

Spatial Crime Displacement on Chicago's South Side

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ABSTRACT

This research examines the effects of population displacement after the demolition of the Robert Taylor Homes (in Chicago's 2nd Police District) on crime in neighboring police districts that serve impoverished, racially segregated, high-crime neighborhoods where many former residents relocated. The objective is to analyze possible relationships between the demolition of the housing project and crime trends of murder, robbery, and total reported index crime in surrounding police districts and police beats through the use of hotspot analysis.

Key Words: crime mapping, hotspot analysis, Chicago, Robert Taylor Homes, index crimes

INTRODUCTION

The history of public housing in the United States, especially in the highly populated northern industrial cities, has been a dismal failure. In Chicago, this effort was initiated after World War II to provide housing to a growing African-American population (Roosevelt University 2013). Two main areas, the Cabrini-Green area of north-central Chicago and the Robert Taylor Homes of south Chicago were the largest and densely populated high-rise public housing developments developed in the city. Hunt (2009) examined these areas and described the deteriorating conditions, subsequent high levels of crime, negative perceptions of the area, and lack of federal funds, factors that pushed Chicago officials to reexamine the “high-rise” design. In the 1990s, Mayor Richard M. Daley, in coordination with the Department of Housing and Urban Development (HUD), initiated the “Plan for Transformation.” The Chicago Housing Authority (CHA) claims this was the most ambitious redevelopment effort of public housing the United States. The Plan's aim was to build and strengthen communities by integrating public housing and its



leaseholders into the larger social, economic, and physical fabric of Chicago (CHA 2013).

In recognition of the “high-rise” failure, the CHA began demolishing these distressed buildings. Starting with the largest, the Robert Taylor Homes (RTH), demolition began in 1998 and was completed by 2008. This sizeable south Chicago complex included 28 sixteen-story high rises, spanning several city blocks, with a total of 4,321 units housing an estimated population of nearly 27,000 (CHA 2010). Today, the area of the RTH is now a mixed-use, mixed-income development comprised of nearly 2,300 apartment buildings, condos, and some single family homes, coupled with commercial and retail venues premised on ideas of New Urbanism (New Urban News 2002).

While revitalization efforts for the Robert Taylor Homes were multifaceted, the vision of reformers, consistent with New Urbanism (an urban renewal concept which focuses on community and walkability), was to eliminate or drastically reduce crime in areas that had high levels. This would be done by reducing opportunities for criminals to commit crime, changing criminals’ ideas about whether they can get away with crime, and making it harder and less rewarding to commit crime. In the case of the RTH, the CHA believed crime could be reduced in the area through the demolition of the housing project and relocation of its tenants (Barr & Pease 1990; Bowers & Johnson 2003; Eck & Weisburd 1995). Yet, as crime declined in the former area of the RTH, former residents were displaced to neighboring areas in south Chicago, and crime became more concentrated in these receiving areas.

Demolition of the RTH spanned ten years, from 1998- 2008. Through analysis of Index Crime Statistics, provided by the Chicago Police Department, we performed hotspot analysis with ArcGIS software to analyze changes in crime hotspots for three phases of the demolition of the complex: early demolition (1999), half demolition (2003), and post-demolition (2008). This analysis will examine the relationship between the

demolition of the RTH and crime hotspot migration in surrounding police districts where former tenants have relocated to determine the changing landscape of crime in south Chicago.

LITERATURE REVIEW

The majority of America’s high-rise, high-density public housing projects, including the RTH, were built during the urban renewal efforts of the 1950s and 1960s. City planners used them as a vehicle for slum clearance and to provide affordable living spaces for economically disadvantaged citizens (Bauman, Hummon, & Muller 1991; Chicago Reporter 2004; Suresh & Vito 2007). By requiring all public housing applicants to be poor and adjusting rental expenses to reflect salaries, housing authorities, over time, created massive “warehouses for the poor” (Massey & Kanaiupuni 1993). As a result, many of these ambitious projects became dilapidated and notorious symbols of failed public housing programs across the nation that created neighborhoods of concentrated poverty, physical disorder, and high-crime rates (Suresh & Vito 2007; Bickford & Massey 1991; Holzman 1996).

By the late 1980s, academics, city officials of the largest urban areas across the United States, along with federal agencies like the Department of Housing and Urban Development (HUD), began acknowledging the failures of public housing, and in particular, the problems of excessive concentrations of poverty through public housing. In 1992, in response, HUD created the HOPE VI (Housing Opportunities for People Everywhere) program in order to demolish large, high-rise spatially concentrated housing developments, reduce concentrations of poor, and replace them with neighborhoods based on New Urbanism that focused redevelopment on fixed-income, mixed use residential and commercial low-rise communities that highlighted local histories and culture (Day 2003; Smith 2002; Popkin et al. 2004). Funded partially by HOPE VI, the CHA

Plan for Transformation was launched in 1999 with the goal of demolishing 18,000 "severely distressed" public housing units and integrating their residents into the wider city through scattered-site subsidized housing in mixed-income neighborhoods and redeveloped mixed-income, low-rise developments on CHA properties (Venkatesh et al. 2002).

According to many scholars and civic leaders, this relocation strategy in Chicago has not met its goals. As Venkatesh and others have observed, families leaving public housing moved overwhelmingly to other high-poverty, high-crime neighborhoods comprised predominantly of racial/ethnic minorities (Venkatesh et al. 2002; Suresh & Vito 2007). With Section 8 vouchers for subsidized housing, the CHA has disbursed former residents from housing projects to neighborhoods across the city. In a relocation study of RTH, Venkatesh et al. (2002) found that this disbursal has not lessened the concentration of Section 8 households in distressed, poverty-stricken areas. They also found that 91% of all residents from the RTH in 2003 relocated to communities in Chicago's South Side with already high rates of crime and poverty, particularly to the neighborhoods of Greater Grand Boulevard, South Shore, Englewood, West Englewood, and Avalon Park.

This research is premised primarily on three theories: geographical crime displacement, situational crime prevention, and routine activities theory. Geographical crime displacement theory suggests crime can be moved spatially if there is a change in the local environment in which it prevails (Barr & Pease 1990). This mechanism of displacement can be perpetuated by situational crime prevention. The goal of this tactic is to eliminate crime by eliminating characteristics that make an area more prone to crime. Therefore, the low socioeconomic levels of the residents contributed to increased levels of criminal activity in and around the RTH. Routine activities theory suggests the potential for crime will increase if there is an increase in the numbers of accessible targets, the lack of a

consistent police presence, and an increase in potential offenders (Cohen & Felson 1979; Roncek & Maier 1991). Demolition of the homes and the subsequent renewal promised by the "Plan for Transformation" propagated the geographical displacement of crime by moving offenders from their original location to areas surrounding the RTH. As a result, these theories suggest that neighboring areas with large numbers of displaced people would be expected to experience increases, or less-significant decreases, in crime rates (Barr & Pease 1990; Bowers & Johnson 2003; Eck & Weisburd 1995).

This research fills a gap in the current body of public housing literature, most of which consists of research that examined the problems of public housing, problems with tenant relocation, and the issue of human displacement from the housing projects. The literature, however, lacks studies that examine the impacts of housing relocation on neighborhoods receiving in-migration of former public housing tenants, whether in Chicago or elsewhere (Kingsley et al. 2009). As a result, our understanding of possible problems of crime and other social disorganization in communities that receive disproportionately high in-migration is limited. Understanding these impacts is critical in order to develop successful relocation strategies. A notable exception is Suresh and Vito's case study of housing relocation in relation to homicide migration in Louisville, Kentucky. They found that homicide occurrences had migrated from public housing developments to communities receiving large quantities of former public housing tenants (Suresh & Vito 2007). This study performs an examination similar to that of Suresh and Vito. While they focused strictly on homicide occurrences, this study examines trends in total index crime occurrences as well as murder and robbery. The Chicago Police Department (CPD) defines index crime as the combination of nine categories of crime, selected because of their seriousness and frequency of occurrence (CPD 2008). Through examination of murder rates, robbery rates, and all serious

crime rates (i.e. index crimes) at the Chicago Police Department Beat level, this study will examine the extent to which CHA's demolition of the Robert Taylor Homes in Chicago's South Side displaced crime to surrounding areas of the city.

RESEARCH OBJECTIVE

Due to the fact the RTH site is in south Chicago, this project will examine crime occurrences throughout the police districts of this area in the city in order to examine changing patterns as the RTH were demolished. Figure 1 illustrates the study area. This figure shows the study area comprised of police districts and the location of the Robert Taylor Homes (indicated by the stars). As can be seen, the RTH are found in the 2nd police district. Analysis of crime data will make it possible to understand the degree of which the demolition of the RTH has impacted crime in nearby communities. Interviews with people residing in communities receiving high in-migration of former CHA tenants, and a review of the literature, suggest the in-migration has become a source of local conflict (Venkatesh 2002). As a result of this conflict, residents in these communities believe violent and interpersonal crime trends are on the rise. Further, they believe former CHA tenants are contributing to these increases (Resident A; Resident B; Resident C).

STUDY AREA SELECTION

Ninety-one percent of all residents from the RTH relocated to communities on the South Side, particularly to the neighborhoods of Greater Grand Boulevard and South Shore within the 3rd PD, and Englewood and West Englewood in the 7th PD, Avalon Park in the 6th PD and in the top of the 4th PD (Venkatesh et al. 2002). In relation to these districts, the 2nd and 21st PDs, where residents are relocating from, are unsurprisingly seeing the largest out-migrations of former CHA tenants. In Figure 1, the PDs have been coded in relation to Venkatesh's relocation

study, where PDs receiving higher number of RTH tenants are shaded darker, those receiving fewer are shaded lighter, and those sending higher levels of residents from the RTH demolition are all the shades of gray in the 2nd and 21st districts. The 2nd, 3rd, 4th, 5th, 6th, 7th, 21st, and 22nd Police Districts form the study area (Fig. 1).

Figure 1 also shows the distribution of the relocated CHA tenants, as well as the PDs most affected by their relocation. All of these neighborhoods are predominantly African-American, impoverished, have a wide availability of rental housing and unoccupied housing, and are known for their high crime rates (Venkatesh et al. 2002). Overall, the entire study area saw a total population decline of 124,247 people between 2000 and 2010 (CPD 2000 and 2010). While not the focus of this study, a variety of reasons for population decline do stem from the relocation of residents from the RTH demolition, to urban renewal projects focusing on less dense housing, and high levels of foreclosures throughout the area, all contributed to the decline of the population throughout south Chicago. Demographer Ken Johnson of the University of New Hampshire told the *Sun-Times* that . Only the 8th police district saw an increase in total population, while the 7th, 3rd, and 2nd districts saw the largest percentage decline over the ten-year span (Table 1).

CHICAGO POLICE DEPARTMENT INDEX CRIME STATISTICS

As stated earlier, the Chicago Police Department (CPD) defines, index crimes are the combination of nine categories of crime, selected because of their seriousness and frequency of occurrence (CPD 2008). These index crime records are similar to those maintained by the FBI Uniform Crime Reporting Program (UCR), which documents crime incidents for entire cities, counties, and states to be used in comparisons amongst them. Index Crime Statistics include violent crimes (aggravated assault, aggravated battery, criminal sexual assault, murder, and

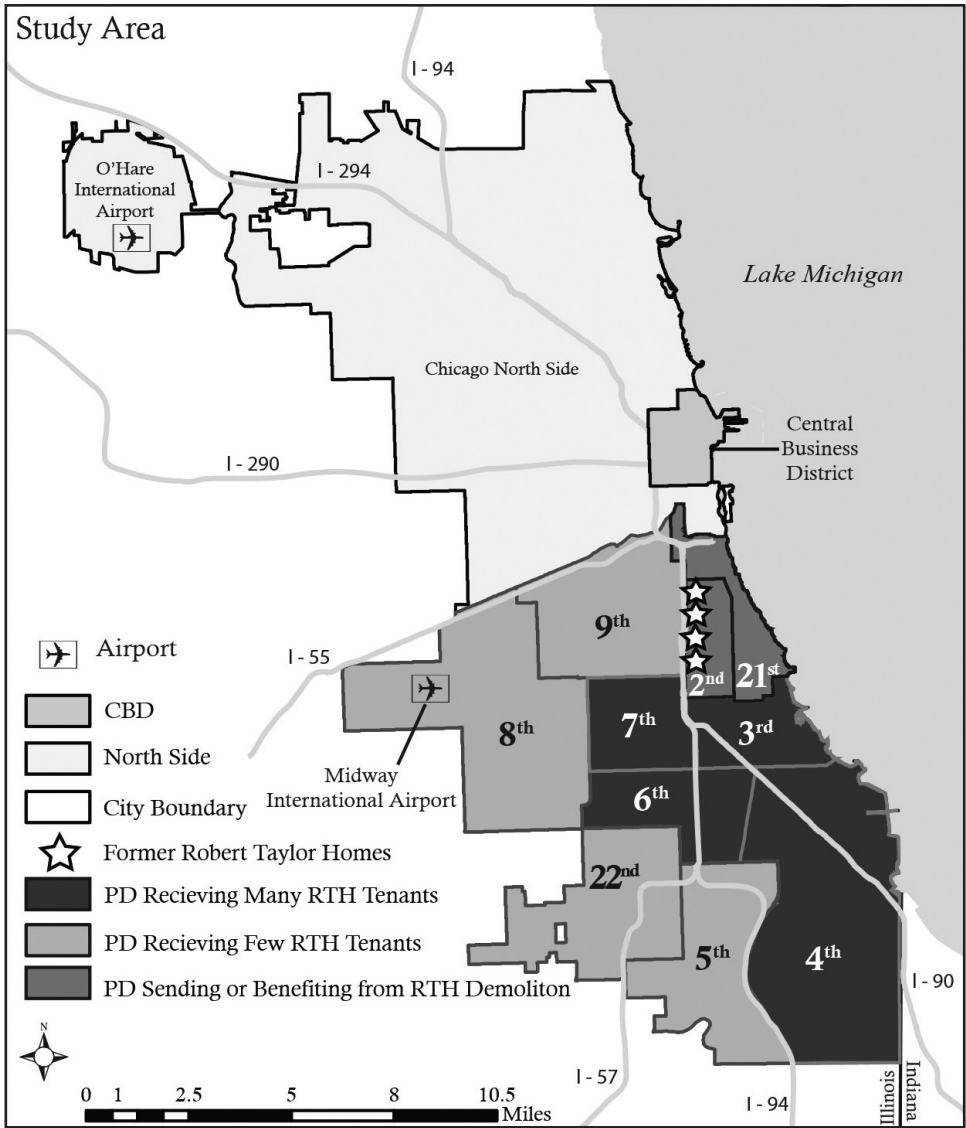


Figure 1. South Chicago study area.

robbery) as well as property crimes (burglary, larceny, motor vehicle theft, and arson) (CPD 2008). The advantage of using CPD index crime numbers is that they can be applied to smaller areas of the city than UCR data would allow (Fig. 2). Beat levels can be used to monitor changes in crime within the city at the police beat level, rather than

only at the citywide scale. These data include the number of reported occurrences for each of the included crimes for every police beat within the city of Chicago.

These data are limited in that they only reflect crime incidents reported to the police. The FBI estimates nationally one-third to more than one-half of the crimes that actu-

Table 1. Change in total population of South Chicago Police Districts from 2000 to 2010. Sources: 1999/2000 Chicago Police Department Biannual Report and 2010 Annual Chicago Police Department Report.

Police District	2000 Population	2010 Population	Change in Population 2000 to 2010	Percent of Change in Population
2	37,768	50,967	-13,199	-34.95%
3	75,235	93,384	-18,149	-24.12%
4	123,575	141,422	-17,847	-14.44%
5	74,396	92,729	-18,333	-24.64%
6	90,841	105,360	-14,519	-15.98%
7	71,071	91,600	-20,529	-28.89%
8	247,373	244,470	2,903	1.17%
9	155,681	165,457	-9,776	-6.28%
21	72,917	78,111	-5,194	-7.12%
22	101,941	111,545	-9,604	-9.42%

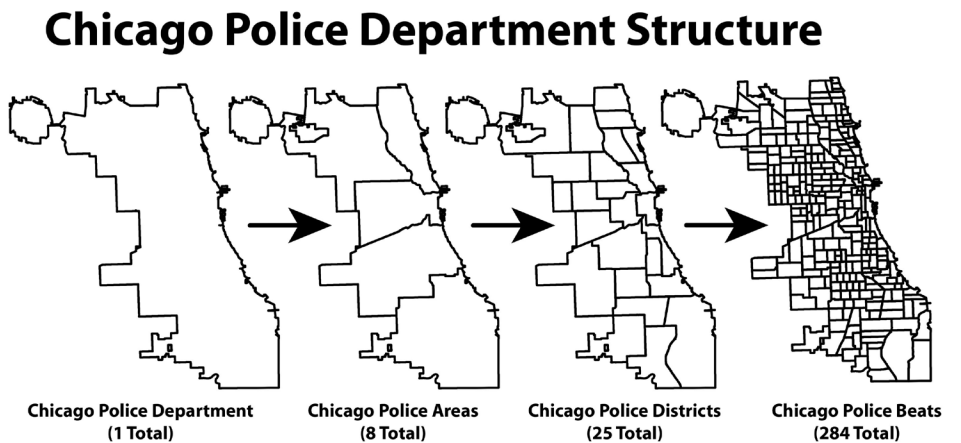


Figure 2. Chicago Police Department structure. UCR data only collects data at the department level, displayed on the far left; the data at the beat level, on the far right, is presented in smaller areas allowing more detailed analysis. Source: City of Chicago Data Portal.

ally occur are never reported and therefore annual changes may reflect a real change in the incidence of crime, a change in victims' reporting behavior, or a combination of the two (CPD 2001). We obtained these data through a statistical data request inquiry submitted to the CPD and approved by the

Research and Development Division of the Chicago Police Department.

QUANTITATIVE METHODS

Patterns of criminal activities typically take place as non-random spatial occurrences,

clustering in discrete locations known as “hotspots” (Barga 2001; Sherman, Gartin, and Buerger 1989; Weisburd, Maher, and Sherman 1992). Hotspot analysis has become a popular approach for exposing high areas of crime throughout urban landscapes (Grubestic and Mack 2008). Barga (2001) stated this analysis when coupled with other research is yielding strong results in identifying crime patterns in urban areas. However, most hotspot based analyses “treat space and time as separate components of crimes, largely ignoring the interaction of space and time in the production of criminal opportunities” (Grubestic and Mack 2008, 286).

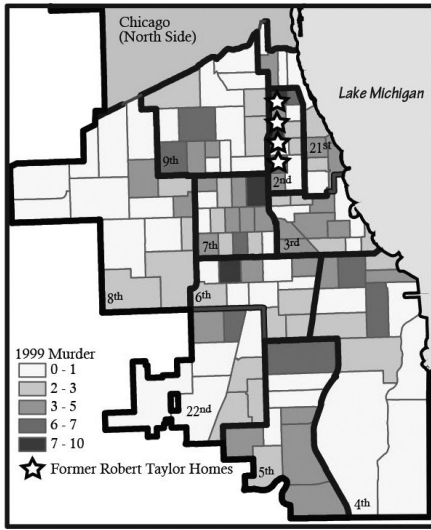
Determining whether or not crime has actually been displaced temporally from the site of the RTH relies heavily on the index crime statistics provided by the CPD over an extended period of time. The crime data provided by the CPD and used in this analysis is aggregated at the beat level. Multiple individual beat areas, those patrolled by particular officers, make up each Police District. To assess the spatial-temporal interaction, it is critical to determine if instances of crime in the study area exhibit distinct patterns and how these patterns changed during the period of demolition. To analyze this change, we divided the time period of the RTH's demolition into three time periods: early demolition (1999), half-demolition (2003), and post-demolition (2008). We used murder in the analysis, because it is the most violent personal crime, and often follows or is the result of other types of crime. Robbery is the most violent property crime and the “total” category is an aggregation of all reported index crimes throughout the study area.

As geospatial technologies continue to develop, hotspot analysis can be conducted using a variety of methods. A vast number of methods use spatial analysis to understand crime hotspots (Eck et. Al 2005). Yet, any particular method depends on the data provided. For example, Leitner and colleagues successfully utilized autoregressive techniques to evaluate the displacement of crime patterns in Louisiana after Hurricane Katrina,

yet were hampered by unreliable data (Leitner et al. 2011). Popular spatial-temporal methods based on group level analysis include the Kuldorff's Scan (Kuldorff 1997) and Grimson's method (Grimson 1989). Gurbesic and Mack (2008) and Levine (2006) identified the following tests based on discrete events with assigned latitude and longitude coordinates: Mantel test, the Knox test, Ripley's K, and the Jacquez k-nearest neighbor test.

A common approach for identifying clusters of crimes is the Getis-Ord (G_i^*) local statistic (Craglia, Haining, and Wiles 2001; Ratcliffe 2004; Ratcliffe and McCullagh 2004; Li et. al 2011). Specifically, the Getis-Ord statistic is used to test for clustering of patterns displaying higher or lower than expected values (Ord and Getis 1995). The common form of the equation is designated by G_i , but can also be utilized as G_i^* (see below), by whether the i -th observation is included or excluded in the calculations (Getis and Ord 1992; Craglia, Haining, and Wiles 2001). Getis and Ord (1992) define “the statistic G_i^* , as j not equal to i , where $\{w_{i,j}\}$ is a symmetric one/zero spatial weight matrix with ones for all links defined as being within the distance of a given i ; all other links are zero including the link of point i to itself” (Ord and Getis 1995, 288; ESRI 2009). Simply put, this is a polygon based approach that measures the proximity of values among other polygons in a given area and identifies those clusters of points with values higher in magnitude than one might expect to find by random chance (ESRI 2009).

The output of the G_i^* statistic method is a z-score for each feature, which is used to represent the intensity of clustering based on the distance of each polygon (Fig. 3). Hotspot analysis identifies statistically significant spatial clusters of high values indicated by higher z-scores (those with standard deviations (SD) generally above 1.5 as hotspots) and low, negative values (those with SD generally below -1.5 as cold spots), with z-scores near zero indicating no apparent spatial clustering (ESRI 2009). Hotspot analysis can be used to simplify data and to show trends based



Input: Raw data

To the left is raw data for crime analysis. These are only the number of crime occurrences displayed at the beat level.



Output: Gi* Z Scores

To the right are the calculated hotspots and coldspots for the raw data above these are calculated using a Z Score with a spatial weight.

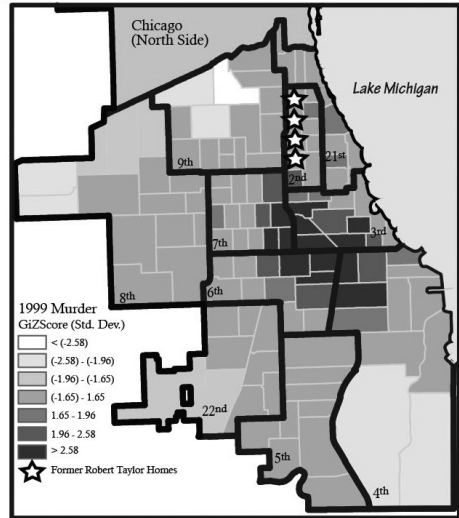


Figure 3. Hotspot analysis model.

on the intensity of variable clustering (Fig. 3). Therefore a hotspot analysis will be run for murder, robbery, and all index crimes for 1999 (early demolition), 2003 (half demolition), and 2008 (post-demolition).

As Grubestic and Mack (2008) argue hotspot analysis alone often does not capture spatio-temporal change. Supplementing the

spatial analysis, murder, robbery, and all index crimes were calculated and then graphed as per capita rates per 1,000 persons at the district level. The resulting figures illustrate the decline in crime throughout the study area, but specifically the overall changes in the crime rate over time. Combined with the hotspot maps, both a temporal and spatial

patterning of crime throughout the study area can be uncovered.

EXHIBIT A: MURDER

The Murder Index is defined by the CPD as the killing of one human being by another (CPD 2001). This index accounts for both first and second-degree murder, but does not include involuntary manslaughter. Figure 4 illustrates the hotspots and coldspots for murder in 1999, 2003, and 2008. In 1999, the clustering of murders across the study area were similar, represented by z-scores between 1.65 and -1.65. The higher incidents of murder were found within the 7th PD, with z-scores between 1.65 and 2.58. The coldspot in 1999 was primarily on the western edge of the South Side and did not contain any beats with occurrences below -2.58 SD.

In 2003, five years after demolition of the RTH was initiated, the murder landscape appears significantly different throughout the area of study. The beats in the 2nd, 9th, 7th, and 21st districts (Fig. 4) began illustrating changes in crime. Large numbers of residents were displaced to the neighborhoods immediately to the south and west of the RTH, and when possible, they seldom moved great distances (Venkatesh et al. 2002). The pattern of 2003 murders follows a similar pattern to the population movements shown by Venkatesh. The hotspot in 2003 grew in size, split into two regions, and increased in intensity. Slightly to the southwest of the RTH, the border between the 7th and 9th PDs had two beats with z-scores above 2.58. The second hotspot is located south of the RTH and encompassed in the 3rd, 4th, 5th, and 6th PDs with two beats with occurrences above 2.58. The coldspots in 2003 are in a shockingly close proximity to the northern hotspot. As Venkatesh's study also concluded, former RTH residents typically did not move closer to, or into the 21st PD to the immediate east of the RTH. Instead, they tended to move south and west of the complex, moving them farther away (Fig. 4). A coldspot developed closer to the lake, east of the RTH site. As the murders in the new

coldspot declined, the area transformed from an area with z-scores between -1.96 and 1.96 SD to far below, with three beats displaying z-scores below -2.58.

In 2008, one year after the last RTH building was demolished, there was a significantly different pattern of murders than that seen in 1999. Of the three years studied, 2008 displayed the largest spatial concentration of murders compared to the previous years. The hotspots from 2003 had merged, and concentrated in the 3rd, 4th, 6th, and 7th PDs. The total number of beats with z-scores over 2.58 had increased from four in 2003 to ten in 2008. This increase suggests these areas have become more "hot" since 2003, and especially since 1999. In 2008, all of the beats immediately around, and containing the RTH buildings, had either become statistically significant as a part of the coldspot, or had remained insignificant. The number of beats with occurrences under -2.58 had increased from three in 2003 to fifteen in 2008. The removal of the homes, the displacement of residents, and the changing landscape of the area due to urban renewal projects illustrated this drastic change from 1999, where all beats surrounding the RTH demonstrated lower levels of murders represented by the coldspots in 2008.

The patterns illustrated in Figure 4 illustrate notable similarities to Venkatesh's relocation study of RTH residents. The PDs receiving large quantities of former RTH residents to the south and southwest of the RTH experienced significant concentrations of murders over the time period. This murder migration further suggests the increase may be related, at least in part, to the demolition of the RTH and the relocation of its residents.

Figure 5 is a temporal illustration of murder rates per one thousand persons among South side police districts over the duration of the RTH demolition. There was a drastic decline in murder within the 2nd PD, where the RTH were located, from 1999 to 2002 and continuing through 2009. Adjacent to the 2nd PD, the 21st PD saw the second largest decrease in murders. Though the entire area saw declines in their total population over

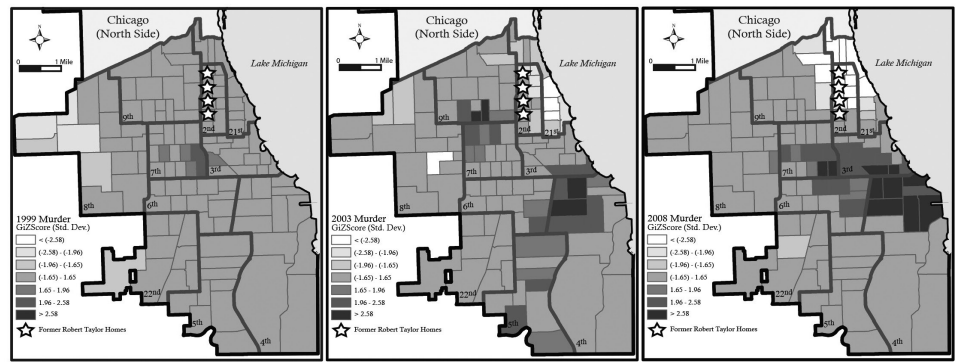


Figure 4. Hotspot analyses of murders at the beat level in the study area: 1999, 2003, and 2008. Source: Chicago Police Department.

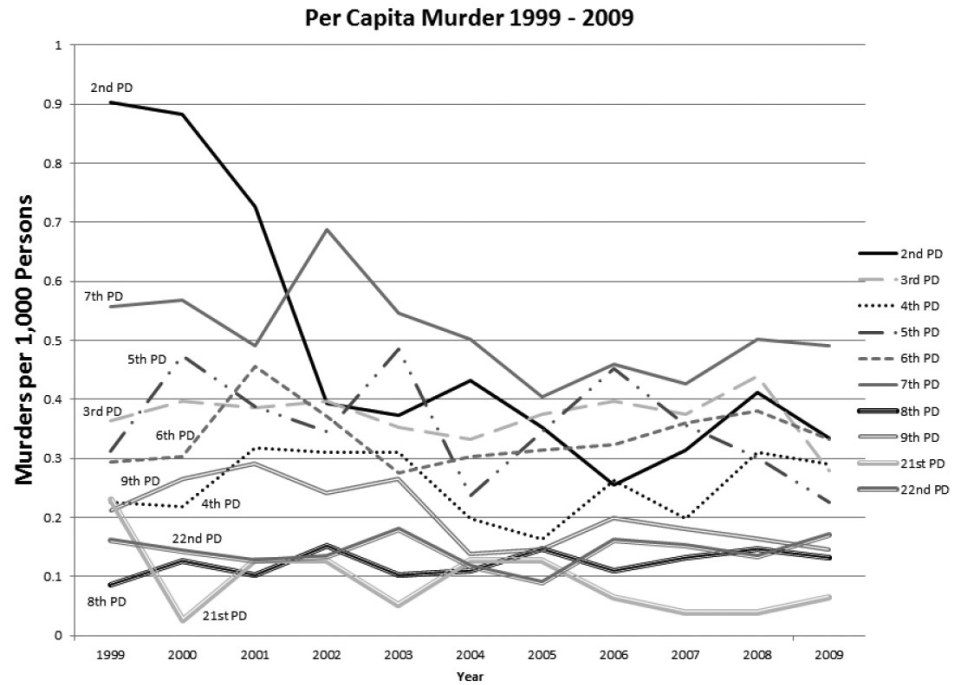


Figure 5. Per capita murder rates of South Chicago Police Districts in the study area, 1999 – 2008. Source: Chicago Police Department.

the time period, the most common path of migration for former RTH residents, the 3rd through 7th PDs, saw the smallest declines in the murder rate (or in some cases increases) over the time period.

EXHIBIT B: ROBBERY

Robbery is defined by the CPD as the taking or attempting to take anything of value under confrontational circumstances

from the control, custody, or care of another person by force or by threat of force or violence and/or by putting the victim in fear of immediate harm (CPD 2001). The robbery index includes attempted robbery, armed robbery, strong-arm robbery (no weapon), and vehicular hijacking.

Following the model used for murder above, Figure 6 illustrates the hotspots and coldspots for robbery in 1999, 2003, and 2008 throughout the study area. In 1999 police beats containing the RTH all fell between -1.96 and 1.96 z-scores. The hotspot was concentrated to the south of the RTH within the 3rd, 4th, 6th, and 7th PDs, and contained thirteen beats with scores above 2.58. The largest coldspot concentration on robbery, was located in Police District 9, along the northwest edge of Figure 6, illustrated with one beat having a z-score below -2.58.

By 2003, the hotspot was still concentrated on the same region as in 1999; however, it also expanded to the south and west. The spatial patterning of robbery had also increased and had grown from thirteen to twenty-four beats over 2.58. As the hotspot migrated, and became more concentrated so too did the coldspot. In 2003 the largest coldspot was concentrated in the beats containing the Robert Taylor Homes and those to the north. The total number of beats with z-scores below -2.58 had increased dramatically from one to sixteen, from 1999 to 2003.

In 2008, just one year after demolition of the RTH was completed, a very different pattern of hotspots and coldspots had developed from that observed in 1999. The area to the south and southwest of the RTH shows the hotspot had become highly concentrated, and expanded. From 1999 to 2008 the number of beats with z-scores over 2.58 had increased from thirteen to twenty-six. As the routines activities theory suggests, crime is motivated by opportunity for offenders. As the density or potential victims decreased with the demolition, urban renewal efforts in the area brought persons with higher levels of income and a greater police presence into the 2nd, 9th, and 21st Districts. Coldspots illustrate this, where

all beats containing the RTH went from insignificant in 1999, to significant; all had z-scores under -2.58. The total number of beats with occurrences less than -2.58 had increased dramatically during the RTH demolition from one, in 1999, to twenty-one in 2008. The coldspot had become more concentrated in the RTH area with the 2nd, 21st, and 9th PDs as the beneficiaries.

It should be noted that the areas of murder and robbery hotspots and coldspots are concentrated in similar areas. Both of these examples suggest that murder and robbery occurrences have significantly declined at the former RTH site as well as in its neighboring 9th and 21st PDs. They also suggest that higher concentrations of murder and robbery had occurred concurrently within the 3rd, 4th, 6th, and 7th PDs. The relocation, and concentration, of these hotspots and coldspots suggest there is merit to crime displacement of these two variables from the RTH to PDs that have received influxes of former RTH residents.

Figure 7 provides further evidence of robbery displacement. As previously noted, Figure 6 confirms the dramatic decline in occurrences within the 2nd and 21st PDs throughout the RTH demolition period. Both PDs saw a significant decline, shortly after demolition was initiated in 1999. The 2nd PD observed a dramatic decline in robbery until 2005, when robberies increased slightly before declining through the rest of the demolition. Similarly, the 21st PD observed a dramatic decline in robbery until 2003, when there was a spike lasting until 2005 and then declining throughout the remainder of demolition. The 3rd, 4th, 6th, and 7th PDs observed an entirely different pattern of occurrences than that of the 2nd and 21st PDs. After demolition, instead of observing a decrease in robbery, they had observed occurrences near, or dramatically above the levels at the beginning of demolition in 1999.

EXHIBIT C: TOTAL INDEX CRIME

Total crime numbers herein are reflective only of the CPD's recorded Index Crimes, thus this

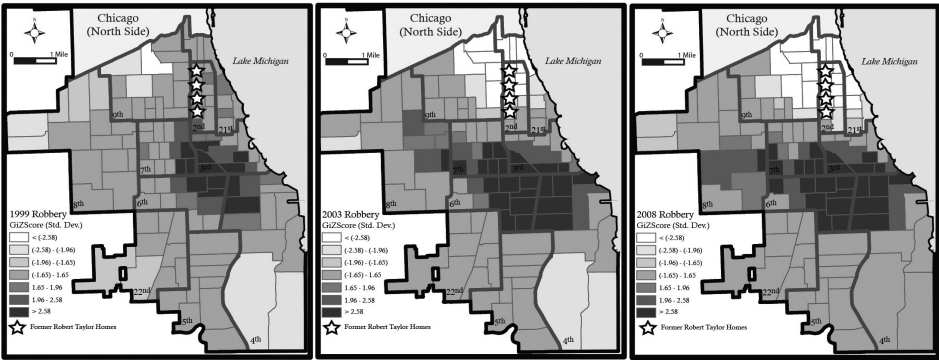


Figure 6. Hotspot analyses of robbery at the beat level in the study area: 1999, 2003, and 2008. Source: Chicago Police Department.

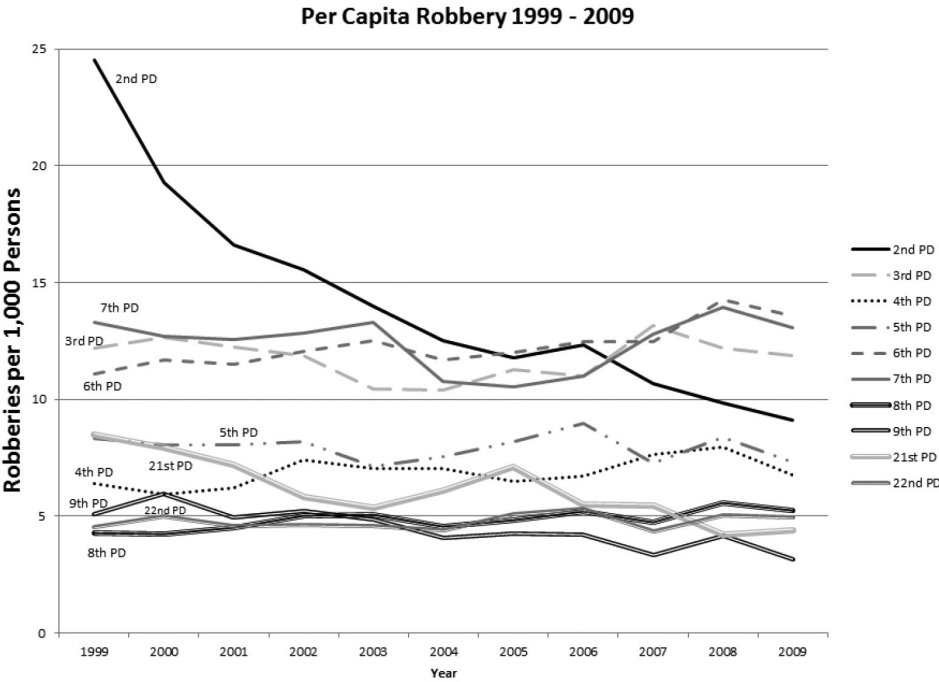


Figure 7. Per capita robbery rates of South Chicago Police Districts in the study area, 1999 – 2008. Source: Chicago Police Department.

analysis does not reflect every crime committed, but only those reported, within the specified beats. An Index Crime is defined by the CPD as “more serious offenses” and include the crime categories of: 1st and 2nd degree homicide, criminal sexual assault, robbery, aggravated assault,

aggravated battery, burglary, larceny, motor vehicle theft, and arson (CPD 2001).

Throughout the time period, Figure 8 shows total Index Crimes for the study area and affirms that many of the beats containing the RTH demonstrated insignificant cluster-

ing, falling within -1.65 and 1.65 SD. Here, there are three small hotspots, one on the north side in the 21st PD, one on the west side in the 8th PD, and one on the east side on the border of the 3rd and 4th PDs. There were no beats classified above 2.58, a total of four between 1.65 and 1.96, and a total of seven between 1.65 and 1.96 SD. The coldspots were dispersed across the South Side with one beat under -2.58 , five between -2.58 and -1.96 , and six between -1.96 and 1.65 .

As with the trend of murder and robbery, 2003 shows a dramatic shift in index crime concentration, and an intensification of hotspots throughout the study area. With the seven other Index Crimes factored in, there is an expansion of the two hotspots observed in 1999, one of which shares location with Venkatesh's relocation study. The hotspot on the West Side, in the 8th PD is composed of six beats, all of which are classified above 2.58. The second located in 3rd, 6th, and 4th PDs contained a total of twenty beats, twelve of which were classified above 2.58, four between 1.96 and 2.58, and four between 0.65 and 1.96. The coldspots in 2003 had also concentrated on the RTH site with a small cold spot on the southeastern part of the 4th PD. The RTH coldspot contained thirty beats; twenty-five below -2.58 , four between -2.58 and -1.96 , and one between -1.96 and -1.65 . The second coldspot contained two beats, both of which were classified between -1.96 and -1.65 .

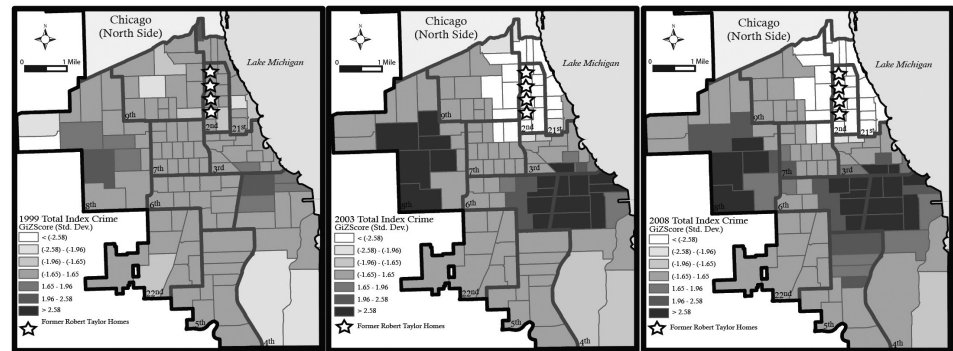
The patterns illustrated in Figure 8 for 2008 are similar to those found in 2003, in that both the hotspots and coldspots have expanded throughout the study area as the final residents of the RTH migrated mainly to the southern areas of the study area. The western hotspot had expanded from six beats in 2003, to eleven in 2008; four of which had z-values above 2.58, four between 1.96 and 2.58, and three between 1.65 and 1.96. The southern hotspot expanded from twenty to twenty-six beats, thirteen of which above 2.58, seven between 1.96 and 2.58, and six between 1.65 and 1.96. The most distinguished coldspot in 2008, continued to

be centered on the RTH site and grew from thirty, in 2003, to thirty-one beats, in 2008, twenty-eight of which were below -2.58 , and three between -2.58 and 1.96. This analysis of hotspots and coldspots supports a connection between drastically reduced Index Crime occurrences around the RTH site, and increased Index crime occurrences elsewhere on Chicago's South Side, particularly in the 3rd, 4th, 6th, and 7th PDs, where Venkatesh concluded a majority of former RTH residents were relocating.

As a whole, crime throughout the United States saw decreases during the first decade of the new millennia. This was certainly true for the city of Chicago and in the study area as a whole. City-Data (2013) shows the rate of index crimes for the entire city per 100,000 people dropped from 900.2 in 2000 to 586.8 in 2009. As the data provided by the CPD indicates, our study area experienced overall decreases in total Index Crimes as well. Yet, though crime rates had decreased over this decade, concentrations of crime increased in the southern area of the Chicago. Figure 9 illustrates the changes in total Index Crimes in all the police districts. Supporting the figures mentioned above, the largest decline in crime during the period occurred in the 2nd (-98.2) and 21st (-57.71) police districts, while the 3rd, 6th, and 7th districts demonstrated much higher incidence of crime compared to their peers. The shift in these patterns over the RTH demolition period offers valuable insight for understanding these patterns of crime in Chicago's South side and provide spatial evidence of crime displacement.

ENDURING OUTCOMES

Examining changes in crime across the PDs receiving large quantities of former CHA residents is a way of quantifying and assessing the amount of crime displacement taking place. The hotspot maps and charts in Figures 4 – 9 suggest there is a relationship between crime hotspots emerging in neighborhoods with high concentrations of former RTH tenants, and coldspots emerging



districts south of the RTH. Ventkesh (2001) clearly illustrated many residents of the RTH migrated to areas south of the homes. These residents, already economically disadvantaged, moved to areas with persons in the same financial situation. As the CHA's Plan of Transformation took hold in former areas of the RTH, lower population densities, increased incomes of new residents, and higher police presence all contributed to lower levels of crime. Though overall numbers of crimes over the decade slightly decreased in the areas receiving former RTH residents, incidents of crimes become more concentrated in the police districts of the south.

These insights illustrate how the problems of public housing go further than the physical state of the buildings themselves. While the buildings can simply remind us of the plight of residents, large systemic problems exist when studying the displacement of persons due to gentrification or urban redevelopment projects. These remnants of the past place urban planners and leaders in the difficult position of improving the quality of life for all residents, while also increasing tax revenue and city reputation at the expense of the underprivileged. This study illustrates to policy makers solving the problems of public housing cannot be done by simply dispersing residents across the city. Therefore, if public housing transformation is not carefully planned, results, such as in south Chicago, are likely to continue.

Critics of the New Urbanism efforts pushed forward by initiatives like HOPE IV and the CHA have found successful revitalization efforts have often increased property values, forcing original residents and businesses to leave, and often have not taken the needs of diverse groups into consideration (Day 2003; Shibley 1998). This is certainly the case in the area around Cabrini-Green. While not all residents were displaced to the surrounding areas, new housing was built and Section 8 vouchers allowed some residents to stay in the area. To date, urban renewal has been successful around the former site of the Cabrini-Green complexes, but former residents that

stayed in the area are now subject to new challenges in the form of higher costs of living and conflicts of culture. A long-serving south Chicago police officer (Officer A) who was integral to this research noted that new white residents in these areas (Cabrini-Green or the areas around the old RTH) do not often understand black culture. Of note are numerous calls regarding noise disturbances of groups of African-Americans congregating on front porches. Officer A indicated this is form of entertainment common in black culture in Chicago. He noted, in his opinion, this example illustrates growing pains as new neighbors adjust to living with one another and he believed time would most likely cure these issues. No matter the result, this example is certainly a better alternative to the plight of a majority of RTH residents that were displaced south of the city in areas with similar and limited resources as those faced while living in the RTH.

Comparisons between the two notorious complexes are not the point of this study. The Cabrini-Green area has the economic advantage of being in close proximity to affluent areas of northern Chicago (blocks away from the Gold Coast) with higher socioeconomic conditions, overall less crime, and fewer complex residents to displace. The movement of RTH residents to areas of similar poor socioeconomic situations not only increased further populations of poor to these areas, as this study indicates, so too was crime displaced, adding further complications to an area already facing difficulties. Studies such as this certainly can be used by policymakers in developing better strategies on how best to respond to residents impacted by urban renewal. Moving residents to areas of similar poor economic situations only concentrated crime, therefore it would seem that integrating residents into the redeveloped areas instead of displacing to new areas might be an effective strategy. As wealthier citizens move into the area, police presence increases and, in the case of Cabrini-Green and the new areas of the redevelopment of the RTH, crime rates and concentrations

decreased. While the prospect of successfully integrating all former public housing residents is a long shot and those that are integrated face a difficult road ahead, the reality faced by most displaced RTH residents is not the correct model. Systemic changes need to focus on the needs of all participants involved in all phases of redevelopment. Though the reminders of the past have been demolished from the south Chicago skyline, headlines of murder and strife in south Chicago maintain the infamous legacy of public housing in the United States.

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