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Predicting and Analyzing Gentrification in Atlanta, Georgia

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To the Graduate Council:

I am submitting herewith a thesis written by Jonathan M. Law entitled "Predicting and Analyzing Gentrification in Atlanta, Georgia." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Geography.

Anita Drever, Major Professor

We have read this thesis and recommend its acceptance:

Thomas Bell, Ronald Foresta

Accepted for the Council:
Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Predicting and Analyzing Gentrification in Atlanta, Georgia

A Thesis
Presented for the
Master of Science Degree
The University of Tennessee, Knoxville

Jonathan M. Law
May 2008

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Abstract

First viewed as an aberration by some when it began to occur in inner cities, the process of gentrification is now common and even significant in U.S. cities, as it runs counter to the urban sprawl that plagues most of them. Gentrification can have far-reaching effects, as it usually involves rising property values and changes in ethnic make-up, and sometimes gives rise to concerns over displacement of original residents and affordable housing. In the context of a broad literature on gentrification which has failed to produce much agreement on its causes or how it works, this research attempts, utilizing census data from Atlanta, Georgia for 1990 and 2000 to attempt to understand how gentrification begins and progresses in a Southern city. I conduct T-tests between gentrifying and non-gentrifying inner city neighborhoods for socioeconomic, housing and geographic characteristics, and then attempt to create a predictive model for where gentrification will occur based on these variables. I then further examine the geography of gentrification and the housing and ethnic make-up of gentrifying neighborhoods in Atlanta. Only one housing variable, percent built before 1940, and no socioeconomic variables were significant in the model. The significance of this variable, coupled with the overall difficulty in predicting gentrification, confirmed that various forms of gentrification are taking place in Atlanta, with older housing in some areas being cleared by development companies to make way for large multifamily housing developments, and in others being renovated one by one. Significantly, this research found that geography has an important role in the process, with clustering of gentrifying neighborhoods probably as a result of diffusion from maturing gentrified neighborhoods. Despite Atlanta's sizable African-

American middle class, the data did not indicate African-Americans playing a larger

role in gentrification there during the 1990s. Along with these findings, this study

confirms the need for further research on the ways gentrification starts, progresses,

and affects the people involved.

Table of Contents

List of Figures

List of Tables

Chapter 1

INTRODUCTION

During the 1990s, the gaze of urban geographers and urban sociologists

shifted away from the CBD and its surrounding areas to edge cities on the urban

fringe. However, during this time significant changes were taking place in the inner

cities of urban areas, with more middle to upper-income families and individuals

buying lofts and fixing up older homes within view of downtown skyscrapers. This

process, known as gentrification, is leading to improvements in central city housing

stock and increases in inner-city tax bases, but also possibly to the displacement of

poor, often minority residents. Considered an aberration by some when it first began

to appear in American cities, gentrification is now rather common and is even

"inching toward spatial significance in some cities" (Hackworth 2007). However, the

continued progression of gentrification in large cities such as Atlanta, as well as the

various ways it manifests itself in today's inner-city neighborhoods, confound our

understanding of where it occurs and how it progresses. With this in mind, my

research explores the gentrification process during the 1990s in Atlanta, Georgia in an

effort to discover the kinds of neighborhoods in the region most likely to undergo

gentrification. It also discusses the geography of gentrification in Atlanta in the

context of broader urban trends and government policies.

Gentrification is "inherently geographic in its manifestation" (Wyly &

Hammel 1999) and while it is clear that it is taking place in most cities, little is known

about which areas of these cities will gentrify and which will suffer further

disinvestment. This project will focus on answering this question by creating a

predictive model for gentrification using cases from Atlanta, Georgia. The primary objective of the model will be to determine if the socioeconomic and housing characteristics of a neighborhood can predict whether or not it will gentrify, and if so, which of those characteristics are predictors. It will also serve as the basis for analyzing the geography of the process in recent years, which is a focus of this study, by indicating the significance of the proximity of gentrifying areas to the CBD and to other gentrifying areas.

This study will pay especially close attention to one group of socioeconomic characteristics: those describing ethnic make-up. In examining ethnic make-up of gentrifying neighborhoods at the beginning and end of the study period, it will determine if minorities, and African-Americans in particular, are more likely to participate in gentrification in a city with a significant African-American middle class such as Atlanta. This study will also consider the age and types of housing present in gentrifying neighborhoods. In relation to housing, it will especially consider the nature of gentrification in areas, usually in close proximity to the CBD, that are seeing high numbers of new housing units in the form of large redevelopment projects and multifamily buildings, which is a contrast to individually driven gentrification. In considering these questions, this research will attempt to illuminate how gentrification began and progressed during the 1990s, and to understand its role in shaping urban areas of the future.

Gentrification and the Urban Environment

Gentrification is a significant force in shaping urban land use patterns in general, in that, in addition to being a hallmark of uneven development, it is an antidote to sprawl and its harmful effects on the human and physical environment. The scale of gentrification's impact on population and housing stock as a whole has been questioned in earlier studies (e.g. Berry 1985, Bourne 1993); however, more recent research has shown that it is having an increasingly pronounced effect on urban landscapes (Wyly & Hammel 1999). Some do not believe gentrification represents a "back to the city" movement by a large segment of the population (Wittberg 1992, p. 27; Gale 1984); however, it is diminishing the ill effects of sprawl, which include congested roads, higher public expenditures on infrastructure, and degradation of prime agricultural land, among others (Speir & Stephenson 2002). Gentrification may signal a slowing of urban sprawl, as some see sprawl as the cause of central city disinvestment (Nivola 1999). In addition, research has exposed entrenched patterns of uneven development within urban areas (Wilson 1991), and gentrification is one of the few counterbalances to this phenomenon.

Also, depending on the extent to which gentrification slows urban sprawl, it could have the effect of simply taking the place of growth at the urban fringe which is usually more costly to local governments (Burchell & Mukherji 2003). It is acknowledged that gentrification will likely have fiscal consequences for the city it occurs in (Nelson 1988).

In recent years, many central cities have found themselves in a dire budgetary situation (Ladd 1999), and gentrification is one means by which to add to a city's

coffers. Gentrification usually causes property values in an area to go up (Hamnett 1984; Ley 1986), and this has a positive effect on the tax bases of central cities. Gentrification is believed by some to be positively correlated with the fiscal health of central cities, as it involves the in-migration of higher-income households (Nelson 1988). However, outmigration in central cities has been connected to the declining provision of public services (Frey 1980), and this outmigration thus "interacts with changes in taxes, services and employment bases in a self-reinforcing cycle that tends to make decline cumulative" (Nelson 1988, p.9). Gentrification can break this cycle of decline.

Gentrification also affects the availability of affordable housing, because it often involves the displacement of low-income residents (Atkinson 2004; Freeman & Braconi 2004). While the degree to which gentrification causes displacement remains contested, it is a process that affects the inner-city housing stock by driving up housing values in neighborhoods surrounding gentrifying areas. This is important because the central city contains a significant proportion of the affordable housing stock in most metropolitan areas.

In addition to this, residing in the central city may be beneficial to the employment prospects of low-income individuals. A large body of research has evolved on the spatial mismatch hypothesis, which posits that due to its decentralization and suburbanization, employment in general has become less accessible to a high percentage of lower-income and minority workers who formerly depended on these central city jobs. Research has also shown, however, that

4

residences in the inner city tend to be more accessible to lower-skilled jobs than suburban housing (Van Ham *et al*. 2001, Fainstein *et al*. 1983).

Neoclassical models of residential location (Alonso 1964) stipulate that individuals with greater incomes will locate at a greater distance from the CBD. Gentrification has been of some interest in this context, as it involves higher-income households increasingly taking up residence in inner-city areas. Thus, it challenges neoclassical notions that space and low densities take precedence over accessibility to the central city (Hamnett 1991).

In recent decades gentrification has become relatively common in cities around the world. It is also a process that increasingly occurs in cities further down the urban hierarchy (Dutton 2003, Lees 2000). Wyly and Hammel (1999) have gone so far as to describe it as "a process that has become a durable feature of Western cities in general and U.S. cities in particular." Clearly, the significance of gentrification in cities is increasing; however, its effects on the urban landscape are not completely understood.

Site Selection

There are several reasons for selecting Atlanta as the study area. Its relatively large size ensures that it will have a number of gentrifying areas, allowing for generalizations to be made more easily based on the data. There is also a relative lack of gentrification research on cities in the Sunbelt, a fast growing region that has become increasingly urbanized, in contrast to its primarily rural and small town character in the past. Given that much of Atlanta's growth has occurred after World

War II, its housing stock is slightly newer and its land use patterns in general are different from other cities even in other parts of the U.S. Such factors may create different patterns or dynamics related to gentrification as it occurs in cities such as Atlanta.

Atlanta also has a significant minority population, with a large African-American population (61.4% in 2000) in particular (U.S. Census Bureau). Thus, its demographic makeup results in a greater population of middle class minorities than would be found in many other cities. The Atlanta context raises questions about definitions of gentrification, as the gentrifiers could easily be white or black in contrast to traditional models where minorities are forced out and not usually thought of as gentrifiers. While nationwide studies have shown no correlation between the inner-city minority population and the extent to which gentrification takes place (Friedenfels 1992), little is known about the effect of the minority population of a neighborhood on the likelihood of that neighborhood to gentrify. Furthermore, in a city like Atlanta, such minority neighborhoods could conceivably gentrify while showing little change in racial makeup (Bostic & Martin 2005).

The Context for Gentrification in Atlanta

Widely considered the capital of the "New South," in addition to being the capital of Georgia, Atlanta is the center of the largest metropolitan area in the Southeast. The Atlanta MSA is comprised of 28 counties (all in Georgia), and its population in 2006 was estimated to be 5,138,223. The population of the city of Atlanta itself was estimated in 2006 at 486,411 (U.S. Census Bureau). Thus, less

than 10% of the metropolitan area's population lives in Atlanta proper. After 1990, when its population dipped just below 400,000, the city of Atlanta reversed a two-decade trend of population decline.

The 1996 Olympic Games were held in Atlanta and directly led to much redevelopment in its inner city. Apart from the facilities constructed or modified specifically for the Olympics, which include Centennial Olympic Park and what is now Turner Field, the event led to the creation in 1993 of the Corporation for Olympic Development in Atlanta (CODA), a nonprofit organization whose mission was to pursue redevelopment projects and urban design improvements. The largest such project was the redevelopment of Techwood/Clark Howell Homes, which at the time was a large, dilapidated housing project. Now a mixed-income townhouse and apartment development, it lies within the study area for this project. Beyond this development, CODA's efforts at renewal failed to materialize on a large scale, but it was instrumental in making many pedestrian and streetscape improvements in Atlanta's inner city as well (French & Disher 1997).

African-Americans comprise the majority of Atlanta's population, as has been the case for decades, though their share of the population has decreased slightly in recent years. First described as "the city too busy to hate" by its longtime mayor William Hartsfield in 1955, every Atlanta mayor elected since 1973 has been African-American. Along with the city's white leadership, Atlanta's African-American elite has wielded considerable power in the city's politics for decades (Kruse 2005). African-Americans comprised 67.1% of Atlanta's population in 1990,

and, therefore, in Atlanta in particular they may play a larger role in the process than in other cities.

Since the 1960s, Atlanta has seen a dramatic increase in the number of corporate headquarters located there, and its prominence in the national economy is firmly entrenched (Walcott 2000). However, the mass suburbanization of many of its corporate functions, and of its residents in general, is well documented (Gong and Wheeler 2002). Atlanta has sometimes been described as the "poster child for sprawl," and its suburbs (its northern suburbs in particular) have grown in recent years at an alarming rate. The Atlanta metropolitan area now spreads over a geographical area of 8,376 square miles. As of 2000, average commute times in the Atlanta MSA were the nation's third longest, trailing only New York and Washington-Baltimore (U.S. Census Bureau 2000). Eight of every ten housing units constructed in the metropolitan area during the 1990s were single family residences. Its public transit system, MARTA, serves only two counties in the metropolitan area (Fulton and Dekalb). Furthermore, it is the nation's largest transit agency that does not receive earmarked state or regional funds (Bullard *et al*. 2007), and thus struggles financially.

Poor regional mobility has contributed to poor access to jobs in the area. Especially pertinent to gentrification taking place in its inner city, the Atlanta metro area has been a focal point for the spatial mismatch debate. Not surprisingly, the two counties – Fulton and Dekalb –with access to public transit are the most centrally located. However, 61.9% of jobs in the metropolitan area are located ten miles or more from the central business district (Glaeser *et al*. 2001). Many of the largest

employment and activity centers in the area occupy peripheral locations. The

Perimeter Center area and the Cumberland-Galleria area are examples of such

"suburban downtowns" (Sultana 2000).

The racial makeup of the city of Atlanta and the prevailing development

patterns in the metropolitan area, one might hypothesize, would impact the

gentrification process in its inner city. This study will, in part, illuminate the effect

that Atlanta's large minority population has on gentrification patterns within its inner

city.

Chapter 2

THE GENTRIFICATION PROCESS

To study the process of gentrification, one must first clearly define the process itself and the effects it has on neighborhoods. However, there is considerable debate in the literature over how best to do so. Gentrification is loosely defined as "the restoration and upgrading of deteriorated urban property by middle-class or affluent people, often resulting in displacement of lower-income people" (American Heritage Dictionary 2004). Most research associates the process with some kind of physical upgrading, population change, or both. Generally speaking, disagreement as to what is defined as gentrification is rooted in conflict over what causes it. A large facet of this debate pits demand-side against supply-side arguments. The former arguments identify changing tastes and preferences by a growing population of "gentrifiers" (including, among others, young urban professionals, or "yuppies") as the underlying cause of gentrification, while the latter argument states that changing capital flows and economic forces have fueled inner-city reinvestment. Included in the demand-side argument are assertions that gentrification can be measured by growth in the number of people employed in professional, office-oriented occupations and is related to changes in the division of labor itself (Ley 1986, Van Criekingen & Decroly 2003). This is arguably particularly the case in Atlanta, a Sunbelt city with a strong service sector economy. The demand-side model is a consumer-oriented model which stresses not just the importance of location, but also of neighborhood amenities, architecture, and the like. Thus, it identifies shifting consumer preferences as the primary cause of gentrification. Supply-side or production-side arguments focus on

capital itself as driving neighborhood change, and identify explanations, such as the rent gap, that have to do with the difference between the actual capitalized ground rent of a piece of land and its potential ground rent with reinvestment (Smith 1987). According to these types of arguments, the needs of production, and in particular the need to turn a profit, are what drive gentrification (Smith 1979), hence their focus on the producers of housing in explaining it.

The more recent literature on gentrification agrees that neither the supply nor the demand side argument provides a sufficient explanation on its own, and that likely explanations will lie somewhere in between the two (Lees 2000; Redfern 1997). This is clearly stated by Hamnett (1991) in his examination of both perspectives, in which he observes, "although the rent gap may be necessary for gentrification to occur, it is not sufficient." Thus, structure and agency seem to complement each other in forming the basis for gentrification in inner cities. Hackworth and Smith (2001) speculate that gentrification in recent years is driven more by economic forces than cultural factors, "as the scale of investment is greater and the level of corporate, as opposed to small-scale capital, has grown." Proliferation of "suburban-style subsidized housing that suddenly boosts house values across tracts" and "luxury apartments recently constructed at the frontier between gentrified enclaves and severe inner-city poverty" (Wyly & Hammel 1999) in inner cities may be related to this and is a departure of sorts from gentrification in earlier decades, which usually entailed renovation of mostly single family housing in older, formerly middle-class neighborhoods. Heightened participation of development corporations, which finds firms increasingly being the first to redevelop inner-city property for more affluent

residents, "is not simply the 'maturation' of gentrification in individual neighborhoods" (Hackworth 2002). Today, more often than not, corporate capital acts as the "pioneer" gentrifying a neighborhood. State involvement in gentrification has also increased since the early 1990s. A greater reliance on tax revenue has created a form of "entrepreneurial governance" that has local governments more involved in inner-city redevelopment (Hackworth 2007). Wyly and Hammel (1999) have also shown that federal policies favor expanding existing pockets of gentrification, often simply by removing public housing acting as barriers to it.

Displacement of residents in gentrifying neighborhoods is a controversial issue (Freeman 2004). Displacement due to gentrification in central city neighborhoods has been shown to disproportionately affect the elderly (Atkinson 2000a) and possibly the poor. These trends are not well understood and have been difficult to prove. Problems in tracking the movement of residents and determining their reasons for moving have often rendered studies of displacement ineffective (Atkinson 2000b). Unless social transformation is a result of "upward mobility, increased density, or current residents moving out for some reason unrelated to gentrification, displacement is the inevitable result" (Millard-Ball 2002). However, some gentrifying areas began transforming when new well-educated residents with modest incomes began realizing their high earnings potential. Moreover, often resident turnover in gentrifying neighborhoods does not occur more quickly than it does in other neighborhoods (Freeman 2005). There is also disagreement, as with the process of gentrification itself, about what constitutes displacement. For example, some 'softer' forms of displacement, such as an individual moving due to their

inability to afford a price increase, are not considered displacement at all by some researchers (Atkinson 2000b). Furthermore, sometimes groups displaced by such methods do not view themselves as having been displaced, but rather simply subject to the same market logic as everyone else.

One could relate the problem of displacement to gentrification's "role…in the larger scale dynamics of migration in the metropolis" which "remains largely unknown" (Lyons 1996). In terms of the housing stock, migration of people from one part of a metropolitan area to another is directly tied to the phenomenon of housing filtering upward or downward. Gentrification is a process of physical renewal that often involves housing renovation (Helms 2003, Ley 1996) and thus in part drives migration of upper-income residents to a neighborhood (whose housing is filtering upward). Due to housing filtering upward in gentrifying neighborhoods, housing in other neighborhoods filters downward, and this fuels migration of lower-income residents to these neighborhoods.

The concept of filtering, however, is limited in its ability to inform our understanding of the gentrification process. Theories of filtering do not account for neighborhood effects and seem to poorly describe trajectories of the housing stock in areas where that housing stock is varied in terms of size and type. That is to say, a household may occupy a home in a certain neighborhood due to the desirability of the neighborhood; and, if for some reason they could not occupy a home in that neighborhood, they would occupy a newer, larger home in a less desirable neighborhood. In addition, gentrifiers often move into new housing units in the inner city instead of older, rehabilitated ones (Smith 1987). Furthermore, migration occurs

freely throughout inner cities, suburbs, and regions and thus is difficult to evaluate as part of a closed system. Regardless, its overall model of older, more well established households moving to newer suburban areas seems to accurately describe intraurban migration for the most part. This conforms to neoclassical theories of residential location, and may have less to do with the filtering process itself than the fact that the vast majority of families with children, which tend to be older and have higher incomes, choose suburban areas as their place of residence. In addition, previous studies have suggested that evaluation of gentrification within this overall residential mobility framework is necessary to identify the full effects the process has on cities and their housing stocks in particular (Millard-Ball 2002).

Defining and Measuring Gentrification

There are various approaches to defining and measuring gentrification in the literature. Many studies have included changes in the types of residents among their criteria, and these have often used income as the primary indicator of gentrification (e.g. Millard-Ball 2000). Meligrana and Skaburskis (2005) include income in their definition, describing gentrification as a process that "involves the loss of affordable inner-city housing through their renovation and upgrade by middle and upper-class households." Smith (1987) and Ley (1996) also use income to indicate gentrification, implying the broad acceptance of the increased presence of middle to upper-income residents as part of gentrification.

In another study, Ley (1986) utilizes the percentage of residents employed in professional occupations as part of a proxy indicator of gentrification. He later

identifies the process as "an upward movement in the social status of a census tract," (Bourne & Ley 1993) as did Atkinson (2000) some fourteen years later. While this criterion was not used as a condition for gentrification in this study, it carries with it an important concept to keep in mind: it implies an increase not just in the earnings but also in the earnings potential of a neighborhood's residents, and can in part reflect its potential for further upgrading. However, percent in professional occupations is highly correlated with median income in Atlanta, and thus only income is used as part of the criteria for this project.

Ley's (1986) methodology, however, is notable in this context because over a ten-year period (1971-81), it combines the percentage change in residents employed in the quaternary sector with the percentage change in residents with a college degree to create a "gentrification index." This is done for the entire inner city of each individual CMA rather than by individual neighborhoods. Ley conducted the analysis at a citywide level to test his hypothesis that a higher number of gentrifiers, the "new middle class," is responsible for gentrification in recent times. However, there is little to indicate his methodology would be less valid on a neighborhood level. Van Criekingen and Decroly (2003) utilize the same "index" in their research combined with percent age 25-34 or age 35-44 to create a "social status index." In keeping with these measurement approaches, an increase in the percentage of residents with college degrees is used in this study to illustrate an increase in the earnings potential of a neighborhood's residents.

Some kind of physical upgrading is almost always associated with gentrification wherever it occurs. While housing renovation has probably been the

most common indicator of this physical upgrading in the past couple of decades

(Zukin 1987, Wyly and Hammel 1998, Helms 2003), it is not the only means of

illustrating it. Housing price appreciation is also acknowledged as an indicator of

housing market activity (Ley 1986) associated with gentrification and has been

widely used in gentrification research (e.g. Covington & Taylor 1989, Freeman

2005). Hamnett (1984) states that gentrification will result in "significant price

appreciation in areas affected, both renovated and unrenovated." Figueroa (1995)

exclusively utilizes housing prices to delineate gentrifying areas in Regina, Canada.

While an indicator of physical upgrading is not used in selecting gentrified areas,

median home value in gentrified areas in this study increased 167% from 1990-2000,

while in areas that did not gentrify it only increased 73%. Thus, the areas identified

as gentrifying by the criteria used appear to satisfy the physical upgrading criterion as

well.

        While the widespread use of these variables in gentrification studies is

certainly enough to justify their use in this research, defining thresholds for

gentrifying neighborhoods for these variables remains an issue at hand. The literature

provides some useful examples for doing so.

        A neighborhood that has shown change must satisfy certain conditions

initially if it is to be considered gentrified. Most studies cite an inner-city location as

a requisite (e.g. Wyly & Hammel 1998, Badcock 2001), though the exact meaning of

the term varies. Thresholds for other variables vary throughout the literature as well.

Meligrana and Skaburskis (2005) use principal components analysis to identify a

factor which points to gentrifying areas – in this case, the factor loads highly on rent

change, income change, and a high percentage of buildings constructed before 1946. With regard to income, Meligrana and Skaburskis go so far as to select those tracts with positive scores on this factor in the lowest income quartile in the CMA at the beginning of the study period as potentially gentrifying. Thus, this study dictates that incomes must be well below the average for the metropolitan area. However, often simply having a median income below that of the city or metropolitan area in which the neighborhood is located is cited as a condition (Van Criekingen & Decroly 2003).

Meligrana and Skaburskis also dictate that tracts selected as gentrifying must be in the highest quartile of pre-1946 buildings for the CMA they are located in. This is not used in this study as part of the criteria for selection, but rather is one of the variables studied in the analysis.

Van Criekingen and Decroly's (2003) criteria for gentrifying areas regarding "social status index" (a combination of income and percentage of young professionals) is that the increase in this index must be greater than the mean for the metropolitan area for a neighborhood to be gentrifying. This research shares this method regarding increases in household income and percent with college degrees (see Chapter 3).

Methodologies and the Process of Gentrification

The way gentrification manifests itself varies, sometimes in ways that are difficult to predict. More broadly speaking to the process itself, "changes in the built environment often provide a valuable guide to describe the process, but actually are incidental to the place-based class transformation itself" (Wyly & Hammel 1999).

Examining the process temporally and contextually, Lees (2000) states that "gentrification today is quite different from gentrification in the early 1970s, late 1980s, even the early 1990s," and adds, "gentrification is not the same everywhere." These insights suggest that gentrification is a dynamic process which has changed over time and may change neighborhoods in different ways depending on their location (both in terms of the city's size and their location within the city) and their characteristics. Thus, approaches to studying the process have varied.

Figueroa's (1995) analysis of housing prices involves identifying those enumerating areas (EAs) with statistically significant price changes and evaluating the correlation between price and date of sale (to identify areas with rising or falling prices). Areas with correlations above 0.2 were identified as having significant price increases, and, if prices had begun near or below city averages, as gentrifying.

Van Criekingen and Decroly (2003) identify a multiplicity of distinct processes within the neighborhood renewal framework, which they refer to as "diversity" within gentrification. Relevant to this research are the processes they describe as 'gentrification', 'marginal gentrification' and 'upgrading.' Marginal gentrification differs from gentrification in that it does not result in above average wealth in the neighborhood. It is believed by the authors to be separate from the stage model of gentrification and related to "reshaping of life-courses" (Van Criekingen & Decroly, 2003, p. 2455) for young adults, as well as restructuring of the economy, which increasingly favors short-term or contractual work or multiple part-time positions in white-collar occupations. Thus, a substantial population of young, single, and highly educated but not particularly affluent individuals may seek out

18

residence in inner-city neighborhoods, and most of them will likely leave the inner city "once their familial and professional long-term stability is secured."

The Van Criekingen and Decroly study, it should be noted, required the neighborhood in question be "decayed and impoverished" (p. 2454), for gentrification and marginal gentrification to take place. A social status index created through principal components analysis was used to identify these areas, which included variables such as level of education, occupation and unemployment rate. Both of these processes involve an increase in social status greater than the metropolitan area mean, measured by percentage in professional occupations and percentage with a university education, and an increase in the percentage of either the population aged 25-34 or the population aged 35-44 greater than the metropolitan area mean. Improvements to the built environment were also required for all three processes (including upgrading), involving a higher percentage of housing renovations than the metropolitan mean (in Brussels), or a higher increase in mean rent than the metropolitan mean (in Montreal).

Approaches to describing the process of gentrification itself have varied as well. Dangschat (1991) and Lyons (1996) both describe cases of gentrification as lying somewhere on a continuum of waves of settlement. Dangschat describes gentrification in terms of a double invasion-succession cycle that involves initial rounds of highly educated "pioneers," then later (and sometimes overlapping) rounds of "gentrifiers," who have higher incomes. Neighborhoods in his study of Hamburg lay somewhere in this cycle, but even those dominated by "gentrifiers" began experiencing later "waves" of the process and were subject to the appearance of

19

"ultra-gentrifiers." Wyly and Hammel (1999) describe a key change in housing finance related to gentrification. Their study of mortgage data indicates that mortgage capital no longer systematically avoids gentrifying neighborhoods, as once was the case. Thus, typical stage models of gentrification in which a neighborhood begins changing with the appearance of artists, nontraditional households or other "urban pioneers" may no longer accurately describe neighborhood change. Kerstein's (1990) study of stage models of gentrification demonstrated that the evolution of a Tampa neighborhood (South Hyde Park) conformed to a stage model of gentrification, but at the same time described an adjacent gentrifying neighborhood (North Hyde Park) as having a different trajectory, in that it seemed more likely to be skipping stages. North Hyde Park began gentrifying a few years later, but, with respect to average number of children and occupation, its initial gentrifiers more closely fit the profile of later-stage gentrifiers in South Hyde Park. Furthermore, these initial gentrifiers tended to be more critical of their neighborhood than those in South Hyde Park several years earlier and more often wanted to see fewer low-income and rental units in the neighborhood.

Related to this is the dispersal of gentrification outward from already gentrified or elite inner-city neighborhoods. Berry (1985) once described the process of gentrification as "islands of renewal in seas of decay," but its continued advancement has caused Wyly and Hammel (1999) to reverse this statement, now referring to "islands of decay in seas of renewal." In the same study, Wyly and Hammel show the influx of mortgage capital into neighborhoods adjacent to gentrifying areas just as capital infiltrates the gentrifying areas themselves.

Geographic proximity to an already gentrified neighborhood is theorized to have an effect on the likelihood of gentrification in a neighborhood, and the trajectory it follows if it does gentrify (Hackworth 2002, Fidel 1992). Clark's (1985) study of Denver showed that gentrifying neighborhoods affected neighboring ones, as "investors and gentrifiers witnessed the growing strength of the process of gentrification in some neighborhoods and transferred expectations and strategies to others." Clark further observed that some neighborhoods gentrifying later than others in his study moved more quickly through stages of the process or skipped them altogether. These studies highlight the importance of geographic proximity in how gentrification begins and progresses in inner cities.

Hackworth (2001) presents a summary of the "changing state of gentrification" in recent years, saying "third-wave" gentrification describes the process in most neighborhoods today. This now common form of gentrification is characterized by elements discussed earlier: a greater effect on neighborhoods already gentrified in previous years as well as more remote neighborhoods; increased initiation by large corporations, who often redevelop entire neighborhoods; less resistance by working-class groups; and increased state involvement. In later research, Hackworth (2007) further confirms reduced opposition to gentrification as a key change in the process over the past two decades.

To some extent, the aforementioned studies indicate confusion over how the gentrification process works and how it manifests itself. It is widely believed that the process has changed in recent years. Despite the disagreement that exists regarding gentrification and subsequent calls for further analysis of it, several of the issues that

21

appear throughout the literature and are discussed here can inform this research.

However, due to such issues as the interdependence among gentrifying

neighborhoods (Clark 1985) and increased developer-led gentrification, creation of a

model to describe and predict the process accurately will likely be difficult. In light

of these facts, I have taken a couple of different approaches to the analysis of

gentrification in an attempt to fully explore the process. I utilize a systematic

approach of comparing gentrifying and non-gentrifying neighborhoods using logistic

regression and T-tests, and follows this with a closer look at the characteristics of

specific neighborhoods to evaluate them within the context of the observations of

aforementioned research on gentrification. This two-pronged approach will help to

paint a picture of the types of inner-city neighborhoods that can gentrify in a large

city, as well as help to evaluate the effectiveness of using a modeling approach to

pinpoint future gentrifying neighborhoods.

Chapter 3

ANALYSIS

This research aims to identify the types of neighborhoods most likely to

gentrify in Atlanta in 2000, using 1990 indicators. The first step was to conduct

difference of means tests for each variable between gentrifying and non-gentrifying

areas. In the second part of the analysis, a predictive model was constructed that

included the correlates of gentrification identified in the literature. A closer

examination of certain neighborhoods in the context of previous research was the

final step in analyzing the gentrification process in Atlanta. Trends and conditions in

Atlanta's inner city were then evaluated in context of the literature in discussion of

the data and conclusions.

Data

U.S. Census data on socioeconomic and housing characteristics for

neighborhoods was analyzed in this research. Neighborhoods were defined at the

Census block group level. The analysis was conducted at this scale because

gentrification may initially affect only very small geographic areas, even if eventually

it spreads to adjacent areas (Zukin 1987, Wyly and Hammel 1998). In addition, the

block group is the smallest geography level at which many variables used in this

analysis are collected. Thus, it was identified as the optimal neighborhood size, and

all data was collected at this level of aggregation. Data for several different variables

were downloaded for every block group in Fulton and Dekalb counties in Georgia for

the 1990 and 2000 Censuses. Census block group boundaries for 1990 and 2000

were obtained from U.S. Census TIGER/Line files, and from these, changes in block groups during this time period were manually determined. To allow for these boundary changes, data for some block groups (for 1990 and 2000) were combined. The most common such change was that two or more 1990 block groups were combined to form one 2000 block group (although for a few areas more than two 1990 block groups were combined to form two or more 2000 block groups). For block groups that were combined, some data could simply be added together while weighted means had to be created for others (e.g. median home value).

Not every neighborhood that is undergoing physical and/or socioeconomic upgrading, especially those that are suburban in character and occupy peripheral locations, is gentrifying. It was necessary to include only areas that could potentially gentrify in the analysis. Thus, in keeping with previously discussed gentrification studies, neighborhoods were removed from the analysis if they were already middle or upper-class as indicated by the average income level and level of educational attainment for the block group.

This study purposely utilized a relatively broad definition of gentrification in selecting the area it defines as "potentially gentrifying." There were two motivating factors for this. The first was to ensure a large enough sample size of neighborhoods to make statistical analysis tenable. The second was the lack of a widely agreed upon, specific definition of gentrification in the literature, coupled with the knowledge that different variations of the process (e.g. early gentrifiers moving into one area and late-stage gentrifiers moving into another) could be taking place simultaneously in Atlanta. In keeping with the aforementioned criteria, only those

block groups with at least 40% of their housing stock constructed before 1950 and with median household income and percentage of population holding bachelor's degrees below averages for the Atlanta MSA were identified as at risk for gentrification. This limited the study to inner-city areas, as is done in many other gentrification studies (Ley 1986), and to areas that were initially relatively poor and decayed, in keeping with the general agreement that it is a necessary precondition for gentrification (Van Criekingen & Decroly 2003; Wyly & Hammel 1998). The areas selected for the analysis include all areas that in 1990 were in a position to undergo gentrification between 1990 and 2000. There were a total of 93 areas determined to be potentially gentrifying. At this point, calculations necessary for the analysis were made (such as converting raw numbers to percentages and calculating changes in certain variables between 1990 and 2000). From this group of neighborhoods, neighborhoods that had increases (in terms of raw percentage) in median household income and percentage with bachelor's degrees that were higher than the average for the Atlanta MSA were identified as having gentrified (see Figure 1).

A diverse set of characteristics describes neighborhoods at risk for gentrification in Atlanta. The majority of areas identified as having gentrified are dominated by single-family housing. Furthermore, some of these were working-class neighborhoods for most of their history and have mainly smaller homes, while others are characterized by larger homes, some of which may have been divided into apartments. Most of the areas adjacent to or near the CBD exhibited extensive disinvestment in 1990, a trend that has begun to be reversed during the study period for this research. Particularly in the west and near-southwest parts of the city,
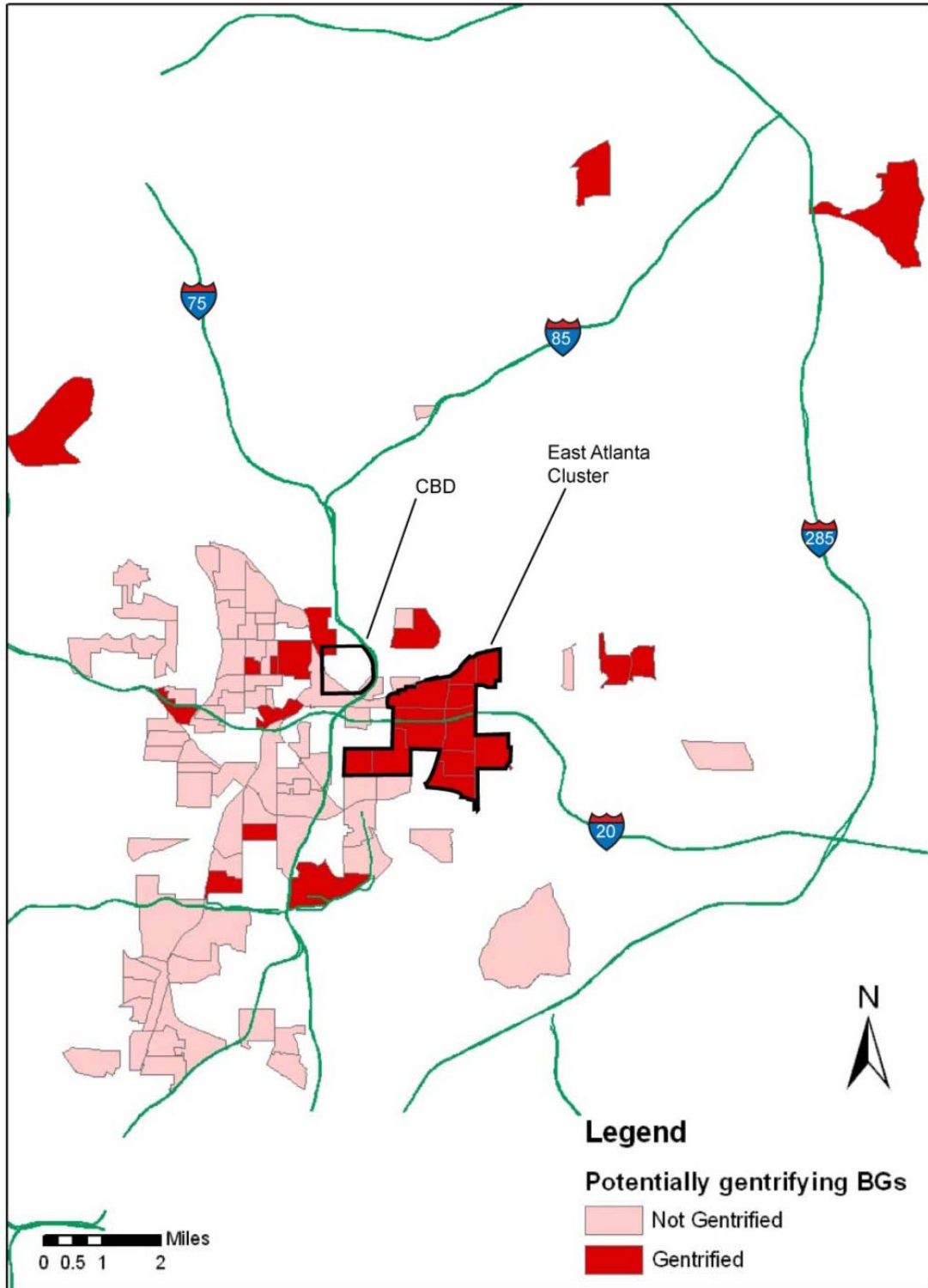
Figure 1: Potentially Gentrifying Block Groups in Atlanta
Source: U.S. Census Bureau, 2000.

African-Americans tend to be in the majority. Most of the northern part of the city is middle- to upper-income and thus was not determined to be at risk for gentrification.

Variables

The variables used in the analysis measure neighborhood socioeconomic, demographic, housing, and locational characteristics, and were selected for their potential to predict gentrification. These variables described the initial state of these neighborhoods (using 1990 data), their characteristics at the end of the study period (using 2000 data) and any changes in their characteristics from 1990-2000. Variables used to measure the characteristics of each neighborhood's population were average household size, average family size, household and family population, median age/age structure (more specifically, the proportion aged 22 to 34 and aged 65 and over), percent with bachelor's degree or higher, percent employed in professional occupations, mix of household types, and percent African-American and nonwhite. Such variables have been correlated with gentrification in previous research by Ley (1996), and relate to his hypothesis that gentrification is set into motion by individuals, not capital. Hammel and Wyly (1996) also showed income and occupation to be factors in differentiating neighborhoods identified as gentrifying by field surveys from non-gentrifying ones. The percent commuting less than 15 minutes and distance to CBD variables will illustrate whether or not closer proximity to work and to other amenities has been a factor in gentrification of neighborhoods. This could illustrate whether increases in white-collar employment in recent decades have a role in gentrification (given some neighborhoods' proximity to large

agglomerations of office space, such as downtown Atlanta), and whether or not proximity to employment centers within the metropolitan area is a factor in gentrification.

The housing variables included in the analysis were number and percentage of vacant housing units, percent rental and owner-occupied units, median rent, median value for owner-occupied units, percent built before 1950, percent built before 1940, percent single-family units, and percent units in a structure with 4 or fewer units. These variables have all been used in previous studies of gentrification. In particular, Helms (2003) has found number of vacant housing units, median home value, percentage of owner-occupied units and median structure age to be positively correlated with gentrification, and percent single-family units to be negatively correlated with it, as measured by physical improvements. The number of in-movers since 1990 variable is also useful in that it may suggest that a neighborhood is in a state of transition. Other housing variables in the study will inform the relationship of gentrification taking place to filtering processes, and to theories of residential location.

Methods of Analysis

Principal components analysis is a type of factor analysis that allows one to reduce a set of variables into groups or 'components'. It is commonly used as an exploratory tool to uncover trends in a data set that may not be readily apparent. More specifically, it can be used as a method of capturing underlying variables in a

dataset. Principal components analysis also allows one to deal with collinearity

problems in other statistical procedures by simply grouping correlated variables.

Variables included in a principal components analysis should be independent

of one another. Factors having explanatory value are identified by their eigenvalues,

which represent the fraction of the total variance the factor accounts for. In a

principal components analysis, variables are standardized so that their variance equals

1; therefore, the total variance will equal the number of variables in the analysis.

The analysis computes loadings for each variable on each factor, which

simply represent the correlation between each variable and each factor. Thus, those

variables with high loadings (generally greater than .4 or less than -.4) on a factor

represent a strong positive or negative association with that factor.

While attempted in this study, principal components analysis proved to be

ineffective with this data set, and thus was excluded from the final analysis. Results

of the principal components analysis can be found in the appendix.

Logistic regression, also utilized in this study, is a procedure which, by

transforming the dependent variable into a logit variable, allows one to use multiple

regression without violating the test's assumptions. It was used in this study instead

of ordinary least-squares multiple regression because of the binary nature of the

dependent variable. Independent variables in a logistic regression may be continuous

or categorical in nature, and although no r-square is calculated, significant variables

may be identified through chi-square tests for each variable and for the model as a

whole.

Furthermore, for each independent variable the analysis will calculate the odds ratio, which gives the increase (or decrease) in the odds of success (measured by the dependent variable) associated with a one-unit increase in the independent variable. An odds ratio varies between zero and infinity, and an odds ratio of 1 indicates full statistical independence, i.e., the independent variable has no effect on the odds of success of the dependent variable. The odds is simply the probability of success divided by the probability of failure. In a logistic regression, the coefficients or partial slopes represent a change in the logit, or log of the odds for the dependent variable, associated with a one-unit change in the independent variable. A Wald chi-square test determines whether or not each independent variable is significant.

To explore further differences between neighborhoods that gentrified and ones that did not gentrify, means for all variables were calculated for each set of neighborhoods. T-tests were also computed to determine if there were any significant differences in the variables between neighborhoods that did not gentrify and ones that did. A T-test simply tests the likelihood that two sample means come from the same population (i.e. that they are not different to an extent that is statistically significant). It assumes normally distributed variables, and may be conducted for samples with equal or unequal variances.

Chapter 4

MODELS AND FINDINGS

T-tests for differences in means of variables between neighborhoods that did

and did not gentrify between 1990 and 2000 revealed several differences between the

two sets of neighborhoods. These results are described in Tables 1, 2 and 3.

As previously mentioned, it is possible that there are different processes at

work in neighborhoods very similar to each other in Atlanta (see Table 1). This idea

is supported by the fact that no 1990 variable achieved significance in the T-tests.

There basically seems to be no way to clearly distinguish the initial characteristics of

neighborhoods that gentrified from ones that did not. Thus, the data seem to indicate

that gentrification manifests itself in many different areas and neighborhood milieus.

This idea is explored further in the discussion section that follows.

Table 1: T-tests for 1990 variables

Variable	Mean Gentrified	Mean NG	t Value
Average household size 1990	3.38	3.28	-0.14
% households with children 1990	34.54	34.17	-0.17
Median household income in 1989	16,543	18,353	1.12
Family/household income disparity 1990	2225	2431	0.22
% 65 and over 1990	12.36	13.04	0.43
% commuting less than 15 min 1990	23.12	19.04	-1.12
% vacant 1990	17.56	17.12	-0.15
% single family units 1990	56.32	53.93	-0.39
Median value 1990	46,669	46,081	-0.17
% African-American 1990	71.48	77.99	0.92
% nonwhite 1990	73.76	80.61	1.06
% 4 or fewer units 1990	77.65	74.06	-0.59
% 22 to 34 1990	21.31	22.62	0.86
% professional 1990	14.76	13.90	-0.55

Significant at: *: $p < .05$
Source: U.S. Census Bureau, 2000.

Table 2: T-tests for 2000 variables

Variable	Mean Gentrified	Mean NG	t Value
% living alone 2000	13.88	12.54	-0.93
Family/household income disparity 2000	1348	2140	0.49
% African-American 2000	67.16	82.06	2.65**
% nonwhite 2000	87.32	72.00	2.65*
% age 22-34 2000	24.20	20.09	-2.50*
% 65 and over 2000	9.88	9.64	-0.24
% commuting less than 10 min	9.28	7.30	-1.19
% commuting less than 15 min	18.68	15.59	-1.23
% bachelors or higher 2000	26.60	10.55	-6.07***
Median household income in 1999	31443	24151	-2.48*
% vacant 2000	11.18	11.82	0.33
% Moved since 1990	70.64	68.06	-0.81
% Moved since 1995	56.14	54.84	-0.38
% professional 2000	31.69	18.50	-4.23***
Average household size 2000	2.41	2.62	2.60*
Average family size 2000	3.13	3.34	2.80**
% built pre-1940	37.85	28.19	-2.78**
% 2 or fewer in household	65.38	59.03	-2.71**
% built after 1990	9.83	4.89	-1.94

Significant at: *: $p < .05$ **: $p < .01$ ***: $p < .001$
Source: U.S. Census Bureau, 2000.

Table 3: T-tests for change in variables 1990-2000

Variable	Mean Gentrified	Mean NG	T Value
Change % African-American	-4.32	4.07	3.12**
Change % nonwhite	-1.76	6.71	2.98**
Change % 65 and over	-2.48	-3.41	-0.76
Change % owner-occupied	11.12	2.61	-4.57***
% change median value	167.08	73.84	-2.39*
% change median rent	94.79	49.66	-2.24*
% change vacant	-6.38	-5.29	0.33
Population change	-36.52	93.16	0.85
Housing unit change	8.44	16.01	-0.43
% population change	64.46	13.57	-0.68

Significant at: *: $p < .05$ **: $p < .01$ ***: $p < .001$
Source: U.S. Census Bureau, 2000.

T-tests for many of the neighborhood socioeconomic indicators in 2000 were significant (see Table 2). The significance of the T-test for percent of housing units built before 1940 could be due to multiple factors. It may indicate that even with increased involvement of large development corporations in the process, areas with housing that lends itself well to renovation are more likely to see reinvestment, all other things being equal. By the same token, it may indicate that older areas are more likely to be disinvested and thus better candidates for clearance and redevelopment.

Significant differences in average household and family size for 2000 between gentrifying and non-gentrifying areas confirm widely held hypotheses. Gentrifying neighborhoods have a higher percentage of singles, as well as married couples with relatively few (and probably very young) children. In addition, there were significant differences between the two groups in percentage of the population age 22 to 34, percentage employed in professional occupations, and percent with a bachelor's degree or higher (all for 2000). This confirms the increased presence of young, well-educated professionals in gentrifying neighborhoods, though it is important to note they still do not comprise all or necessarily even most of the population in them.

The insignificance of the T-tests for the percent commuting less than 15 minutes and distance to CBD variables is an interesting result. This may be due to other neighborhood characteristics taking precedence over proximity to work for most individuals moving into gentrifying neighborhoods. However, these results do not discount the importance of geography in the process. Rather, they seem to suggest that while an inner city location is obviously still important, in terms of proximity to employment centers, one is not necessarily preferable to another. In addition,

gentrification in Atlanta's inner city indicates the significance of relative location in the process.

As expected, T-tests for variables measuring changes from 1990-2000 more clearly distinguished gentrifying neighborhoods from ones that did not gentrify (see Table 3). Significantly higher increases in median home value and median rent were seen in gentrifying neighborhoods. The t-tests for change in percent African-American and nonwhite showed significant differences between neighborhoods that gentrified and ones that did not. As with many of the other significant T-tests, these show Atlanta's gentrifying neighborhoods following a familiar trajectory thus far. Finally, the increase in percent of units owner-occupied in gentrifying areas was significantly higher than in non-gentrifying areas. It is well documented that individuals with higher incomes, of which gentrifying areas tend to have more, are more likely to own than rent. However, research has shown that homeownership opportunities in the inner city have increased for all income groups (Segal & Sullivan 1998). Furthermore, the desire of some individuals to own may be a key cause of gentrification, at least in neighborhoods with certain characteristics (these ideas are discussed further later). Regardless of the socioeconomic status of a neighborhood, higher rates of owner-occupancy may encourage neighborhood upgrading due to the fact that most owners take better care of their dwellings than absentee landlords.

The objective of the logistic regression was to identify those characteristics of a neighborhood that would predict whether or not it would gentrify; thus, only variables describing characteristics of neighborhoods in 1990 were included in the models. Several regression models were run due to collinearity between variables

and to possibly further expose relationships between variables in determining whether or not a neighborhood gentrified.

To a large extent, the models indicated that such variables as the proportion of younger residents and average household size do not predict where gentrification will occur. Very few of the variables were statistically significant (see Tables 4-8). Surprisingly, not even such variables as median household income and median home value were significant in the models. Only two variables, percent of housing units constructed before 1940 and the dummy variable for whether or not a neighborhood was adjacent to a gentrifying area, were significant at the .05 level in any regression model. These variables both had positive partial slopes, meaning they were positively associated with a neighborhood's likelihood of gentrifying. Furthermore, the likelihood ratio, which tests the null hypothesis that the model has some predictive power, was not significant at the .05 level for any of the regression models. Regardless of this, the significance of the two variables is an interesting result. Both variables are significant in all models they are included in.

The first regression model (see Table 4) had no significant variables. This combination of demographic variables may support the idea that the characteristics of the initial population in a gentrifying neighborhood are irrelevant. Thus, gentrifiers are likely attracted not to what the housing and demographic characteristics of the neighborhood are, but what they believe those characteristics will become. Besides indicating that gentrification is difficult to predict, this may suggest that in-movers to most gentrifying neighborhoods will not embrace diversity in their neighborhood, but will encourage displacement of original residents by those with higher incomes.

Table 4: Demographic Predictors of Gentrification

Variable	Estimate	Odds ratio	Chi-Square
Median household income	-0.00003	1.000	0.9343
% age 22 to 34 1990	-0.0285	0.972	0.5400
% households with children	0.00367	1.004	0.0228
Average household size	0.0112	1.011	0.0196

* significant at p < .05
Likelihood Ratio: Chi-square = 1.8324; Pr> ChiSq = 0.7665

Table 5: Housing Characteristics as Gentrification Predictors

Variable	Estimate	Odds ratio	Chi-Square
% built pre-1940	0.0409	1.042	6.1707*
% 4 or fewer units 1990	0.000544	1.001	0.0029
Median value 1990	5.867E-6	1.000	0.1173
% 65 and over 1990	-0.0168	0.983	0.2022

* significant at p < .05
Likelihood Ratio: Chi-Square = 7.3828; Pr > ChiSq = 0.1170

Table 6: Socioeconomic and Geographic Predictors

Variable	Estimate	Odds ratio	Chi-Square
Adjacent to gentrified area	1.2343	3.436	6.0786*
% commuting less than 15 min	0.0259	1.026	1.7448
Family/household income disparity	-4.78E-7	1.000	0.0001
Median household income	-0.00002	1.000	0.4684

* significant at p < .05
Likelihood Ratio: Chi-Square = 9.1808; Pr > ChiSq = 0.0567

Table 7: Interaction of Race and Socioeconomic Factors

Variable	Estimate	Odds ratio	Chi-Square
% built pre-1940	0.0409	1.042	5.9132*
% African-American 1990	-0.00382	0.996	0.2150
Average household size	-0.0221	0.978	0.0701
Family/household income disparity	-3.22E-6	1.000	0.0025

* significant at p < .05
Likelihood Ratio: Chi-Square = 7.5387; Pr > ChiSq = 0.1100

Table 8: Household Size, Age and Type as Predictors

Variable	Estimate	Odds ratio	Chi-Square
Median household income	-0.00002	1.000	0.4572
% age 22 to 34 1990	-0.0281	0.972	0.4540
Households with children	0.0114	1.011	0.1985
Average household size	-0.0109	0.989	0.0169
Adjacent to gentrified area	1.2091	3.350	5.9112*

* significant at p < .05
Likelihood Ratio: Chi-Square = 7.9101; Pr > ChiSq = 0.1613

Regression Model 2 (see Table 5) has one significant variable, percentage of housing units built before 1940. This is likely due to older housing lending itself well to housing renovation in some cases, and to such housing being dilapidated enough to encourage clearance and redevelopment in others.

Regression Model 3 (see Table 6) has one significant variable: the dummy variable for whether or not a neighborhood is adjacent to a gentrifying neighborhood. This suggests the importance of location in whether or not a neighborhood will gentrify. Adjacent neighborhoods will be in close proximity to the same amenities and employment centers. In addition, they may have similar housing stocks. This also may indicate the tendency of gentrifying neighborhoods to cluster, possibly in part a result of the scale at which large corporations pursue redevelopment. Again, the insignificance of most of the variables suggests that a certain type of resident does not characterize neighborhoods at risk for gentrification.

Percent of housing units built before 1940 is also significant in Regression Model 4 (see Table 7). Its significance and positive relationship with gentrification in both models it is included in confirms the importance of an older housing stock. The insignificance of the percent African-American variable, coupled with the significant T-tests of the same variable for 2000 and the change in percent African-American from 1990-2000 suggests a complex relationship between race and gentrification in Atlanta. It is important to note, however, that the negative coefficient for percent African-American in this model neither contradicts nor confirms the pattern suggested by the results of the T-tests.

The final regression model (see Table 8) also shows the dummy variable for adjacency to a gentrified area to be the only significant variable. The significance of this variable confirms hypotheses discussed earlier that the process can diffuse outward from maturing gentrified neighborhoods (e.g. Kerstein 1990). Due to the nature of property markets, increasing property values in such maturing gentrified areas may increase values in proximate areas as well, encouraging such adjacent areas to gentrify (Hackworth 2002). The idea of such proximity effects in gentrification in Atlanta is discussed further later.

Chapter 5

DISCUSSION

The ineffectiveness of the logistic regression models in predicting

gentrification is likely due to a couple of factors. The use of census data for this

study may have confounded identification of the process and may have contributed to

the diverse set of conditions that was exhibited across gentrifying neighborhoods in

this study. Census data could only describe the state of each neighborhood in 1990

and 2000, regardless of when the changes taking place in such neighborhoods started

or ended. Thus, gentrification in some areas may have straddled the time period

defined by census data, making it more difficult to evaluate or even identify. The

gentrification process could have straddled census geographic boundaries as well.

One issue that is at the heart of the gentrification process as it has played out

in recent years also may have been a cause for the results of the regression.

Increasingly gentrification, as stated in the literature and seen through site inspection

of Atlanta neighborhoods in the study, has come to mean many different things and

take many different shapes in inner cities. Thus, a diverse set of conditions

characterizes the gentrifying neighborhoods in this study. Some still have relatively

low household incomes, such as Tract 43, Block Group 1, which in 2000 had a

median household income of just $11,250. Others have relatively high incomes, such

as Tract 218.09, Block Group 3, which in 2000 had a median household income of

$69,393. Family households in some are much more affluent than nonfamily

households, while in others the opposite is true. Family households in Tract 17,

Block Group 4 had a median income $16,504 higher than nonfamily households in

2000, while in Tract 66.01, Block Group 5, nonfamily households actually averaged

$9,913 more than families. Average household sizes ranged from 1.56 to 3.17 in

2000. Percentages of residents over the age of 65 ranged from 1% to 19% in 2000.

The range of values for percentage of units owner-occupied varied from 7% to 95%

in 2000. These strikingly broad differences are widespread for the beginning of the

study period as well. Median household incomes in 1989 range from $5,000 to

$32,808 in areas that later underwent gentrification. Housing stocks in these areas

vary widely, as in 1990 percentage of single-family units ranged from 1% to 95%.

The percentage of residents African-American in 1990 ranged from 2% to 100%.

Many of these neighborhoods may actually be following the same trajectory in

gentrifying. Thus, even areas in which the process will likely result in the same

demographic and housing makeup may be seeing different changes during this time

period for a variety of reasons.

Furthermore, despite widespread references in the literature to the "typical

gentrifier," (e.g. Nelson 1988, Kerstein 1990) it is doubtful that such an individual

actually exists. Gentrifiers may have little in common with each other beyond the

fact that they tend to be more educated and have higher incomes, and especially with

regard to income, the extent to which even this is true varies. Gentrification theories

such as stage models (see Clark 1985) and a "diversity of gentrification" (Van

Criekingen and Decroly 2003), which describes different processes of neighborhood

change, identify sets of in-movers with different characteristics. Often these sets of

in-movers appear in the same neighborhood at different times (as in the case of stage

models), and, as seen with this research to some extent, in different neighborhoods at

the same time. According to the models described by Dangschat (1991), characteristics of initial in-movers as well as subsequent ones would depend partly on initial characteristics of the neighborhood. In light of this, as discussed before, the methodology used here for selecting gentrifying neighborhoods may not have defined gentrification narrowly enough to allow accurate prediction of where it would occur.

Thus, some neighborhoods in inner city Atlanta may be best characterized as in the early stages of gentrification, with the recent appearance of "pioneers." Other areas may be experiencing later "waves" of gentrification, with such pioneers and possibly longtime elderly residents being pushed out by even more affluent gentrifiers, who often bring with them a different set of values altogether. Still other neighborhoods may have increasingly been subject to a "spillover effect" from elite inner-city areas or those in the advanced stages of the gentrification process (Hackworth & Smith 2001, Wyly & Hammel 1998). Since the recession of the early 1990s, actual ground rent of centrally located (but ungentrified) parcels has remained stable, while the potential rent of these parcels has continued to increase, due to the "surrounding core of reinvestment" raising their economic potential. This is leading to "in-fill of ungentrified spaces closer to the core" (Hackworth 2007). Such a phenomenon may give rise to faster demographic change related to later-wave gentrification that may give the appearance of a neighborhood "skipping stages." These factors motivated an examination of gentrification in Atlanta on a smaller scale.

A corollary to this "in-fill" is the change in median rent compared with the change in median value in inner-city neighborhoods.

41

Figure 2 shows a strong CBD proximity effect for the highest increases in median rent. The map of median value change (Figure 3) does not exhibit this pattern to nearly the same extent. Site inspection of these areas closest to the CBD revealed much redevelopment and a high percentage of relatively new, multifamily dwellings. These areas tended to show relatively drastic changes in median income and educational attainment levels, compared with areas more distant from the CBD, the latter often being dominated by single-family homes. A review of projects involving the Atlanta Development Authority revealed that several large residential projects have been constructed in recent years in or near downtown Atlanta (Atlanta Development Authority). This organization, which is associated with the city of Atlanta and headed by its mayor, has undertaken many initiatives, such as tax allocation districts and low-interest loans, to encourage development in the inner city. These tools attract large developers that will build projects of a sufficient scale to take advantage of such incentives. Thus, these initiatives are a key cause of the extensive redevelopment that has taken place in and around downtown Atlanta.

Furthermore, the most drastic changes in number of housing units (both positive and negative) in Atlanta's inner city occurred mostly in the block groups adjacent to the CBD. For example, Tract 35, Block Group 1 and Tract 32, Block Group 1 saw an increase of 486 and 243 housing units, respectively, while Tract 43, Block Group 1 lost 337 units. Large increases are due to large residential projects undertaken by large corporations, while large decreases are likely a result of land assembly and clearance in preparation for large-scale redevelopment.
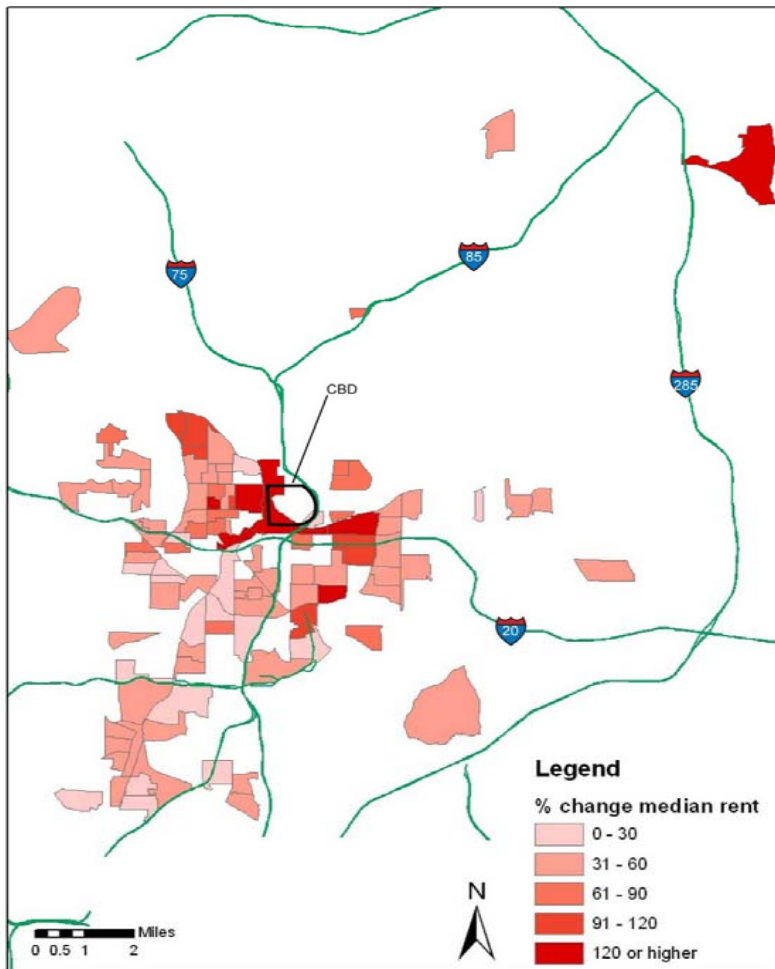
Figure 2: Median rent change 1990-2000
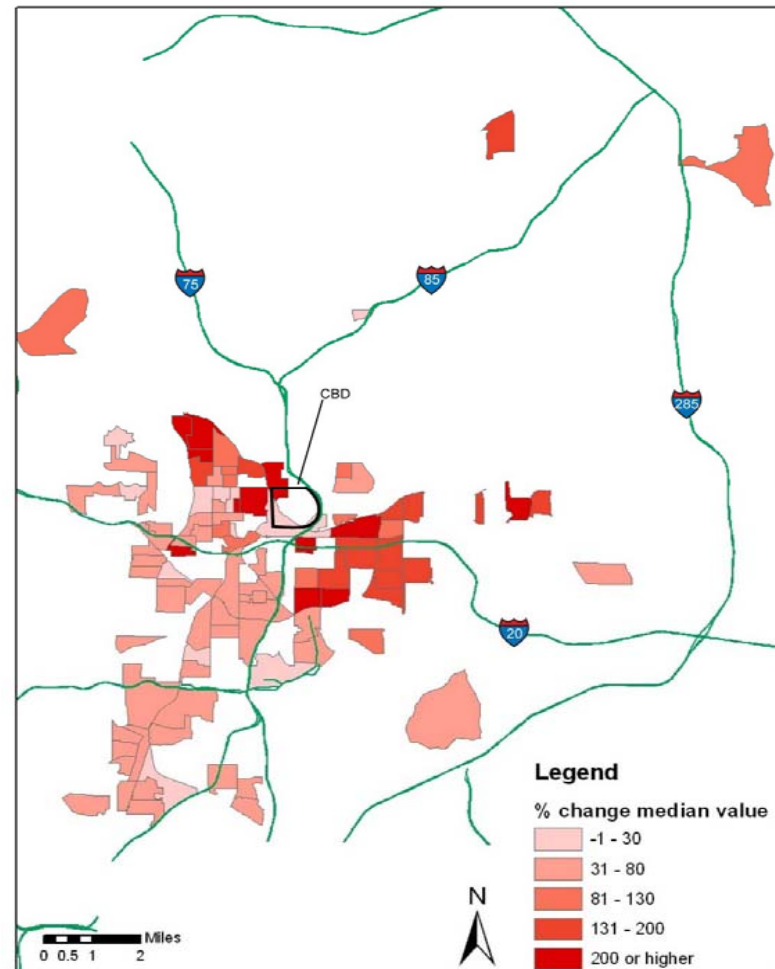Source: U.S. Census Bureau, 2000.

Figure 3: Median value change 1990-2000
Source: U.S. Census Bureau, 2000.

Increased participation of large development companies in gentrification, partly due to the efforts of the public sector, is obviously responsible for redevelopment on such a large scale, and has the capital necessary to overcome barriers to development in areas with high potential ground rents. Such corporate investment plays a dominant role in the recent infill of inner-city spaces near the CBD as well as already gentrifying areas.

Diffusion of Gentrification

Proximity effects in gentrification, which are related to "spillover effects" and interdependence of gentrifying areas as discussed earlier, seem to be relevant to the process as it occurs in Atlanta's inner city. One relatively large cluster of gentrifying areas east of downtown Atlanta stands out. This includes such neighborhoods as East Atlanta, Grant Park, and Cabbagetown. These areas may be the beneficiaries of the "infill of ungentrified spaces" mentioned earlier. Despite being below average in terms of income and educational attainment, median value of owner-occupied units in 1990 in these areas was already relatively high. Heightened housing market activity in these areas suggests possibly some small-scale or early-stage gentrification at that point in time (see Figure 3). These neighborhoods are also very similar in terms of housing stock, and this coupled with their shared location on the east side of the city lends support to the interdependence hypothesis for gentrifying neighborhoods. This cluster of neighborhoods is adjacent to gentrified areas such as Inman Park and the commercial area of Little Five Points, which historically has been dominated by

independent businesses but has begun to serve a broader clientele in recent years, embracing a "rich mix of art, theater and commerce" (L5p.com).

Furthermore, some neighborhoods exhibit gentrification to a greater extent than others. Keeping in mind that at the census block group level there are aggregation problems with the data (in that the process may straddle block group boundaries), a comparison of Grant Park (Tract 53, Block Group 4) and Tract 55.01, Block Group 1 illustrates this phenomenon.

These two block groups, which are adjacent to each other (see Figure 4), are both gentrifying, but the characteristics of the former indicate that gentrification has progressed further there. The median and upper quartile of home values in Grant Park are $187,300 and $251,700 respectively, while immediately west of it, those values are much lower ($66,000 and $77,300 respectively). Furthermore, Grant Park had a much higher median household income in 1989 ($24,060) than the area to its west ($10,259) (see Table 9). These factors likely indicate that gentrification west of Grant Park only began to take place well after it begun in Grant Park itself. Changes in Tract 55.01, upon further examination, appear to be directly related to gentrification in Grant Park.

The changes taking place in Grant Park as a whole may have the most significance both in terms of informing the literature and to the changing face of Atlanta's inner city. Over previous decades this part of the city has suffered from disinvestment due to white flight (Kruse 2005), but it still lay in close proximity to elite inner-city areas as well as at least one neighborhood that has already gentrified.
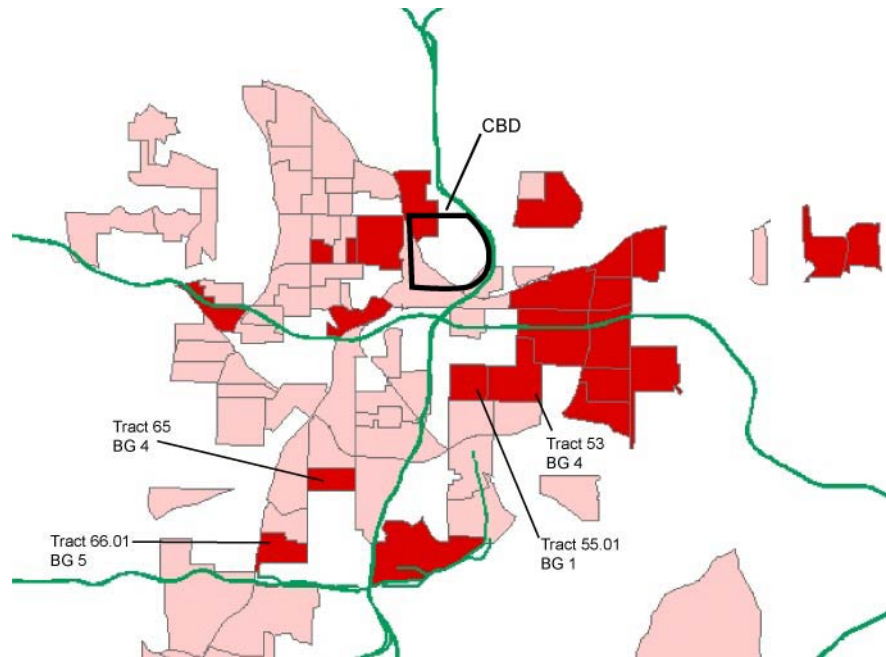
Figure 4: Selected Block Groups in Atlanta's inner city
Source: U.S. Census Bureau, 2000.

Table 9: Comparison of Tract 53, BG 4 and Tract 55.01, BG 1

	Tract 53, BG 4	Tract 55.01, BG 1
Median household income, 1989	$24,060	$10,259
Median household income, 1999	$41,944	$24,313
% professional, 2000	46.0	16.9
Median value, 1990	$74,769	$32,397
Median value, 2000	$187,300	$66,000
Upper value quartile, 1990	$104,514	$41,002
Upper value quartile, 2000	$251,700	$77,300
% owner occupied, 2000	75	44
% single family, 2000	75.1	63.1
% 4 units or fewer, 2000	92.9	84.0

Source: U.S. Census Bureau, 2000.

Thus, closer inspection of it indicates that it seems to confirm earlier

hypotheses regarding the diffusion of gentrification. Also, the scale of the changes

taking place, both geographically and in terms of number of residents affected (it had

a combined popualation of 12,627 in 2000), indicate its importance to the shape of the

city as a whole.

Ethnicity and Gentrification in Atlanta

The significant results of the T-tests for change in percent African-American

and nonwhite raise interesting questions regarding the racial makeup of inner-city

neighborhoods in Atlanta. Gentrifying neighborhoods averaged a drop in percentage

African-American residents of 4.32%, while in all other neighborhoods percentage

African-American increased by an average of 4.07%, with similar results for change

in percent nonwhite. T-tests also showed that gentrifying neighborhoods had a

significantly lower percentage of African-Americans than neighborhoods that did not

gentrify.

Minorities still comprise the majority of residents in the gentrifying

neighborhoods in Atlanta (areas average 67% African-American and 72% nonwhite),

and still exhibit a significant presence in them. However, these statistics indicate that

the proportion of whites is increasing in gentrifying areas, and it is not known

whether this will be a long-term trend that will result in overwhelmingly white

neighborhoods. The current mix of races represents a departure from most suburban

areas, which are usually dominated by one race and income level.   However, much of

the literature on gentrification indicates that while often initial gentrifiers are drawn to

racially diverse neighborhoods, the further it progresses in a neighborhood, the more

47

affluent and risk-averse in-movers will be (Dangschat 1991). Furthermore, recent

discussion by such researchers as Lees (2000) of "ultra-gentrification" may be an

indication that many areas eventually will become high-income havens. There are

also indications of the existence of neighborhood change that does not result in a

high-income, overwhelmingly white resident population (Van Criekingen and

Decroly 2003; see Chapter 2). Such results are possible in some Atlanta

neighborhoods, although it is difficult to determine whether or not their current state

actually represents a long-term set of conditions. The observed trends in Atlanta were

not pronounced enough to contradict widely held hypotheses that gentrifying inner-

city neighborhoods will likely become mostly white.

The Geography of Gentrification and Increased Homeownership

In addition, it seems unlikely that the cluster of gentrifying neighborhoods in

east Atlanta conforms to "marginal gentrification" models of neighborhood change.

This area of the city has a certain amount of inertia that both attracts and is fed by

corporate capital, which will largely orchestrate the infill of these areas and

encourage the spread of gentrification outward from them. Increasing land values in

centrally located but ungentrified areas will increase pressures on them to gentrify,

and proximity to areas like east Atlanta will likely play a dominant role in which of

these areas gentrify next.

Smaller and more isolated neighborhoods identified as gentrifying likely benefit from

special sets of circumstances or some form of direct government involvement. In

recent years, housing finance has been shown to actually begin to favor the inner city

and core and fringe gentrifying areas in particular (Wyly & Hammel 1999). For this reason, new opportunities to purchase homes have opened up. Atlanta is no exception in that homeownership rates have increased throughout the study area for this research (see Figure 5). This is a result of households (e.g. young upwardly mobile individuals or small families) who otherwise would have rented homes or apartments becoming homeowners. Studies have shown evidence of lower-income but upwardly mobile households purchasing homes based on expected income (Boehm 1993), and if this occurred in such areas, it would result in higher median incomes at the end of the study.

This phenomenon may have helped drive change in two block groups in south Atlanta identified as gentrifying, Tract 65, Block Group 4 and Tract 66.01, Block Group 5 (see Figure 4). These areas initially had and still have relatively low home values compared with much of Atlanta's inner city, but they appear to have remained relatively stable throughout time. They consist of a largely homogeneous older single-family housing stock, with 82.7% and 76.5% single family homes, respectively, and no units in structures with more than four units. These factors likely helped attract some "gentrifiers" to these neighborhoods.

These areas do not lie near elite or already gentrified areas. However, most neighborhoods in the metropolitan area with similar housing stocks are gentrifying or have remained stable middle to upper-income areas.
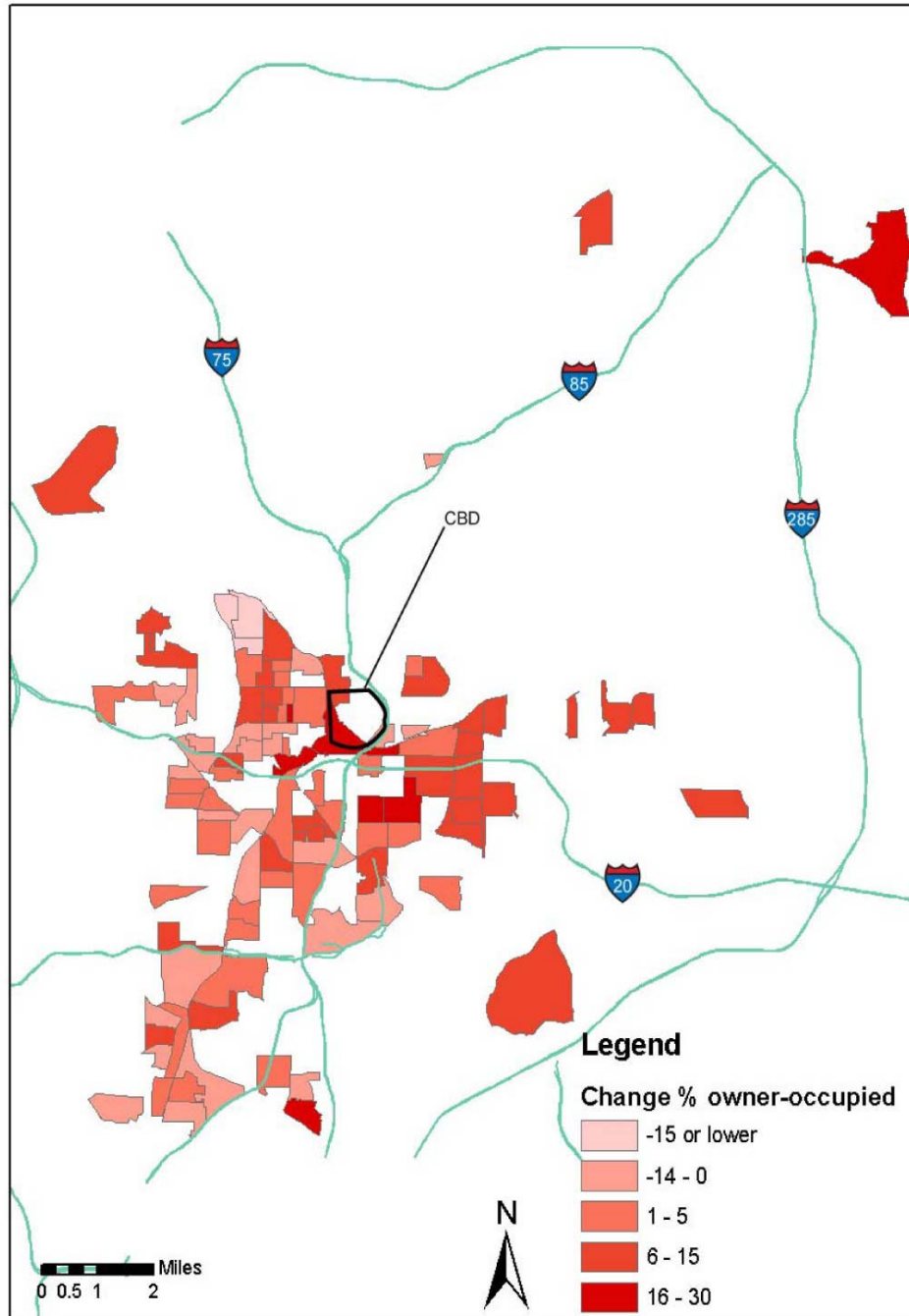
Figure 5: Change in percent owner-occupied 1990-2000
Source: U.S. Census Bureau

Due to the continued spread of gentrification, such areas may contain a substantial proportion of the city's remaining gentrifiable (i.e. good candidate for renovation) housing stock, and this may have encouraged reinvestment. The significance of the T-test for percentage of units built before 1940 would support this theory.

The nature of long-term change in these neighborhoods in particular, however, remains in question. Block by block, these neighborhoods do not exhibit a lot of disinvestment. However, they lie within a relatively low-income section of the city, which may make "ultra-gentrification" or involvement of large development companies less likely. These neighborhoods may be hallmarks of mortgage capital's reappearance in inner-city neighborhoods or increased government incentives for inner-city investment. However, there is little to indicate they could not also represent the beginnings of another large cluster of gentrifying areas.

Chapter 6

CONCLUSIONS

Gentrification in Atlanta in the 1990s mostly followed a pattern of diffusion outward from maturing gentrified areas, as gentrification continued in these maturing gentrified areas. Thus, a distinct geography of gentrification is suggested by the observations of this research, in which most gentrification will occur in relatively large clusters. In Atlanta, areas on the edge of these clusters likely contain a mix of young, relatively high-income professionals and working-class residents. . Remaining pockets of gentrification, which are smaller or more geographically isolated, exhibit varying sets of circumstances. Changes in these neighborhoods may be a result of the continued spread of gentrification in inner cities or of government involvement in urban revitalization, as mentioned in the previous chapter.

Generally, neighborhoods experiencing gentrification during the study period either had experienced some gentrification prior to 1990 or have done so because of the diffusion of the process outward from already gentrified areas. Evidence of large residential projects undertaken by development companies is widespread throughout gentrifying neighborhoods in Atlanta, and while this will come as no surprise to those familiar with gentrification, a couple of broad patterns regarding such corporate involvement are apparent. In Atlanta, it has occurred particularly in those areas closest to large employment centers that have seen the most disinvestment (particularly the CBD), and in maturing gentrified areas.

Finally, very few neighborhood characteristics, and no socioeconomic ones, were shown to be able to predict with any accuracy whether a neighborhood would

gentrify. The study did not produce any new results regarding the role of ethnic

make-up of neighborhoods in gentrification. Gentrifying neighborhoods, on average,

showed an increase in percent white for the study period, albeit a relatively small one.

In many of them, African-Americans remain in the majority, but the results of this

research do not contradict the idea that these neighborhoods will become whiter as

they continue to gentrify. The only two predictors identified as statistically

significant had to do with relative location and housing stock. These are certainly

significant findings, especially given the heterogeneity among the neighborhoods

identified as gentrifying, but they are not new in that these two characteristics have

been identified as significant to the gentrification process in previous research on the

subject.

This research has exposed not only the difficulty of predicting where

gentrification will occur, but also the true nature and outcome of the process where it

does occur. Descriptions of a "back to the city" movement in the literature are

tempered by cautions that gentrification probably does not represent "a genuine,

progressive expansion of opportunities to residents of working-class urban

neighborhoods" (Wyly & Hammel 2001). Rather, such theories indicate that

gentrifiers will "come to support the wide array of public and private strategies used

to replicate the comforts of a controlled suburban life in the…urban frontier" (Wyly

& Hammel 2001), and young, upwardly mobile professionals who populate these

neighborhoods will move away in a few years, perhaps being replaced by a new set of

young professionals. Furthermore, "fringe" gentrifying areas seem to be populated

by fewer highly educated professionals and by more working-class people who spend higher percentages of their incomes on housing.

Prospects for the future of Atlanta's inner city remain unclear. Overall, it does appear that many neighborhoods studied in this research are poised to continue to attract progressively higher-income residents. Continuing inner-city reinvestment has been prevalent throughout the U.S. in recent years, and this research confirms that Atlanta is no different. Especially considering that some currently gentrifying areas in Atlanta had gentrified to some extent before 1990, and that the same has occurred in other U.S. cities (Lees 2000), reinvestment seems likely to continue. However, at what pace, in what areas, and up to what point reinvestment will occur remains uncertain. The pace of reinvestment will at the same time determine and be determined by the demographic and socioeconomic makeup of these neighborhoods. Future research should likely examine Atlanta's inner city as a whole in the context of current trends in neighborhood change and housing markets as set forth by the literature. While gentrification has proven to be a changing process over time (Hackworth 2002), in the short term changes in neighborhoods are often directly related to housing prices in them, nearby areas, or the metropolitan area as a whole, and also to specific government policies or projects. Thus, such changes are somewhat predictable, and would, therefore, allow for planning on issues related to neighborhood change such as displacement and availability of affordable housing.

The literature would further benefit from research into the role of large development corporations and large capital in the gentrification process. While some basic patterns were apparent in Atlanta, a study focused exclusively on this topic

would be necessary to confirm and elaborate on these patterns. Given their clearly

defined profit motive and their access to capital, the entrance of large corporations

into inner-city housing markets could profoundly change how they work, and thus

they merit further study.

This research confirmed some hypotheses related to gentrification. Even

more, however, it raised key questions regarding inner-city neighborhood change that

the literature has, thus far, been unable to answer. These questions have to do with

the long-term trajectories of gentrifying inner-city neighborhoods. The rapid physical

changes and socioeconomic upgrading in such neighborhoods that have previously

suffered disinvestment contrast starkly with suburban neighborhoods, which tend to

either stabilize or decline in the long term. The inability of the models to predict a

clear set of conditions that would allow for this upgrading highlights the breadth of

changes taking place in Atlanta's inner city. Will inner-city neighborhoods remain in

a constant state of flux? If not, which neighborhoods will stabilize like some of their

suburban counterparts, and what conditions will coincide with this stabilization?

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APPENDIX

Principal Components Analysis

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	4.78135375	2.55460127	0.2988	0.2988
2	2.22675248	0.23868834	0.1392	0.4380
3	1.98806414	0.21396442	0.1243	0.5623
4	1.77409972	0.63593895	0.1109	0.6731
5	1.13816077	0.35628297	0.0711	0.7443
6	0.78187780	0.04521964	0.0489	0.7931
7	0.73665816	0.05504578	0.0460	0.8392
8	0.68161238	0.19202168	0.0426	0.8818
9	0.48959071	0.11930311	0.0306	0.9124
10	0.37028759	0.06218887	0.0231	0.9355
11	0.30809873	0.08936375	0.0193	0.9548
12	0.21873498	0.01774634	0.0137	0.9685
13	0.20098864	0.03820135	0.0126	0.9810
14	0.16278730	0.05732646	0.0102	0.9912
15	0.10546083	0.06998882	0.0066	0.9978
16	0.03547201		0.0022	1.0000

	Factor 1	Factor 2	Factor 3
_builtpre1940	0.06096	0.10252	0.57496
Median_household_income_in_1989	0.85912	0.05283	-0.09187
_65_and_over_1990	0.06733	0.71108	-0.03325
_vacant_1990	-0.54817	-0.05871	0.58137
pctoneunitdet_1990	0.61013	0.55949	-0.06373
Median_value_1990	0.74772	-0.12066	-0.08892
_black_1990	-0.70576	-0.01834	-0.24908
_22_to_34_1990	0.36130	-0.58397	0.14759
CBDdist	0.71006	0.14168	-0.10669
pct4orfewerunits1990	0.56116	0.56777	-0.01392
Householdswithchildren1990	-0.12088	-0.60004	-0.48961
Avg_household_size_1990	-0.07545	-0.26685	0.63580
pctprofocc_1990	0.60503	-0.13065	0.10236
_less_than_15_min_1990	-0.00372	-0.10445	0.77759
_ownerocc_1990	0.67700	0.50522	-0.21217
Family_hh_income_disparity_1989	-0.03035	0.61597	-0.08594

Variance Explained by Each Factor:

Factor 1: 4.2715306
Factor 2: 2.6276691
Factor 3: 2.0969707

VITA

Jonathan M. Law was born in Shreveport, Louisiana on January 31, 1983. He grew up and graduated from high school in Fort Worth, Texas. He graduated from Auburn University *summa cum laude* in December of 2004 with a B.A. in Geography and a minor in Economics. He has served as a teaching assistant for many of the human geography courses at the University of Tennessee during his time as a graduate student there. He is considering pursuing a Ph.D. in the future, but immediately after graduation from UT he hopes to work in the urban planning field or hold a position conducting research involving issues associated with urban areas.