeconomic disadvantage that includes percent of female-headed households, percent of people living in poverty, and percent of the population that is black. Socioeconomic disadvantage was constructed as an index due to high correlations between the latter three variables (see Appendix B). The racial heterogeneity index was calculated using the formula:  $1 - (\sum p_i^2)$ . In this index,  $p_{i1}$  is the proportion of black households in a tract, squared. This value is then added to  $p_{i2}$ , or the proportion of white households, which is also squared. After these two values are added, the result is then subtracted from 1 to obtain the racial heterogeneity index (Osgood & Chambers 2000; Sampson & Groves 1989). Additionally, the control variables included the percent of the civilian population 15 years and older who are unemployed as well as the percent of the population who are both male and young (aged 16 to 34).

### *Measuring Gentrification*

On the basis of existing literature, the definition of gentrification used in this thesis will be the *social upgrading of a neighborhood* demonstrated by increases in rent prices, the percentage of professionals and managers, and the percentage of people with higher education degrees.<sup>7</sup> In order to identify the census tracts undergoing gentrification during any decade, I use a measure of gentrification that captures dramatic increases in the percentage of people employed in professional and managerial occupations, median rent, and the percentage of individuals aged 25 and older who graduated from college over each decade (i.e. 1970 to 1980, 1980 to 1990, and 1990 to 2000).

A review of the literature failed to isolate a common or accepted threshold for changes in these variables that would be necessary to identify a neighborhood as “gentrifying.” Some authors used a methodology that involved a statistical algorithm. Hammel and Wyly (1996), Wyly and Hammel (1999), and Bostic and Martin (2003) identified several descriptive factors associated with gentrification and summed those factors to create a gentrification score. Bostic and Martin (2003) ranked the tracts based on changes in the poverty rate, the black and white populations, managerial and administrative workers, college educated population aged 25 and above, home ownership rate, and other factors. The tracts with the lowest average rank were identified as gentrifying. Several other authors constructed a comparison baseline between variables at their unit of analysis (i.e. census tracts) and an aggregated level (i.e. cities) (Atkinson

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<sup>7</sup> The inclusion of median home price as a measure of gentrification was not feasible because the Neighborhood Change Database does not provide this data at the census tract level in 1970 or 1980. Nonetheless, changes in the median rent provide some indication of the value of residential property in the neighborhoods.

2000; Lyons 1996). Using small geographical areas (wards) defined by the British government, Atkinson (2000) identified gentrifying areas by calculating the average occupational rate for London, and selecting areas that exceeded this average occupational rate. This baseline for the average occupational rate was constructed to determine whether or not the observed changes in the variables of interest at the ward-level exceeded changes at the city level. If a ward exceeded the city level, then Atkinson identified it as gentrifying.

After identifying the average citywide level for the three variables of interest at 1970, 1980, 1990, and 2000, I measured the degree of change between each decade. Census tracts that significantly exceeded the citywide average changes on these key census variables over each decade were treated as gentrifying neighborhoods. More specifically, the city baseline was created using the aggregated average values for all census tracts of median rent, percentage of people 25 years and older with college/grad degree, and percentage of persons employed in professional/managerial occupations. Starting with 1980, I compared the values for these variables from 1970 to determine the citywide average increase/decrease for these variables over the 1970s. Using the analytical software SPSS, I identified census tracts that exhibited each of the following: a 20 percent increase in median rent, a 20 percent increase in the percentage of people 25 years and older with college/graduate degree, and a 20 percent increase in the percentage of residents employed as professionals/managers compared to the average citywide change over the same period. The selection of the 20 percent increase above any increase in the city baseline is designed to capture excessively large changes in these respective variables compared to changes in all of Chicago. If a census tract showed a 20 percent or

greater increase than the citywide change on *all* of these three measures between 1970 and 1980, then the neighborhood was deemed to have “gentrified” during the 1970s, for example.

This measure of gentrification is particularly conservative because tracts needed to meet all of the three criteria to be identified as gentrifying. After creating the three gentrification measures at the 20 percent above mean change level, I identified a total of 256 census tracts in Chicago that gentrified at some point between the 1970s and the 1990s. These gentrifying tracts represent 29.9 percent of the 855 Chicago census tracts included in the analyses.<sup>8</sup>

After identifying the number of census tracts gentrifying at any point, I performed a linear extrapolation of the variables from the Neighborhood Change Database. Restricting the analysis to variables with data from 1970, 1980, 1990, and 2000 would limit my data points (or tract-years). An alternative was to perform a linear extrapolation, which predicted the values for years between the decennial censuses based on initial levels. Using the percent of people living in poverty as an example, the value for 1970 was subtracted from 1980 and divided by 10 to obtain an annual increase/decrease. If the percent of people living in poverty was higher in 1980 than 1970, then the annual change would be positive. Using this annual change value for percent poverty, I constructed values for the years 1971 through 1979 for each tract in the city. This process was repeated for every NCDB variable between 1970 and 1980, 1980 and 1990, and 1990 and 2000. The advantage to performing a linear extrapolation is that I now have 6,656 ( $256 * 26$ ) tract-years for my analysis of gentrifying census tracts rather than 1,024 ( $256 * 4$ ).

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<sup>8</sup> There were 866 census tracts identified in the city of Chicago. However, only 855 tracts had population greater than 100, and were therefore eligible for inclusion in these neighborhood analyses.

For the entire dataset which includes both non-gentrifying and gentrifying census tracts, I increased my time points for analysis from 3,420 (855 \* 4) to 22,230 (855 \* 26) tract-years. An additional mutually exclusive categorical variable named “time of gentrification” was constructed based on the decade(s) that any given census tract underwent gentrification.

I have confidence that this method is both valid and reliable because my measure of gentrification identified census tracts in both West Town and Lincoln Park as ‘gentrifying.’ West Town and Lincoln Park have both been described by other researchers as undergoing gentrification during the period.<sup>9</sup> Beginning in the mid to late 1960s, gentrification began in West Town and continued in subsequent decades (Betancur 2002; Fidel 1992; Wyly & Hammel 1998). This process actually accelerated during the 1990s, as credit became more widely available due to an economic boom, politicians committed to gentrification were elected to office, and a “citywide and local partnership between city hall and real estate developers formed around redevelopment of the city’s real estate market for the middle class” (Betancur 2002, 790). My gentrification measure identified 13 census tracts in West Town that underwent gentrification during the 1970s, seven during the 1980s, and 11 during the 1990s. Thus, 31 of the 35 tracts in West Town were defined as undergoing gentrification at some point between 1970 and 2000 according to my three criteria.

The community area of Lincoln Park was another neighborhood that underwent gentrification beginning in the 1960s (Betancur 2002; Fidel 1992; Wyly & Hammel 1998). According to Fidel, gentrification in Lincoln Park created significant housing

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<sup>9</sup> For West Town and Lincoln Park, research from Betancur (2002), Wyly and Hammel (1998), and Fidel (1992) confirms the occurrence of gentrification during the time periods of interest.

renovation and rehabilitation along with housing destruction and new construction.

During the 1970s, gentrification increased and continued to do so throughout the 1980s as population density decreased and "new residents tended to be young, childless, and of high social status" (Fidel 159). For Lincoln Park, my gentrification measure identified 14 census tracts that gentrified during the 1970s, five of which continued gentrifying during the 1980s, and two additional gentrifying census tracts during the 1990s. In total, 16 of 20 census tracts in Lincoln Park gentrified at some point between 1970 and 2000 according to my operationalization. Comparing these gentrifying tracts to past research on the location and occurrence of gentrification in Chicago, I conclude that my measure of gentrification is a conservative, but representative, estimate.<sup>10</sup>

#### *Homicide Dataset Variables*

For this study, the dependent variable of interest is homicide rates. Information on the dependent variable was retrieved from the public-use Chicago Homicide Data Set, which included a census tract identifier for each homicide that occurred between 1965 and 1995 (Block & Block 1998). I identified the number of homicides in each census tract for each year between 1970 and 1995 using the tract identifiers, and then converted these counts to rates, by dividing the homicide count by the total tract population for each

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<sup>10</sup> Work on the gentrification of community areas in the city of Chicago shows that gentrification does not happen simultaneously throughout the area. Rather, it happens in different forms and at different times. Fidel's (1992) work on the community area of Lincoln Park shows how neighborhoods such as the University area experienced gentrification in close proximity to and because of the gentrification occurring in the nearby Central neighborhood. He labels the University area as one that experienced spillover gentrification, because "the demand for housing in a gentrifying community [Lincoln Park] exceed[ed] the supply in the original area of change [Central]" (147). Given this spatial pattern of gentrification, I believe that my utilization of census tracts, instead of community areas, is an appropriate level at which to measure neighborhood change associated with gentrification.

census tract and multiplying by 1,000. Since the tract population variable was retrieved from the decennial census for 1970, 1980, 1990, and 2000, I conducted a linear extrapolation of the population data using SPSS to estimate annual homicide rates for the 855 tracts with population greater than 100 in all decades.

The dependent variable, or the homicide rate for a given census tract, was lagged by 1 year. Longitudinal research on crime suggests that such a transformation is necessary to control for any external factors that indirectly affect the homicide rate (Kovandzic & Sloan 2002; Marvell & Moody 1996; Miethe, Hughes & McDowall 1991). Specifically, “including the lagged value of each crime rate ( $Y_{t+1}$ ) allows study of change in crime rates and permits the effects of the exogenous variables to be distributed over more than one period” (Miethe, Hughes & McDowall 1991, 174).

Lagging the dependent variable allows me to add the neighborhood homicide rate at time  $t$  as a control variable. This is important because the homicide rate in a prior year may be strongly related to its value in the following year. For example, to predict neighborhood homicide rates in the year 1971, the neighborhood homicide rate at 1970 is included as a control variable in the analysis of the relationship between the independent variables at time  $t$  and the lagged homicide rate in 1971 ( $t+1$ ). Additionally, the impact of gentrification on homicide may be delayed. Rather than a contemporaneous effect, the effect on homicide rates may begin to occur many months after the process of gentrification has begun. The inclusion of the lagged homicide rate allows for the time ordering of the independent variables and the dependent variables. This study examines, therefore, the causal relationships between these variables, rather than associations alone.



The lag transformation of the dependent variable allows for possibility that there is a delayed impact of gentrification on homicide.

The citywide summary statistics for both the dependent variable and independent variables are provided in Table 3.1.

**Table 3.1. Summary Statistics for City of Chicago**

<b>Variable</b>	<b>Observations (tract-years)</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Range</b>
<b><u>Dependent Variable</u></b>				
<b>Homicide Rate<sub>t+1</sub>, per 1000</b>	21921	.351	.82	0 to 28.21
<b><u>Independent Variables</u></b>	21922	55.246	14.654	0 to 100
<b>Percent Residentially Stable</b>				
<b>Racial Heterogeneity Index</b>	21922	.251	.26	0 to .999
<b>Economic Disadvantage Index</b>	21922	.019	.884	-1.19 to 2.79
<i>Percent Poverty</i>	21922	21.707	16.725	0 to 93.778
<i>Percent Female Headed Households</i>	21922	34.429	22.61	0 to 100
<i>Percent Black</i>	21922	36.962	41.76	0 to 100
<b><u>Control Variables</u></b>	21922	.351	.82	0 to 28.21
<b>Homicide Rate</b>				
<b>Percent Young Male (ages 16 to 34)</b>	21922	15.967	5.575	0 to 87.75
<b>Percent Unemployed</b>	21922	11.437	.089	0 to 82.41

According to Table 3.1, the average annual homicide rate for the city of Chicago was .35 per 1,000 persons. In the city of Chicago, over half of the residents (55.2

percent) five years and older lived in the same residence five years earlier. As previously discussed in Chapter 1, Chicago is a highly segregated city; a finding reflected in the city's value on the racial heterogeneity index. Table 3.1 shows that this value is .25, identifying Chicago as a city where blacks and whites generally live in racially homogenous neighborhoods.

Also of theoretical interest is the high poverty rate in Chicago. Past research on urban poverty and the underclass identifies three categories of poverty: high poverty (20 to 39 percent), extreme poverty (more than 40 percent), and low poverty (less than 20 percent) (Jargowsky 1997; Kasarda 1993; Wilson 1987). The mean percent in poverty for Chicago is 21.7 which categorizes the city as high poverty, although there is a great deal of variation across neighborhoods. There are also a high percentage of households in Chicago that are headed by females. Approximately one-third of the total households are female-headed in Chicago and over one-third of the residents in the city are black (37.0 percent), 16.0 percent are young males, and 11.4 percent are unemployed. Through these summary statistics, we are able to see an overall picture of the city of Chicago, although these variables represent fairly approximate estimations. This is because the summary statistics are an aggregation of data taken across the 855 census tracts over the entire 26-year period. The large ranges for most of these variables suggest wide variation either across neighborhoods in the city or over time.

Several of the variables had bivariate correlations greater than .70 (see Appendix B). In order to correct for this potential source of multicollinearity, I created an index of economic disadvantage. A review of the literature found several authors who utilized a

similar approach (Barnett & Mencken 2002; Land et al. 1990).<sup>11</sup> The index is a combination of the following measures (factor loadings in parentheses) percent in poverty (.88), percent black (.87), and percent of households that are female-headed (.94). Percent black was included in the index because, in Chicago, race and poverty are highly correlated. The factor analysis of these measures reveals one factor with a Cronbach's reliability coefficient of .7882.<sup>12</sup> In order to create the index, z-scores for each individual variable were calculated by dividing the mean by the standard deviation. The z-scores were then added together and divided by three, resulting in an economic disadvantage score for each tract. Higher scores on this index indicate worsening community socioeconomic conditions. In Chicago, the citywide average for the economic disadvantage index is .019. This number is relatively low, and indicates that overall city economic conditions are relatively good, though again there is much variation across neighborhoods (i.e. -1.19 to 2.79).

A multicollinearity check of the dependent and independent variables was also conducted using STATA. The results of this collinearity check are included in Appendix C. None of the Variance Inflation Factors (VIF's) were higher than 3.08, lower than the threshold of 4.0 at which collinearity is considered a problem (Garson 2008). A tolerance level below .20 is also suggestive of multicollinearity. None of the variables had a tolerance level below 0.20.

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<sup>11</sup> Barnett and Mencken created an index of percent in poverty, Gini index, percent female-headed households, and unemployment rate, for example.

<sup>12</sup> An index was also created using percent in poverty, percent black, percent of households that are female-headed, and percent unemployed. However, this 3-item index was utilized because its Cronbach's alpha (.7882) was higher than compared to the scale with four items (.7018). Both percent unemployed and percent young males (i.e. males aged 16 to 34) are included as separate control variables.

## Method

Given the dearth of literature on gentrification and its relationship to crime or violence, this study is valuable for its temporal analysis of gentrifying neighborhoods in Chicago, IL. Specifically, by performing a time-series analysis of both the dependent variable (tract homicide rate per 1,000, lagged by one year) and various independent variables (derived from social disorganization theory), I am able to identify the predictors at one time point on homicide rates in a subsequent time period. In contrast to a random-effects time series model, fixed-effects models offer important advantages. This approach “controls for unmeasured time-stable characteristics of census tracts” (McCall et al. 2008, 728). The result is that estimates of slope parameters are unbiased, assuming that there is no unmeasured time-invariant tract attributes that produce differences in the homicide rates (Halaby 2004; McCall et al. 2008; Jacobs & Richardson 2008). A fixed effect model also makes one important assumption. This is that the covariate slopes in the model are identical across all tracts, “although the intercepts vary by [tract] ( $v_i$ ) and time ( $\lambda_t$ )” (McCall et al. 2008, 728). A general specification of the fixed-effects model for the city of Chicago is as follows:

$$\begin{aligned} \text{(Lagged) Homicide rates}_{t+1} = & b_0 + b_1\text{Gentrified}_t + b_2\text{Economic Disadvantage} \\ & \text{Index}_t + b_3\text{Racial Heterogeneity Index}_t + b_4\text{PercentResidentially Stable}_t + \\ & b_5\text{Homicide Rate}_t + b_6\text{PercentUnemployed}_t + b_7\text{PercentYoung Male}_t + \varepsilon_{i,t} \end{aligned}$$

Subsequent analyses are conducted on both gentrifying and non-gentrifying neighborhoods separately. A general specification for both is similar to the above, except for the conditional “if” statement that selects tracts on the basis of whether or not they underwent gentrification. This equation represents Models 2 and 3.

(Lagged) Homicide rates $_{t+1} = b_0 + b_1$ Economic Disadvantage Index $_t + b_2$ Racial Heterogeneity Index $_t + b_3$ PercentResidentially Stable $_t + b_4$ Homicide Rate $_t + b_5$ PercentUnemployed $_t + b_6$ PercentYoung Male $_t + \varepsilon_{i,t}$ , if Gentrified = 0 or 1<sup>13</sup>

This study has many advantages. It first identifies whether gentrification has an effect on neighborhood homicide in the following year, controlling for a host of social disorganization characteristics. It then offers a comparison on numerous variables of interest between gentrifying and non-gentrifying neighborhoods. T-tests of differences are conducted to determine if the effects of the main independent variables differ between gentrifying and non-gentrifying tracts. This approach will help me to clarify the applicability of social disorganization theory (captured in the economic disadvantage index, the racial heterogeneity index, and the percent residentially stable) in explaining homicide rates in gentrifying and non-gentrifying neighborhoods.

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<sup>13</sup> Gentrification was coded 0 (did not undergo gentrification in that year) or 1 (underwent gentrification in that year).

## Chapter 4. Results

This chapter will begin with a presentation of the t-test of differences on all independent variables between gentrifying and non-gentrifying neighborhoods to identify any differences between the two neighborhood types. It will then proceed with an examination of the dependent variable. Since the dependent variable in this analysis is the lagged homicide rate, it is important to understand homicide over time and across neighborhoods. The average homicide rates will be graphed for the city of Chicago. The three main models of this thesis will explore the impact of social disorganization variables on homicide rates for 1) the city of Chicago, 2) gentrifying neighborhoods only, and 3) non-gentrifying neighborhoods only.

Table 4.1 provides a preliminary examination of the differences that exist between the Chicago neighborhoods that underwent gentrification compared to those that did not on key independent variables and the dependent variable. T-tests of differences are conducted to determine whether gentrifying neighborhoods are significantly different from non-gentrifying neighborhoods on this series of variables. Included in this table is the number of observations (tract-years), along with the mean, standard error, standard deviation, and t-test results. As previously explained in Chapter 2, social disorganization theory would predict that neighborhoods with high economic disadvantage, high racial heterogeneity, and high levels of residential instability have higher levels of crime.

For neighborhoods undergoing gentrification, one of the three social disorganization variables is expected to be higher than non-gentrifying neighborhoods. Specifically, the racial heterogeneity index in gentrifying neighborhoods should be greater than in non-gentrifying neighborhoods. Instead of a higher score on the economic

disadvantage, gentrifying neighborhoods should exhibit a lower score. Neighborhoods that experience gentrification are also expected to have less residential stability, or lower percentages of people that lived in the same house five years earlier compared to non-gentrifying neighborhoods.

**Table 4.1. Gentrified and Non-Gentrified Neighborhoods**

Variable	Group	Observations (tract-years)	Mean	Standard Error	Standard Deviation	Significance
Homicide Rate per 1000 persons, lagged	Did not gentrify	19049	.352	.006	.803	0.413
	Gentrified	2872	.339	.017	.924	
Percent Residentially Stable	Did not gentrify	19049	56.214	.104	14.458	0.000*
	Gentrified	2873	48.826	.267	14.332	
Racial Heterogeneity Index	Did not gentrify	19049	.237	.002	.259	0.000*
	Gentrified	2873	.340	.005	.251	
Economic Disadvantage Index	Did not gentrify	19049	.058	.006	.907	0.000*
	Gentrified	2873	-.233	.012	.649	
<b>Percent Poverty</b>	Did not gentrify	19049	21.944	.124	17.143	0.000*
	Gentrified	2873	20.136	.256	13.729	
<b>Percent Black</b>	Did not gentrify	19049	39.639	.309	42.634	0.000*
	Gentrified	2873	19.206	.556	29.785	
<b>Percent Female-Headed Households</b>	Did not gentrify	19049	34.429	.165	22.629	0.000*
	Gentrified	2873	27.604	.342	18.377	
Homicide rate, per 1000 persons	Did not gentrify	19049	.352	.006	.803	0.413
	Gentrified	2873	.339	.017	.924	
Percent Young Male	Did not gentrify	19049	15.669	.04	5.574	0.000*
	Gentrified	2873	17.952	.113	6.053	
Percent Unemployed	Did not gentrify	19049	11.869	.067	9.212	0.000*
	Gentrified	2873	8.577	.127	6.8171	

\*p≤0.05

The results of this table show that strong and significant differences exist between gentrifying and non-gentrifying neighborhoods. On the whole, gentrifying neighborhoods in Chicago exhibited lower levels of residential stability, lower levels of economic disadvantage, and higher values of racial heterogeneity. These results are consistent with expectations concerning the social and demographic changes that accompany gentrification. Namely, gentrification represents an upgrading of neighborhoods. Note, for example, that the economic disadvantage index in non-gentrifying neighborhoods (0.058) was significantly higher than gentrifying neighborhoods (-0.233). A separate analysis of the three variables that make up the economic disadvantage index shows that gentrified areas had proportionately lower levels of poverty, female-headed households, and black population. These three variables are separately analyzed in the t-test of mean differences for summary purposes only, because they jointly comprise the economic disadvantage index.

While the largest difference between gentrifying neighborhoods and non-gentrifying neighborhoods can be found in their respective values on the economic disadvantage index, homicide rates in gentrifying areas were not significantly different than in non-gentrifying areas in these bivariate comparisons. This result may be due to the differential impact of the social disorganization variables on homicide in gentrifying and non-gentrifying neighborhoods. In non-gentrifying neighborhoods, the economic disadvantage index, residential instability, and racial heterogeneity are all expected to increase the level of social disorganization, and consequently, the homicide rate. However, these processes are expected to differ in gentrifying neighborhoods because of the “social upgrading” associated with gentrification. Specifically, gentrifying

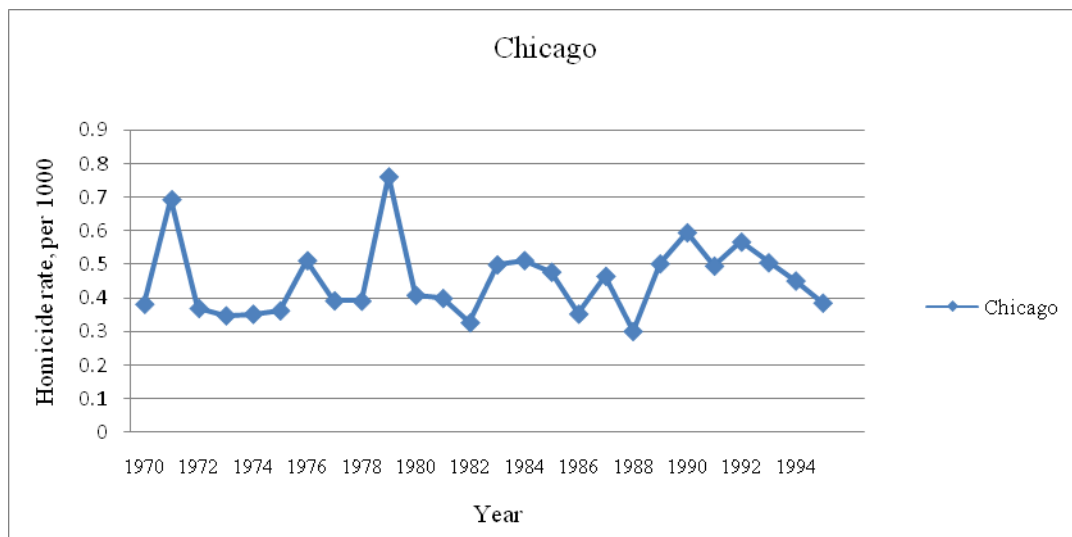


neighborhoods should exhibit greater residential instability and racial heterogeneity, which exacerbates social disorganization and leads to greater rates of homicide. At the same time, gentrifying neighborhoods will be more economically advantaged, leading to lower rates of homicide. Therefore, the differential social processes in non-gentrifying neighborhoods and gentrifying neighborhoods may contribute to the non-significant differences in homicide. This potential necessitates the importance of examining the effects of the three social disorganization variables separately in the analyses below.

### Homicide Rates in Chicago

According to Figure 4.1, the city of Chicago experienced both decreases and increases in the average lagged homicide rate per 1,000 residents. During the 1970s, the homicide rate declined, although it exhibited a sharp peak in 1979.

*Figure 4.1. Average Homicide Rates per 1,000 for all Chicago Neighborhoods*



After some volatility in the early to mid 1980s, the homicide rate began to climb followed by a steady decline from 1992 to 1995. Criminologists studying homicide trends in

Chicago during the 1980s and 1990s have observed similar trends (Block & Christine 1997; Griffiths & Chavez 2004). Likewise, national homicide rate trends show that the levels rose in the late 1980s before falling after a peak in the early 1990s (Fox & Zawitz 2007). The available data in this study show a similar trend for the city of Chicago. Since this study is based on the census tracts comprising the city of Chicago, it is important to understand the citywide trends in homicide. However, citywide trends mask the important variations across neighborhoods. In the forthcoming analyses, the average homicide rates and their relationship with the social disorganization variables will be explored both across and within neighborhoods, with particular attention directed at differences between gentrifying and non-gentrifying tracts.

### **Fixed-Effects Pooled Cross-Sectional Time Series Models**

Time-series analysis is an ideal method for the purposes of this analysis. It allows for an examination of the variables that may influence the homicide rate of each neighborhood over time. The results of the pooled cross-sectional, time-series analysis predicting homicide rates are displayed in Table 4.2. First, the findings are discussed in terms of the effects of the social disorganization variables on the homicide rates for all Chicago neighborhoods (Model 1). Models 2 and 3 compare these same variables for non-gentrifying neighborhoods and gentrifying neighborhoods.

#### *Results for Model 1: City of Chicago*

The results of Model 1 in Table 4.2 show that only one of the social disorganization variables is relevant for understanding annual patterns in homicide rates for neighborhoods in the city of Chicago between 1970 and 1995. Specifically, the

strongest relationship is found between the economic disadvantage index and the homicide rate. A one percent increase in the economic disadvantage index is associated with a .056 increase in the homicide rate per 1,000 residents in the following year. The positive sign indicates that neighborhoods in Chicago with higher percentages of people living in poverty, female-headed households, and black residents have significantly higher homicide rates in the following year.

As previously mentioned, these separate independent variables were not individually entered into the time series model. Rather, percent black, percent female-headed households, and percent living in poverty were combined into the economic disadvantage index because they were highly correlated. Therefore, it is possible that many of the residents in question were black *and* poor *and* headed by a female.

**Table 4.2 Time-Series Regression Results Predicting Neighborhood Homicide Rates at Time 2, Chicago 1970 to 1995**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
	City of Chicago (all neighborhoods) (N=21921 tract years neighborhoods)	Non-Gentrifying Neighborhoods (N=19049 tract years)	Gentrifying Neighborhoods (N=2878 tract years)
Percent Residentially Stable	-.000	-.002**	.015***
Economic Disadvantage Index	.056*	.073***	-.012
Racial Heterogeneity Index	.026	-.015	.583***
Gentrifying	-.029*	--	--
<b>Control Variables</b>			
Homicide Rate	.086***	.098***	-.072***
% Young Male	-.011***	-.008***	-.013* **
% Unemployed	.005***	.005***	-.012**
<b>Overall Fit of Model</b>			
R squared within <sup>^</sup>	.013	.014	.022
R squared between	.456	.533	.131
R squared overall	.146	.178	.018
Tract-years	21921	19049	2872

\*p<.10 (1 tailed)

\*\*p<.05 (1 tailed)

\*\*\* p<.01 (1 tailed)

<sup>^</sup> R squared within is the ordinary R squared

This finding for the economic disadvantage index is not only consistent with social disorganization theory, but also with Wilson's structural theory of urban crime. According to Wilson (1987), the high levels of crime observed in black neighborhoods are due to high levels of concentrated poverty and disadvantage. Although his observation concerns black neighborhoods, Krivo and Peterson (1996) argue that his hypotheses can be extended to all neighborhoods. Often conceptualized as community disadvantage (Baumer & South 2004; Robert & Reither 2004; Krivo & Peterson 1996), the economic disadvantage index (and the variables captured therein) used in this study serve as an indirect measure of the extent to which each census tract encourages criminal behavior and is able to exert social control.

In the context of social disorganization theory, low socioeconomic status (typically measured through percent living in poverty) was conceptualized as a correlate to crime. According to Sampson and Groves (1989), "low socioeconomic status communities will suffer from a weaker organizational base than higher-status communities" (780). The lower levels of informal and formal social control characteristic of these communities lead to higher rates of crime and delinquency. Additionally, recent conceptualizations of social disorganization theory suggest that the percent of households that are female-headed capture the concept of family disruption (Shihadeh & Steffensmeir 1994; Sampson 1987). By definition, female-headed households have one primary guardian and fewer economic resources. A consequence of this, according to recent social disorganization theorists, is less guardianship of youth and decreased informal social control.

The percentage black is also important in understanding crime rates. Research on residential segregation and crime (Massey 1990; Massey, Condran & Denton 1987; Massey & Denton 1993) suggests that black urban areas “are characterized by average levels of poverty, joblessness, family disruption` and other aspects of deprivation that are higher than in white communities” (Krivo & Peterson 1996, 622). Taken together, these three variables that comprise the economic disadvantage index significantly increase homicide rates in Chicago neighborhoods.

The variable “gentrifying” signifies the impact of gentrification on the homicide rates for census tracts during years in which they underwent gentrification. As previously stated, the gentrified variable is coded such that 0 identifies tracts that did not go through gentrification in any given year, and a code of 1 identifies the tracts that experienced gentrification. The direction of the relationship between gentrification and homicide suggests that gentrification does have a meaningful negative impact on homicide rates in Chicago, after controlling for social disorganization and other neighborhood characteristics. Thus, for neighborhoods that underwent gentrification, the homicide rate was lower in the following year compared to those that did not go through gentrification. Put differently, gentrification led to lower homicide rates. This is unexpected, given the first hypothesis provided in Chapter 2 stating that gentrification will lead to higher homicide rates as a consequence of elevated potential for conflict between established residents and newcomers. The remaining independent variables did not exhibit a significant relationship with homicide. Specifically, residential stability and the racial heterogeneity index were not important for understanding the variation in homicide rates

of Chicago neighborhoods. This insignificance can be due to several possibilities, which will be explored more fully in Chapter 5.

Two of the control variables (homicide rate<sub>t</sub> and percent unemployed) display the expected positive relationship to homicide in the following year. The previous year's homicide rate in the city of Chicago is positively related to the following year's homicide rate. Likewise, each percentage increase in unemployment caused a .005 increase in the neighborhood homicide rate in the following year. As previous homicide studies indicate, the inclusion of the unemployment rate in this study is necessary and justified (Baller, Anselin, Messner, Deane & Hawkins 2001; Krohn 2005; Rapheal & Winter-Ebmer 2001). The percent of the civilian population that is unemployed is commonly used in studies of crime for several reasons. One common explanation is that "unemployment influences crime both negatively, by decreasing criminal opportunity (availability of targets and suitable chances for crime), and positively, by motivating toward crime people who are affected adversely by economic downturns" (Smith, Devine, & Sheley 2001, 552).

Surprisingly, the percentage of young men is not associated with an increase in the homicide rate. Similar to Krivo and Peterson (1996), this study finds that the percent male youth actually lowers the homicide rate, so that larger numbers of young men in Chicago neighborhoods lead to lower levels of lethal violence.

#### *Results for Model 2: Non-Gentrifying Neighborhoods*

In Model 2 of Table 4.2, I select only those tracts that never experienced gentrification to determine the relative influence of social disorganization and other

neighborhood characteristics on their lagged homicide rates. According to Table 4.2, the only social disorganization variables that predict the lagged homicide rates in non-gentrifying neighborhoods are the economic disadvantage index and residential stability. Higher levels of economic disadvantage predict higher homicide rates in the following year for non-gentrifying census tracts; this finding is even stronger than the results from Model 1, for the city of Chicago. In accordance with social disorganization theory, residential stability is negatively related to the homicide rate in the following year in neighborhoods that did not go through gentrification. Thus, greater percentages of long-term residents in non-gentrifying neighborhoods lead to lower lagged homicide rates. The racial heterogeneity index was not significantly related to lagged homicide rates in non-gentrifying neighborhoods.

Thus, two of the three social disorganization variables (economic disadvantage index and residential stability) account for some of the variation in neighborhood homicide rates. Given the strength of these relationships, the most important structural predictor of homicide rates in non-gentrifying neighborhoods is the economic disadvantage index. However, the influence of the control variable, homicide rate in the previous year, actually exhibits the strongest relationship with homicide (.097). The strength of this relationship is expected, as prior homicide rates are often the best predictors of subsequent homicide rates. The remaining control variables selected for this study also demonstrated significant relationships with homicide. Non-gentrifying neighborhoods with higher percentages of unemployed residents exhibited higher lagged homicide rates, and non-gentrifying census tracts with higher percentages of male youth exhibited lower lagged homicide rates.



*Results for Model 3: Gentrifying Neighborhoods*

Model 3 of Table 4.2 displays the results of the time-series analysis regression on gentrifying neighborhoods in Chicago. Similar to the non-gentrifying neighborhoods, significant relationships exist between homicide and two of the social disorganization variables in gentrifying neighborhoods. A one percent increase in the racial heterogeneity index in gentrifying neighborhoods increased the homicide rate by 0.583 per 1,000 residents. Since higher values on the racial heterogeneity index mean greater racial heterogeneity, this positive relationship means that gentrifying neighborhoods with more racial heterogeneity demonstrated higher homicide rates. For example, gentrifying neighborhoods with both blacks and whites had higher homicide rates than all-white or all-black neighborhoods. A possible implication of this finding is that inter-racial gentrification creates more conflict or hostility than intraracial gentrification processes in neighborhoods.

The expected positive relationship exists between percent residentially stable and homicide (see Column 3 of Table 4.2). As previously discussed in Chapter 2, social disorganization theory would predict the opposite pattern. Since social disorganization theory argues that high residential turnover is associated with higher rates of crime and delinquency, the relationship between residential stability and homicide should be negative according to the theory. This is because stable neighborhoods are expected to be more effective at exerting informal social control. For example, neighbors of 10 years should be able to work more effectively at limiting delinquent behavior than neighbors of 10 days or 10 months. However, my hypothesis suggested that the relationship between

residential stability and homicide should actually be positive *in gentrifying tracts*, counter to social disorganization theory. In effect, early in the gentrification process, gentrifying neighborhoods are more residentially stable because there are greater numbers of original residents. Higher homicide rates in these early gentrifying neighborhoods may be indicative of more intra-neighborhood conflict as the neighborhood begins to experience the initial influx of gentrifiers.

Economic disadvantage is not significantly related to the homicide rates of gentrifying census tracts. This effect is quite unexpected, given Hypothesis 3. Results from Model 3 of Table 4.2 show that low socioeconomic status, concentration of black population, and degree of family disruption are not relevant for understanding homicide in gentrifying neighborhoods. This result is puzzling, but suggests that absolute measures of economic disadvantage are not useful in understanding the homicide rates of gentrifying neighborhoods. Since gentrifying neighborhoods are becoming more affluent,<sup>14</sup> the economic differences between the more affluent and the less affluent may become more pronounced. Thus, the level of inequality may increase, and have significant consequences for the homicide rate.

In a supplemental analysis not shown here, the impact of gentrification on homicide rates was explored by the beginning decade of gentrification and the stage of gentrification. Structural characteristics were most relevant during the pre-gentrification stage for gentrifying tracts. Long before these neighborhoods experienced gentrification,

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<sup>14</sup> A comparison not discussed here shows that the average score on economic disadvantage before gentrification for tracts that gentrified during the 1970s, 1980s, and 1990s is higher than during gentrification.

the levels of social disorganization were important and most relevant for understanding changes in the homicide rate in the predicted fashion.

Importantly, residential stability is the only social disorganization variable associated with homicide during the decade of gentrification for tracts gentrifying during the 1970s, 1980s and 1990s. The direction of this relationship is not consistent with social disorganization theory. However, it does provide further support for Hypothesis 2, which predicted a positive relationship between residential stability and homicide. Residential stability, when significant, was always positively related to homicide during years in which neighborhoods underwent gentrification.

The control variables for Model 3 in Table 4.2 demonstrated significant relationships with homicide. The previous years' homicide rate was actually *negatively* associated with the homicide rate for the following year in gentrifying neighborhoods. This pattern is unlike the pattern demonstrated in Chicago neighborhoods and non-gentrifying neighborhoods. This suggests that gentrification and the associated structural changes in neighborhoods generally reduce violence over time. Including the homicide rate as a control variable in Model 3 doubled the variation explained in the lagged homicide rate compared to a model that did not utilize homicide as a control variable.<sup>15</sup> Unlike the models for all Chicago neighborhoods and non-gentrifying neighborhoods, gentrifying neighborhoods with higher percentages of unemployed residents have lower homicide rates. As previously mentioned, this negative finding for unemployment and homicide may be due to decreased opportunities for crime. Although the influx of more affluent residents into gentrifying neighborhoods may actually create greater potential

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<sup>15</sup> The within-variation increased from .0054 to .0127 when homicide rate was included as a control variable.

targets, there may be fewer opportunities for crime as formal and informal social control increases. Moreover, if more people living in a neighborhood are unemployed, then there may be increased guardianship and consequently, fewer opportunities for crime (Cantor & Land 1985). This relationship is expected to exist “because the unemployed generally find themselves in routine activities that are more home-based” (Paternoster and Bushway 2001, 392). Similar to non-gentrifying neighborhoods, the percentage male youth in gentrifying neighborhoods is negatively related to the homicide rate.

## **Chapter 5. Discussion and Conclusion**

The purpose of this study was to determine whether and how social disorganization affects changes in the homicide rates of gentrifying neighborhoods in Chicago, IL from 1970 to 1995. Using a longitudinal approach to this question, several time-series analyses were conducted on all Chicago neighborhoods, distinguishing whether or not they experienced gentrification. This allowed me to examine the impact of gentrification on neighborhood homicide rates, controlling for social disorganization and related neighborhood characteristics. Additionally, time series analysis also allowed me to compare the impact of social disorganization on gentrifying and non-gentrifying neighborhoods separately. Given the longitudinal nature of this study, the analysis is not limited to one decade of gentrification. Therefore, I was able to look at the process of gentrification across all neighborhoods in Chicago over an extended time frame. In total, 26 years of data were utilized in a series of fixed effects, pooled cross-sectional time-series analyses.

The empirical results described in the preceding chapter have a number of implications for research on gentrification, homicide, and social disorganization. My results show that gentrification does not have a direct effect on changes in the homicide rates of neighborhoods in Chicago, IL., from 1970 to 1995 after controlling for levels of social disorganization, the previous year's homicide rate, percent young male, and percent unemployed. This finding is contrary to my expectation stated in Hypothesis 1 that the processes associated with gentrification would lead to higher homicide rates over and above social disorganization variables.

Although the variable that distinguished whether or not neighborhoods gentrified was unrelated to varying homicide rates at a bivariate level, summary statistics showed important demographic differences between non-gentrifying and gentrifying neighborhoods. Gentrifying neighborhoods in Chicago had lower rates of residential stability and lower levels of economic disadvantage. Significantly smaller percentages of residents in gentrifying areas were black, poor, and there were smaller percentages of households headed by a female in gentrifying census tracts. These differences should lead to lower homicide rates, as past research on social disorganization has documented a positive relationship between percent black, percent female-headed households, racial heterogeneity, economic disadvantage, and residential instability with crime. However, the results did not support these expectations in gentrifying neighborhoods.

Hypothesis 2 predicted that the residential stability of gentrifying neighborhoods should be *positively* related to the homicide rate, contrary to one of the central tenets of social disorganization theory. Support was provided for this hypothesis, as the relationship between residential stability and homicide was consistently positive for neighborhoods experiencing gentrification. Given the main claims of social disorganization theory, neighborhoods with fewer residents who lived in the same house five years earlier should have higher levels of crime because these neighborhoods are hypothesized to have lower levels of neighborhood cohesion and collective efficacy. For example, Markowitz, Bellair, Liska, and Liu argue that “median income and residential stability increase cohesion” (2001, 304). This finding was also discovered in Sampson, Morenoff, and Earls’ (1999) study on collective efficacy. Greater cohesion in

neighborhoods diminishes the ability of offenders to commit crimes in these neighborhoods. Thus, residential stability should lower crime, not raise it.

In this study, however, residential stability was positively related to homicide in gentrifying neighborhoods. The concept of “defended community” may be useful in understanding this positive relationship between residential stability and homicide. It was originally used to describe the possibility that “increased level[s] of internal organization of the community . . . . result in higher rates of crime and delinquency” (Bursik 1988, 538). For example, Hirsch (1983) studied housing riots in Chicago between 1947 and 1957 and found that many of the people arrested during the housing riots were supported by elderly members of the population. Some of the residents in the areas that Hirsch studied organized in response to “perceived external threats” against specific victims (Heitgerd & Bursik 1987, 785). Similarly, Griffiths, Baller, Spohn, and Gartner (2008) found that residential stability was positively associated with defended community homicide in a study of homicides in Buffalo, New York.

The observed patterns of increased homicide rates in residentially stable neighborhoods may be due to “defended community homicides.” Specifically, in areas with large numbers of existing residents who feel threatened by the onset of gentrification, conflict and thus violence may increase. A study on defended community crime in New York City found that a racial element existed as well (Green, Strolovitch, & Wong 1998). The authors found that “long standing racial predominance in a community influences racially motivated crime,” so that historically white neighborhoods faced with the in-migration of minorities exhibited higher rates of crime (Green, Strolovitch & Wong 1998, 387).

The third hypothesis outlined in Chapter 2 concerned the relationship between economic disadvantage and homicide. The expectation was that the relationship between economic disadvantage and homicide would be positive, and hold regardless of whether neighborhoods experienced gentrification. Support was provided for this hypothesis, as economic disadvantage was positively related to homicide for the city of Chicago and non-gentrifying neighborhoods; although there was no effect in gentrifying neighborhoods.

This study also analyzed the racial heterogeneity of communities. As stated in Hypothesis 4, racial heterogeneity should positively influence the lagged homicide rate in both non-gentrifying neighborhoods and gentrifying neighborhoods. However, results from Table 4.2 do not show significant and positive relationships for both neighborhood types. Racial heterogeneity was positively related to homicide only in gentrifying neighborhoods, but not significantly related to homicide in non-gentrifying neighborhoods, nor was it significant in the model for the city of Chicago. Thus, only partial support is provided for Hypothesis 4.

It is possible that existing residents in predominantly white neighborhoods may be murdering black gentrifiers or vice-versa. The evidence presented from this study shows that as gentrification occurred, neighborhoods became more racially heterogeneous. It may be the case that many homicides committed in gentrifying neighborhoods may be inter-racial, not intra-racial. Although most homicides tend to be inter-racial,<sup>16</sup> different social processes that occur in gentrifying neighborhoods may alter this pattern.

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<sup>16</sup> From 1976 to 2005, 86% of white victims were killed by whites and 94% of black victims were killed by blacks.



Investigating the race and status (e.g., gentrifiers versus original residents) of victims and offenders was beyond the scope of this study, but warrants attention in future research.

The implication for policymakers of differential social processes operating in gentrifying neighborhoods is a possible need for customized formal responses to gentrification. Rather than applying one policy or policing technique to neighborhoods in Chicago, this work points to the importance of tailored policies. For example, Hubbard, Campbell, O'Neill, Pitcher, and Scholar (2007) provide several examples of alternative policing techniques in gentrifying areas. Such examples include reassurance policing, or neighborhood watch programs and "city centre guardians" who can serve as "new agents of social control" (Hubbard, Campbell, O'Neill, Pitcher, & Scholar 2007, 203).

Results from the time-series analyses reported in this thesis show the differential relevance of social disorganization theory by neighborhood type. There are several explanations for this lack of a consistent pattern. First, recent research on social disorganization highlights the need for employing more accurate measures of social disorganization. In using census data to test social disorganization theory, researchers are limited to analyzing the structural characteristics of administratively defined areas. For example, changes in residential stability, socioeconomic status, and racial composition at the census tract level are common variables of interest. As Bursik argued, many researchers in this framework "have been forced either to rely on very crude indicators of social disorganization or to concentrate on the relationship between ecological processes and crime/delinquency, assuming that this central unmeasured process intervened between the two" (1988, 531). The necessity of measuring these intervening variables exists. Sampson, Raudenbush, and Earls (1997) used survey research to discover the

importance of collective efficacy in explaining violent crime. They found that collective efficacy largely mediated the observed association of residential stability with concentrated disadvantage and violent crime. Unfortunately, measures of these mediating variables were not available at the tract level over time and consequently could not be included in these analyses.

Second, census tracts were used in this study to measure neighborhood boundaries due to data availability, size, homogeneity, and comparability over time. However, census tracts may not represent truly accurate neighborhood delineations. A possible alternative construction of neighborhood boundaries is the census block, which is the smallest geographical unit with available decennial data. The possibility that the level of analysis may impact the results was corroborated in Hipp's (2007) research using the American Housing Survey. Comparing data at the census block and census tract level, Hipp found that the significance of racial/ethnic heterogeneity to understanding perceived crime depended on the level of analysis. Heterogeneity was strongly and significantly related to perceived crime at the tract level, yet unrelated to perceived crime at the block level. Future research should explore whether or not the results in this thesis are replicated at both the census tract and census block level.

Another limitation of this research is its focus on testing only one criminological theory. Social disorganization theory attempts to explain patterns in delinquency and crime using absolute measures of relevant variables. For example, a 50 percent increase in the percentage of people living in poverty should increase disorganization. This elevated level of disorganization should translate to greater delinquency and crime, provided that the mediating variables are operating in the expected direction. Such

mediators include collective efficacy and social control, for example. An additional criminological theory that may be useful is strain theory. Originally conceptualized by Merton in 1938, strain theory refers to the existence of two social structures that ideally offer a balance between aspirations and the means to achieve such aspirations.

Reformulated in 1992, general strain theory<sup>17</sup> focused on self-generated norms (Agnew 1992). Agnew argued for the inclusion of several sources of strain, such as the loss of positively valued stimuli and the presentation of negative stimuli. In his later work, Agnew (1999) further expanded general strain theory to explain community differences in crime rates at the macro level.<sup>18</sup> For the purposes of this paper, individuals living in a neighborhood undergoing gentrification may experience strain through the loss of positively valued stimuli. A clear example of the loss of positive stimuli in the context of gentrification would be the possibility of residential displacement (whether forced or voluntary). Therefore, macro strain theory may be particularly suitable for understanding crime rate trends in gentrifying neighborhoods that experience substantial residential displacement.

An additional limitation may be found in the absolute measures of relevant variables in social disorganization theory. Social disorganization theory does not take into account relative measures of relevant variables. Relative measures may more accurately capture the influence of structural changes than absolute measures. A commonly used variable that captures economic inequality is the Gini index. It is possible that the Gini

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<sup>17</sup> Merton's strain theory was further advanced by Cohen (1955), Cloward and Ohlin (1960), Agnew (1992), and Messner and Rosenfeld (1994). General strain theory, as Agnew argued, was a reconceptualization of the original strain theory that would no longer be tied to social class.

<sup>18</sup> This theory is commonly referred to as macro strain theory.

index may be a more appropriate measure of the economic conditions in these particular neighborhoods. The Gini index, which has been widely used in various disciplines and studies, is the ratio of the average income difference between pairs of recipients in an area to the average income (see Blau 1977, 57). For example, for a given census tract, the difference in income between the wealthiest and the poorest may be more important for producing conflict, and thus understanding homicide, than the increase in the percentage of people living in poverty. Researchers utilizing relative measures of economic inequality to study homicide rates include Fajnzylber, Lederman, and Loayza (2002), Hseih and Pugh (1992), Patterson (1991), Messner and Tardiff (1986), Blau and Blau (1982), and Messner (1982). The results for the importance of economic inequality for crime are mixed, however, with some studies finding a positive association between economic inequality and violence (Fajnzylber et al. 2002; Watts & Watts 1981) while others finding no association (Messner 1982, 1983; Messner & Tardiff 1986, Williams 1984).

Another potential factor that influenced the conclusions of this study is the use of homicide as the crime type. Although homicide is the most serious and well-reported crime type (Black & Reiss 1970), there may be other crimes that better capture the consequences of social disorganization in gentrifying neighborhoods. For example, various property crimes may increase during gentrification. With an influx of new residents into the neighborhood, existing residents may be unable to control vandalism, car theft, or robbery. Moreover, there may be greater increases in these types of crime, as residents respond to gentrification by vandalizing the homes of gentrifiers.

Although there are several limitations in this study, this research did make a number of important contributions to both the literature on gentrification and social disorganization. First, it provided an in-depth examination of all the census tracts in the city of Chicago. In total, 855 census tracts were included in this analysis. Of these, the measure of gentrification utilized in this study identified 262 census tracts as gentrifying. By analyzing within-tract variation over time, this study was able to explore the relevance of social disorganization for observed changes in the homicide rate of multiple neighborhoods. Social disorganization theory did account for some of the variation in the homicide rates of certain census tracts between 1970 and 1995. Second, it clarified the unique effects of residential stability on crime for neighborhoods undergoing gentrification. This finding is especially important, given its unexpected direction and implication for policymakers.

Given the findings of the current study, there are several avenues to explore in future research. For example, researchers who build on this study can include variables that have been demonstrated to mediate the relationship between social disorganization and crime. These variables may include collective efficacy, social cohesion, and social control. Additional ways to expound upon this research exist, and can include a comparison of various criminological theories in understanding changes in homicide rates. These theories can include, but need not be limited to, social disorganization, relative deprivation, and macro strain theory. Concepts based on these theories can be developed to determine if they are more appropriate predictors of the homicide rates in gentrifying areas. Possible areas of inquiry could include an examination of the explanatory power of relative deprivation theory for homicide rates in gentrifying census

tracts as well as a replication of this study in other cities and during other decades.

Researchers can also explore if these results hold regardless of the unit of analysis used to represent neighborhoods.

Finally, future studies can build upon my study by addressing the limitations of my dependent variable. Since data through the Chicago Homicide Dataset is only available from 1965-1995, my data and the subsequent explorations cannot extend past 1995. When this homicide data becomes available, even richer patterns may emerge from the analysis.

## Appendix A Description of variables included in the models

Variables	Variable Descriptions	Expected Direction of Effect on Homicide Rates
<b>Independent Variables</b>		
Economic Disadvantage Index	The index of percent female headed households, percent black, percent living in poverty	+
Percent female-headed households	Percentage of families and subfamilies with own children who are female-headed	+
Percent Black	The percentage of the population that is black	+
Percent Poverty	The percentage of the population that lives below the federal poverty line	+
Neighborhood Racial Heterogeneity Index	One minus the sum of the squared proportion of neighborhood residents in black/white racial group; smaller numbers indicate homogenous neighborhoods	+
Neighborhood Residential Stability (%)	The percentage of persons 5+ years old residing in the same house five years ago	- (according to social disorganization theory) but + for gentrifying neighborhoods
Gentrification	Whether or not a neighborhood underwent gentrification <sup>19</sup>	+
<b>Control Variables</b>		
Percent Unemployed	Percent of civilian population that is unemployed	+
Percent Male	Percent of population that is male, aged 16-34	+
<b>Dependent Variable</b>		
Homicide Rate	The rate of homicides, per 1000 residents, lagged by 1 year	+

<sup>19</sup> Gentrifying neighborhoods are defined as tracts that exhibited a 20 percent increase compared to the average citywide change over the same period in median rent, the percentage of people 25 and older with college/graduate degree, and the percentage of residents employed as professionals/managers.

## Appendix B Zero-Order Correlations Between Variables

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>1. Homicide Rate lag</b>	1.00									
<b>2. Economic</b>	.31	1.00								
<b>3. Disadvantage Index</b>			1.00							
<b>3. Percent Black</b>	.23	.87	1.00							
<b>4. Percent female Headed households</b>	.27	.93	.75	1.00						
<b>5. Percent in poverty</b>	.34	.88	.59	.78	1.00					
<b>6. Percent unemployed</b>	.25	.79	.59	.75	.80	1.00				
<b>7. Percent Male</b>	-.06	-.19	.22	-.15	-.09	-.12	1.00			
<b>8. Percent Residentially Stable</b>	-.03	.13	.23	.15	-.00	.17	-.44	1.00		
<b>9. Racial Heterogeneity Index</b>	-.05	-.25	-.38	-.24	-.02	-.15	.40	-.42	1.00	
<b>10. Gentrified</b>	-.001	-.11	-.17	-.10	-.04	-.12	.14	-.17	.13	1.00



## Appendix C Multicollinearity Statistics

Variable	VIF	VIF <sup>2</sup>	Tolerance	R-Squared
Time of gentrification	1.71	1.31	.58	.41
Residential Stability	1.44	1.20	.69	.31
Gentrified	1.65	1.29	.61	.39
Economic Disadvantage	3.07	1.75	.33	.67
Homicide Rate, lagged	1.12	1.06	.89	.11
Racial Heterogeneity Index	1.40	1.18	.71	.29
Unemployment	2.88	1.70	.35	.65

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