Poverty Evolution in the Capital of the Sunbelt:
An Investigation of Neighborhood-level Poverty Among Racial and Ethnic
Groups within Houston, Texas; 1990-2000

John Strait and Gang Gong
Sam Houston State University

Poverty in the urban United States exhibited significant changes during the 1990s. The authors examine the changing nature of poverty evident at the neighborhood-level among Whites, African-Americans, Hispanics and Asians in Houston, Texas from 1990 to 2000. All four groups were generally less exposed to poverty residentially in 2000 than was the case in 1990. In addition, far fewer people resided within extremely poor neighborhoods at the conclusion of the decade. Empirical evidence demonstrates that a rigid racial and/or ethnic continuum exists within Houston in terms of poverty concentration. African-Americans were more exposed to poverty residentially than all other groups. Despite the increasing presence of poor Hispanics among the overall poverty population, over time African-Americans also accounted for a much higher proportion of the population residing within extremely poor neighborhoods. *Key words: poverty, race, ethnicity.*

Introduction

Concentrated poverty has been among the most consistent elements evident across the American urban landscape. Still, poverty, like most other urban phenomena, has evolved considerably over time in response to a host of economic, demographic and social processes. Research focused on poverty concentration has revealed two recent trends that significantly impacted the urban U.S. during the 1990s. The first trend involved a nation-wide decrease in the degree to which the urban poor remain concentrated within extremely poor neighborhoods. The second trend impacting urban areas in general, and the nature of urban poverty in particular, relates to the increased racial and/or ethnic diversity exhibited during the decade. Houston, Texas offers a fascinating case study for an investigation of the contemporary nature of urban poverty, primarily because it exhibits the outcomes of these trends. In this regard, Houston functions as a mirror that vividly reflects social and economic processes impacting urban America as a whole. Yet Houston also exhibits unique traits that make it distinct from other urban locales that previously served as case studies for the study of poverty concentration. By focusing on the chang-

ing nature of poverty concentration within Houston, this study sheds light on a phenomenon that is important, yet not fully understood.

This paper investigates changes in the degree to which poor populations were residentially concentrated within Houston during the 1990s. A measure of poverty concentration was utilized to gauge the relative levels of poverty concentration among Whites, African-Americans, Hispanics and Asians.[1] A sub-set of extremely poor neighborhoods are also identified and the degrees to which these four groups inhabit these neighborhoods are noted. The overall purpose of this paper is to address three specific questions; (1) What are the relative levels of poverty concentration experienced by these four groups and how have they changed over time? (2) To what degree do poor members of these groups inhabit extremely poor urban neighborhoods? (3) How has the nature of extremely poor neighborhoods within Houston changed spatially and demographically during the decade?

This paper is organized into five additional sections. The first section provides background to the research, including a review of the recent literature on poverty concentration. The second section provides a more thorough discussion of the relevance of Houston to the analysis of poverty concentration. A third section provides a summary of the data and methodology utilized in this investigation. The fourth section discusses the results of empirical analysis, specifically summarizing the changing nature of overall poverty concentration throughout Houston. The final section provides conclusions based on these results and offers potential avenues for additional research.

Recent Research on Poverty Concentration

Comprehensive nation-wide studies of urban poverty during the 1990s provide evidence that urban areas in the U.S. exhibited a dramatic decline in the number and proportion of people residing within extremely poor neighborhoods (Jargowsky 2003; Pettit and Kingsley 2003). This trend marked a significant turnaround from the 1970-1990 period, during which the population in such neighborhoods increased significantly. By 2000, however, urban populations, including poor minorities, were generally less likely to be concentrated within extremely poor neighborhoods than was the case in earlier decades. The aforementioned studies also demonstrate that the racial and ethnic compositions of extremely poor neighborhoods are in the process of changing. For example, Jargowsky (2003) noted that in 2000, around 37% of the populations inhabiting such neighborhoods were neither non-Hispanic white nor African-American. Despite this trend, the voluminous poverty literature has still been strongly focused on investigating the high levels of poverty concentration exhibited among African-Americans. This bias obviously reflects the fact that members of this racial group have historically been disproportionately poorer

and more socially and spatially isolated than all other groups (Jargowsky 1997; Strait 2001a). This was especially true within "Rust-belt" cities that exhibited significant increases in extreme neighborhood-level poverty during the 1970s and 1980s (Wilson 1987, 1996). A disproportionate focus on African-American poverty in the "Rust-belt" obviously ignores the dynamic impacts that immigration has had on the broader contemporary urban landscape.

The above evidence makes a compelling case for the need to expand the focus of poverty concentration to include the study of a broader range of racial and ethnic groups. More intense analysis of poverty trends within urban environments outside of the former "Rust-belt" is also needed. Some scholars have slowly initiated a focus on the residential experiences of poor Hispanics, a reflection of the recognition that this ethnic group now comprises the largest minority group in the U.S. (Jargowsky 2006; Strait 2002, 2006). However, most studies ignore the residential experiences of other groups, such as poor Asians (for an exception see Strait 2006).

Research focused on specific urban contexts provide a framework for understanding the dynamics of residential poverty concentration. Holloway et al. (1999) and Strait (2001b) focused on poverty concentration among African-Americans and Whites within Columbus, Ohio and Atlanta, Georgia, respectively. Strait (2002, 2006) engaged in additional analysis of poverty concentration within both Miami and Los Angeles. The study of Miami expanded the focus of the research by including analysis of Hispanics, while the study of Los Angeles also included a focus on Asians. The most significant contributions made from these research efforts relates to the recognition that the nature of poverty concentration varies considerably by race, ethnicity and class. For example, these studies document the existence of a striking racial and/or ethnic continuum in regards to poverty concentration. The evidence suggests that African-Americans live in much poorer neighborhoods than do other racial and ethnic groups. Hispanics and Asians were generally found to exhibit intermediate degrees of poverty exposure, whereas Whites were consistently the less exposed to poverty than all other groups (Strait 2006). Despite their contributions, the nature and design of these studies highlight the previously mentioned gaps evident within the literature. More specifically, these various studies either lack the full inclusion of all major racial and ethnic groups (Strait 2001b), focus on urban environments exhibiting significant relative increases in poverty (Strait 2006), or both (Holloway et al. 1999; Strait 2002).

The Relevance of Houston, Texas

A number of reasons make an analysis of Houston extremely relevant to the contemporary study of poverty concentration. First, in terms of both jobs and population, Houston is one of the most rapidly growing urban areas in the

United States (Combs 2005; Gilmore 2004; Bureau of the Census 2005). A number of urban areas within the southern and western regions of the United States exhibited considerable growth during the last few decades, yet few have grown as rapidly as Houston. The Houston Consolidated Metropolitan Statistical Area (CMSA) added close to a million residents during the 1990s alone and by 2000 had emerged as the 10th largest metropolitan area in the country (Bureau of the Census 1990; 2000). Moreover, unlike the central cities of most other large urban areas, the *city* of Houston was also not immune to such rapid population growth. By exhibiting a growth rate of 19.8% and adding over 320,000 people, Houston's central city grew more than many metropolitan areas during the decade (Bureau of the Census 1990; 2000). Thus, the context of Houston varies considerably from that of the core other urban areas, such as Chicago, Detroit or Milwaukee, where increased poverty concentration since 1970 at least partially stems from population loss and middle-class flight (Greene 1991, 1994; Jargowsky 1997).

Another reason that Houston makes an interesting case study is that its economy is both diversified and growing. During recent decades, the metropolitan area exhibited employment increases within a diverse collection of economic sectors, including oil and natural gas production and exploration, petrochemical manufacturing and refining, medicine, international finance, real estate and construction (Gilmore 2004). Houston's economy has in the past demonstrated an affinity for boom-and-bust cycles, largely in response to changes in the relative health of the energy sectors. The employment base of Houston is still strongly tied to energy-related industries. Yet it is the metro's broad-based economic growth, not just its critical role in the world oil market, that has recently led Houston to be studied as an exemplar of the emerging Sunbelt. In fact, the metros' diversified growth is responsible for Houston being referenced as both the "golden buckle" and the "capital" of the Sunbelt (Kaplan 1983; Feagin 1985).

Many studies have focused on poverty concentration within "Rustbelt" cities that have experienced significant impacts of deindustrialization, such as Chicago (Wilson 1987, 1996; Greene 1991, 1994). Strait shifted the geographic focus of poverty concentration by analyzing Sunbelt cities that experienced job growth related to the emergence of the post-industrial service economy, such as Miami, Los Angeles and Atlanta (Strait 2001b; 2002; 2006). In terms of economic restructuring, Houston represents an interesting contrast to the urban conditions explained by the Rustbelt-Sunbelt dichotomy. Houston did indeed benefit more from the transition to a post-industrial economy than did most "Rustbelt" cities, yet during the 1980s it was also hit hard economically by the decline in oil prices and the nation-wide failure of savings and loan companies. Accordingly, a large number of jobs within oil-related industries disappeared from the Houston economy during this time frame. However,

Houston was partially buffered from this form of economic decline in the long term due to steady job growth in variety of other industries, the relatively rapid recovery of the oil prices and the continued addition of lower-wage jobs in construction and other service-related industries (Houston Business Journal 2003). Moreover, like many other Sunbelt cities, the economic trajectory of Houston resulted in substantial growth in the professional service sector. In sum, this research investigates poverty concentration within an urban region that has experienced the complex combination of multiple forms of economic change, ranging from the "boom and bust" of the oil industry, the "Sunbelt" corporate boom, and the rapid growth of lower-wage jobs associated with a "post-industrial" economy (Ritzer 2007).

Houston also makes an interesting case study because it is one of the most ethnically and racially diverse urban areas in the U.S. As a result of immigration, the United States as a whole has recently began to exhibit a rapid increase in the number of truly multiethnic urban areas. Few urban areas, however, have been impacted by immigration as significantly as Houston. By 2000 the metropolitan area's non-Hispanic White population was surpassed in absolute and relative terms by its "minority" population, largely due to the continued influx of migrants from Latin America. Houston also stands out from other urban areas because of its relatively recent, diverse and rapidly growing Asian/ Pacific American population. For example, Houston contains the country's second largest Vietnamese population, and is also home to rapidly emerging South Asian Indian and Chinese communities (Houston Chronicle 2007a). Unlike previous studies that relied upon a two-group model of analysis by emphasizing the dynamics of poverty among African-Americans and Whites, a focus on Houston potentially offers a more accurate glimpse of how poverty concentration relates to a truly diverse American metropolis of the 21st century.

Finally, Houston makes a relevant case study due to the recent growth in poverty evident within the state of Texas. Between 2000 and 2005 the poor population in Texas increased by over 800,000 (U.S. Census Bureau 2005). As a result, by 2005 Texas had the sixth highest poverty rate in the U.S. In addition, over 7.3% of Texans are now classified as *severely* poor, as defined by those individuals living on less than half the income required of the Federal poverty-level. In fact, Texas now has the second highest number of people experiencing this condition, trailing only California (McClatchy Washington Bureau 2007). The region of the state experiencing the most significant increase in poverty includes communities along the Mexican border. Accordingly, the primary driving force for this growth is assumed to be immigration. Houston lies outside of this poverty prone border region. Yet like such border towns, it certainly has experienced an influx of undocumented immigrants, a population more likely to be poor. Houston's explosive economic and demographic growth has resulted in substantial increases in non-poor populations

that undoubtedly mask any absolute increase in poverty the metropolitan area has experienced. Certain evidence, however, suggests that Houston is not immune from these processes driving poverty growth. First, the Houston MSA did indeed exhibit a significant increase in extremely poor neighborhoods during the 1980s, primarily as a combined response to immigration and the aforementioned stagnation of the oil economy (Jargowksy 1997). Second, in a state specifically noted for its unusually high rate of childhood poverty, Houston continues to be a leader. For example, the Houston Independent School District (H.I.S.D), one of the largest school districts in America, now reports that thirty percent of the students now live in poverty (Houston Chronicle 2007b).

Data and Method

Data used in this project were derived from the 1990 and 2000 census tract files for the seven counties that comprise the Houston-Galveston-Brazoria, Texas CMSA as defined in 1990.[2] At times data specific to Harris County is cartographically presented. This county is the core county of the Houston-Sugarland-Baytown CMSA, and in 2000 accounted for over 73% of the metropolitan area's total population and over 80% of the total poverty population (U.S. Census Bureau 2000). For semantic purposes the broader study area will simply be referred to as Houston throughout the remainder of this paper.

In this paper, poverty concentration is conceptualized as reflecting the degree to which different poor populations are residentially exposed to poverty; i.e. residing in neighborhoods inhabited by a relatively large proportion of poor individuals. According to this conceptualization, increased poverty concentration entails an increased residential exposure to poverty. In order to measure poverty concentration, the commonly used *isolation* or *exposure* index was utilized (Abramson, Tobin, and Vanderboot 1995; Holloway et al. 1999; James and Taeuber 1985; Lieberson 1981; Massey 1996; Massey and Eggers 1990; Strait 2001b, 2002; Strait, Gong, and Williams 2007; White 1986). This index reflects the degree to which different population groups are exposed to poverty within their residential environments. The most common formula for the isolation index is the following:

$$xPx^* = \sum_{i=1}^{I} \left(\frac{xi}{X} \right) * \left(\frac{xi}{ti} \right)$$

,

where t_i is the total population of tract i, x_i is the number of group-X members in tract i, and X is the total number of group-X members in the largest metropolitan region in question. The measure is interpreted as representing group-X's proportion of the population in the residential tract of an average group-X member. Thus, the index provides a measure of the potential that an average member of a specific population would have residential contact with

other members of the same population within their neighborhood. For example, the measure could represent the relative poverty composition of the average poor person's residential environment. Used more specifically, this index could demonstrate the proportion of the population residing within the average poor Asian's neighborhood that is also poor and Asian. The related *exposure* index is

$$ xPy^* = \sum_{i=1}^{I} \left(\frac{xi}{X} \right) * \left(\frac{yi}{ti} \right) , $$

where t_i, x_i, and X are the same terms as before, and y_i represents the number of group-Y members in tract i. This index then measures the potential that an average member of group-X will have residential contact with, or *exposure* to, members of group-Y within their neighborhood environment. For instance, this index measure the proportion of the population residing within the neighborhood of the average poor Asian that is both non-poor and Hispanic. In this paper changes in the exposure of poor groups to both poverty and to non-poor populations are reported.[3]

    In this study "extremely poor neighborhoods" area designated and identified using the most commonly used methodology; recognizing census tracts having poverty rates equal to or greater than 40% (Greeene 1991a, 1991b, 1994; Jargowsky 1994, 1996, 1997; Strait 2000, 2001a).[4] For the purpose of this paper, a particular racial or ethnic group highly concentrated in such neighborhoods is assumed to be experiencing high levels of extreme poverty. Two indicators previously conceptualized by Jargowsky (1997) that utilize this designation are calculated; the *neighborhood poverty rate* (NPR) and the *concentrated poverty rate* (CPR). The neighborhood poverty rate refers to the proportion of a total population residing in extremely poor neighborhoods defined by the 40% poverty criterion. The concentrated poverty rate refers to the proportion of a total *poverty* population residing in such neighborhoods.[5] These measures were calculated for the overall population of Houston, as well as for each specific racial or ethnic group. In order to more thoroughly understand racial and ethnic dimensions of extreme poverty, the identified neighborhoods were also classified them according to their racial and/or ethnic composition. Following previous protocol, any extremely poor neighborhood in which a single racial or ethnic group accounted for more than two-thirds of the overall neighborhood population was assumed to be dominated by that particular group (Jargowsky 1997). Any neighborhood that was both predominantly black and that met the 40% poverty threshold is referred to here as a "ghetto". The term "barrio" was used to refer to extremely poor neighborhoods that were predominantly Hispanic. The remaining extremely poor neighborhoods, where no single racial or ethnic group predominated, are referred to as "mixed slums."[6]

Results of Analysis

Racial and Ethnic Change at the Neighborhood Level

    Table 1a illustrates the increased diversity evident in Houston during the 1990s. The metropolitan area grew by over 25% during the decade, with the majority of this growth being accounted for by an increase in minorities, many of them immigrants. Both the Hispanic and Asian populations grew by over 72% while the combined white and African-American population increased by only 6.5%. Figures 1a and 1b demonstrate the distribution of neighborhoods by racial or ethnic composition within the central portion of Houston for both 1990 and 2000 respectively. Neighborhoods classified as "other" on these maps refer to neighborhoods that are racially and ethnically mixed.[7] These maps vividly document the neighborhood transition that resulted from the rapid influx of the Hispanics that occurred during the decade. Neighborhoods that were predominantly Hispanic in 1990 were generally confined to the central and south-central portions of Harris County (Figure 1a). The northern and western sections of the county were predominantly white at this time. By 2000 the impacts of Hispanic population growth are noticeable in two ways (Figure 1b). First, the Hispanic dominated area expanded significantly during the decade, especially in the northerly and southeasterly direction. Second, several neighborhoods in the northern and western portions of Harris County that were dominated by Whites in 1990 were classified as "other" in 2000. A number of neighborhoods in the county formerly dominated by African-Americans were also reclassified as "other" in 2000. In both cases, this reclassification was most likely due to the growth of Hispanics in such neighborhoods.

Changes in Poverty Concentration and Exposure

    Poverty became slightly less prevalent in relative terms, but the metro's poor population did increase by over 80,000 during the decade (Table 1b). The most significant change evident in Table 1b relates to the significant increase in poor Hispanics. As was true with the other groups considered here, a smaller proportion of Hispanic Houstonians were poor in 2000 than was the case in 1990. However, the poor Hispanic population did increase from 195,931 to 292,191 during the decade and by 2000 over 46% of the poor population in Houston were members of this ethnic group.

    Table 2 lists the isolation/exposure indices exhibited among the area's poor for both 1990 and 2000. Data in this table show changes in the level of isolation exhibited by poor groups and the degree to which they are exposed to other poor groups, defined by race and ethnicity. Table 3 shows changes in the exposure of the poor to non-poor groups. All poor groups were slightly less residentially exposed to poverty in 2000 than in 1990, an expected outcome given the relative increase in the non-poor during the decade. One major

Table 1a. Population Change Among Racial and Ethnic Groups in the Houston Metropolitan Statistical Area, 1990 - 2000

	1990	2000	Change	% Change
Total MSA population	3,655,311	4,568,379	913,608	25
White population	2,120,143 (58.0 %)	2,185,354 (47.8 %)	65,211	3.1
African-American population	644,965 (17.6 %)	758,436 (16.6 %)	113,471	17.6
Hispanic population	750,132 (20.5%)	1,330,206 (29.1 %)	580,074	77.3
Asian population	129,214 (3.5 %)	222,917 (4.8 %)	93,703	72.5

Source: U.S. Census Bureau (1990 and 2000)

Table 1b. Change in Poor Population by Race and Ethnicity in the
Houston Metropolitan Statistical Area, 1990 - 2000

	1990	2000	Change	% Change
Total poor population	544,061	624,197	80,136	14.7
White poor	146,366	130,591	-15,775	-10.8
% of total poverty	26.9	20.9		
African-American poor	182,546	166,828	-15,718	-8.6
% of total poverty	33.6	26.7		
Hispanic poor	195,931	292,191	96,260	49.1
% of total poverty	36	46.8		
Asian poor	17,436	25,353	7,919	45.4
% of total poverty	3.2	4.1		

Source: U.S. Census Bureau (1990 and 2000)

conclusion drawn from these data is that the residential experience of the poor varied significantly by race and ethnicity. The racial/ethnic continuum that exists within Houston in terms of poverty exposure is similar to that found in other metropolitan areas (Strait 2002, 2006). The African-American poor were more spatially isolated and more exposed to poverty than all other groups considered. In 2000 the average poor African-American resided within a neighborhood where 27.3% of the population was poor and 17.4% of the population was both poor and African-American. In comparison, by that time the average poor white individual resided in a neighborhood where only 13.5% of the population was poor. Poor Hispanics and poor Asians exhibited intermediate levels of poverty exposure, with poor Asians exhibiting levels that were only slightly higher than that of whites.

Both Tables 2 and 3 also vividly illustrate the neighborhood-level impact of Houston's changing demographics. By the conclusion of the decade all poor groups were less likely to share neighborhoods with Whites, yet all had become more residentially exposed to Hispanics. The White and African-American poor, while becoming less exposed to poverty overall, did increasingly share neighborhoods with poor Hispanics (Table 2). For example, in 1990 the average poor African-American inhabited a neighborhood where 5.5% of the population was poor and Hispanic (Table 2). By 2000 this percentage had increased to 7.6%. More specifically, all poor groups also became
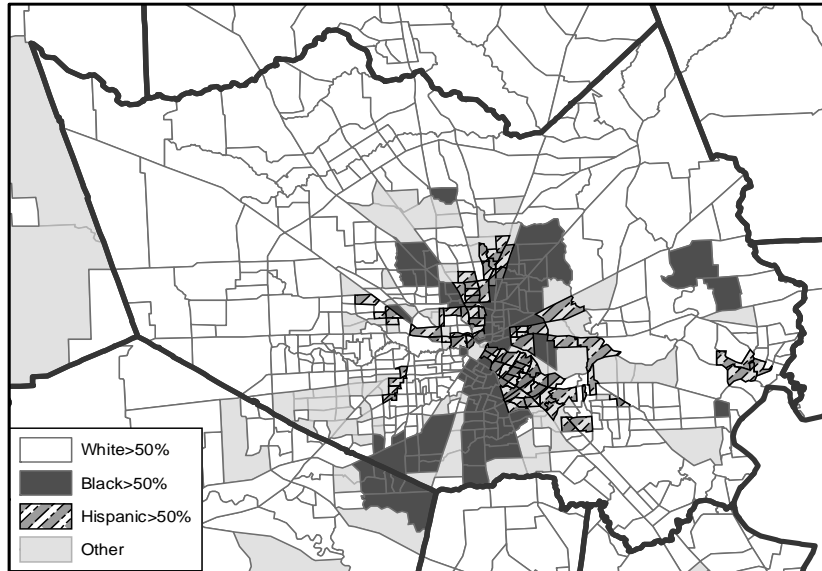
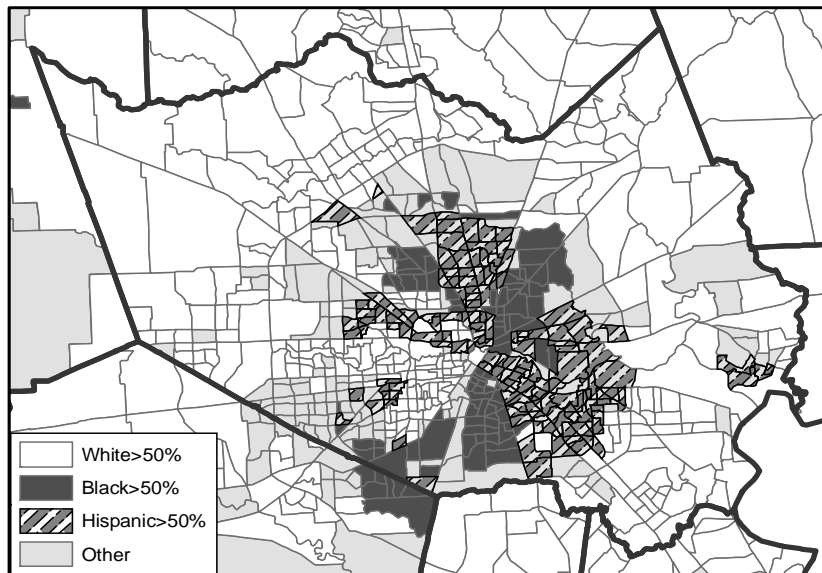**Figure 1a.** Racially/ethnically dominated neighborhoods, 1990.

Figure 1b. Racially/ethnically dominated neighborhoods, 2000.

significantly more exposed to non-poor Hispanics during the decade (Table 3). This suggests that Houston's rapid growth in Hispanics was responsible for an increased ethnic integration at the neighborhood-level that crossed class lines.

One interesting finding evident in Tables 2 and 3 relates to the decreased isolation of the Hispanic poor. On average, in 2000 poor Hispanics resided within neighborhoods containing a lower proportion of poor co-ethnics than was the case in 1990 (15.1% compared to 15.7%). This occurred despite the fact that this specific poor population grew significantly in absolute and relative terms during the 1990s. Members of this poor group did, however, increasingly reside in neighborhoods containing a higher proportion of *non-poor* co-ethnics. Together these findings suggest that poor Hispanics had redistributed themselves during the decade into less poor neighborhoods across the Houston area. Maps showing neighborhood-level proportions of the poverty population accounted for by Hispanics provide a clear picture of the broad impacts of this process (Figures 2a and 2b). By 2000 this population was notably present throughout a large portion of the core area of Houston.

Figures 3a and 3b show that the distribution of poor Asians had also became more noticeable on Houston's landscape. It is notable that poor members of this minority group are much less concentrated within the central portions of the study area than other poor minorities. Rather than being highly present within the central part of Harris County, which roughly corresponds to the central city, poor Asians are more highly clustered in a number of suburban neighborhoods (Figures 3a and 3b). Thus, this poor group may very well be residing within Houston's version of what have been referred to as "ethnoburbs" (Li 1998). Li (1998) has described "ethnoburbs" as newer Asian enclaves that exhibit features of both traditional ethnic enclaves and suburbs. In this regard, it could be assumed that the relatively recent arrival of the Houston's Asian population and the higher educational and income status of this population would naturally result in suburban location. The fact that poor co-ethnics also inhabit such neighborhoods may simply represent the outcome of ethnic "self-selectivity" on the part of the Asian population (Gordon 1964; Boswell and Cruz-Baez 1997).[7]

Table 2. Changes in Residential Isolation and Poverty Exposure Among Poor in the Houston, Texas CMSA, 1990 – 2000

	1990	2000	Change
Poor Whites to:			
Poor Whites	0.067	0.048	-0.019
Poor African-Americans	0.030	0.023	-0.007
Poor Hispanics	0.053	0.059	0.006
Poor Asians	0.004	0.005	0.001
Total Poverty	0.154	0.135	-0.019
Poor African Americans to:			
Poor Whites	0.024	0.018	-0.006
Poor African-Americans	0.225	0.174	-0.051
Poor Hispanics	0.055	0.076	0.022
Poor Asians	0.005	0.005	0.000
Total Poverty	0.309	0.273	-0.036
Poor Hispanics to:			
Poor Whites	0.040	0.026	-0.014
Poor African-Americans	0.052	0.041	-0.011
Poor Hispanics	0.157	0.151	-0.006
Poor Asians	0.006	0.006	0.000
Total Poverty	0.255	0.224	-0.031
Poor Asians to:			
Poor Whites	0.033	0.025	-0.008
Poor African-Americans	0.055	0.035	-0.020
Poor Hispanics	0.068	0.065	-0.003
Poor Asians	0.024	0.025	0.001
Total Poverty	0.180	0.150	-0.030

Source: U.S. Census Bureau (1990 and 2000)

Table 3. Changes in Exposure of Poor to Non-Poor Groups in the Houston, Texas CMSA, 1990 – 2000

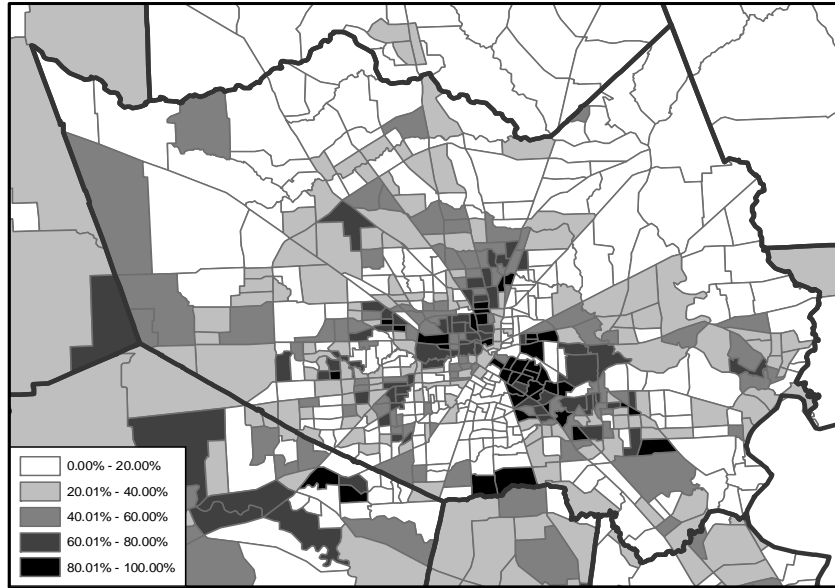|	1990	2000	Change
Poor Whites to:			
Non-Poor Whites	0.591	0.525	-0.066
Non-Poor African-Americans	0.077	0.081	0.004
Non-Poor Hispanics	0.151	0.212	0.061
Non-Poor Asians	0.023	0.032	0.009
Total Non-Poor	0.842	0.850	0.008
Poor African Americans to:			
Non-Poor Whites	0.199	0.156	-0.043
Non-Poor African-Americans	0.361	0.354	-0.007
Non-Poor Hispanics	0.115	0.190	0.075
Non-Poor Asians	0.015	0.025	0.010
Total Non-Poor	0.690	0.725	0.035
Poor Hispanics to:			
Non-Poor Whites	0.323	0.236	-0.087
Non-Poor African-Americans	0.100	0.116	0.016
Non-Poor Hispanics	0.300	0.386	0.086
Non-Poor Asians	0.020	0.029	0.009
Total Non-Poor	0.743	0.767	0.024
Poor Asians to:			
Non-Poor Whites	0.428	0.338	-0.090
Non-Poor African-Americans	0.147	0.235	0.088
Non-Poor Hispanics	0.174	0.152	-0.018
Non-Poor Asians	0.068	0.106	0.038
Total Non-Poor	0.817	0.831	0.014

Source: U.S. Census Bureau (1990 and 2000)

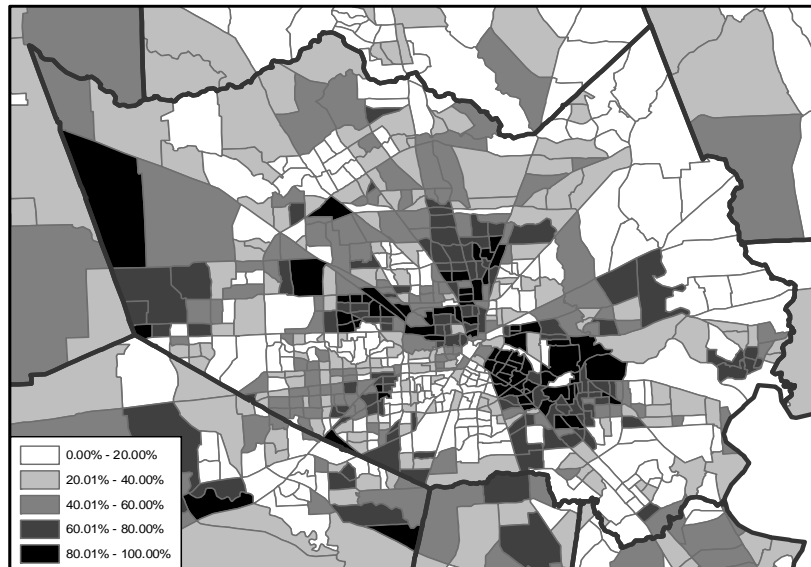**Figure 2a.** Percent of Hispanic population among total poverty population,1990..

Figure 2b: Percent of Hispanic population among total poverty population, 2000.

Changes in Extreme Poverty

Tables 4a and 4b demonstrate changes in Houston's extremely poor neighborhoods. These data indicate that Houston mirrored the nation-wide trends by exhibiting significant decreases in extreme poverty in both relative and absolute terms during the 1990s. By 2000 there were less than half as many extremely poor neighborhoods as existed in 1990 and the population residing within such neighborhoods decreased by over 104%. In 2000 only 1.8% of the total population and 6.2 % of Houston's poor population inhabited such neighborhoods. Both the *neighborhood poverty rate* (NPR) and the *concentrated poverty rate* (CPR) declined significantly for all racial and ethnic groups. The same racial/ethnic continuum existing in Houston in regards to poverty exposure was also evident with extreme poverty. African-Americans were more likely to inhabit such neighborhoods than any other group, both at the beginning and end of the decade. In 2000 7.7% of Houston's African-American population, including 17.4% of this group's poor population, inhabited such neighborhoods. Asians and Hispanics exhibited intermediate levels of extreme poverty, yet members of these groups were only slightly more likely to inhabit extremely poor neighborhoods than whites.

Table 4b provides the changing racial and ethnic composition of Houston's extremely poor neighborhoods. In both 1990 and 2000 the majority of extremely poor neighborhoods were classified as ghettos. The number of barrios evident in 1990 was not insignificant, yet by 2000 only a single extremely poor neighborhood fit this classification. Irrespective of the significant relative increase in poor Hispanics exhibited during the decade, by 2000 the Hispanic share of the population residing within extremely poor neighborhoods had decreased to 10%. Meanwhile, the African-American proportion of this population had increased from 58% to 71.2%. Over the same time period, the proportion of this population that was both poor *and* African-American had increased from 30% to 35.3%. In short, these data suggest that extreme poverty had become even more of an African-American phenomenon over time (Figures 4a and 4b). More significantly, as defined here, in 2000 the sub-sample of all extremely poor neighborhoods in Houston would collectively classify as a "ghetto." That is the collective population of these neighborhoods was over two-thirds African-American.

Discussion and Concluding Remarks

The results of this analysis suggest that the nature of poverty concentration within Houston changed considerably during the course of the 1990s. Houston residents, including members of all major racial and/or ethnic groups, were much less exposed to poverty residentially in 2000 than they were at the
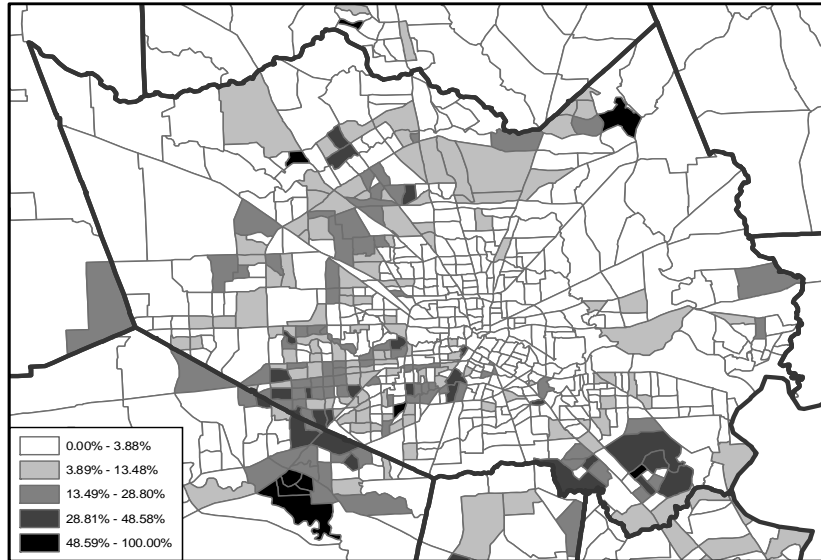
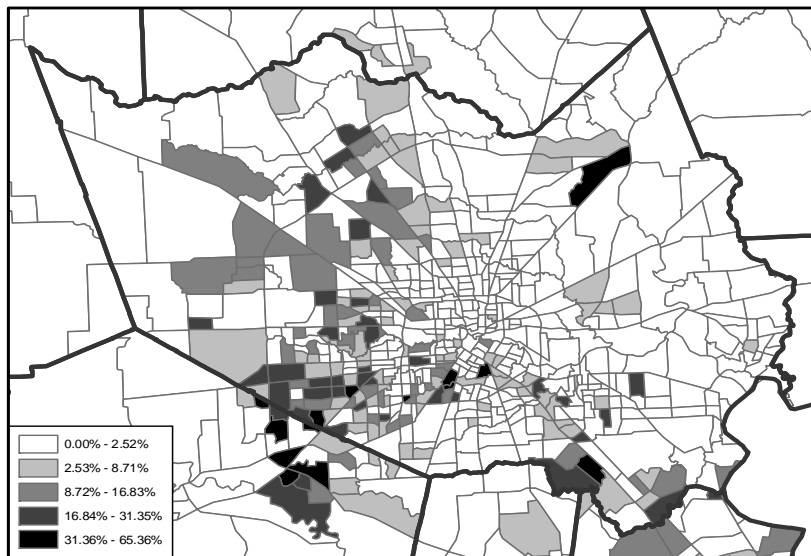**Figure 3a.** Percent of Asian population among total poverty population, 1990.

Figure 3b. Percent of Asian population among total poverty population, 2000.

Table 4a. Changes in Extremely Poor Neighborhoods By Race and
Ethnicity in the Houston, Texas CMSA, 1990 – 2000

	1990	2000	Change
Total Neighborhood Poverty Rate (NPR)	4.6	1.8	-2.8
NPR - Whites	0.5	0.2	-0.3
NPR - African-Americans	15.1	7.7	-7.4
NPR - Hispanics	7.7	1.3	-6.4
NPR - Asians	1.4	0.3	-1.1
Total Concentrated Poverty Rate (CPR)	14.6	6.2	-8.4
CPR - Whites	2.5	0.2	-1.7
CPR - African-Americans	27.5	17.4	-10.1
CPR - Hispanics	12.7	2.8	-9.9
CPR - Asians	5.8	1.4	-4.4

Source: U.S. Census Bureau (1990 and 2000)

Table 4b. Changes in Composition of Extremely Poor Neighborhoods by
Race and Ethnicity in the Houston, Texas CMSA, 1990 – 2000

	1990	2000
Total population	167,782	82,233
Total poor population	79,649	38,759
White population	11,099 (6.6%) *	3,907 (4.8%) *
White poor	3,669 (2.2%) *	1,048 (1.2%) *
African-American population	97,259 (58.0%) *	58,616 (71.3%) *
African-American poor	50,163 (30.0%) *	29,064 (35.3%) *
Hispanic population	57,612 (34.3%) *	18,612 (22.6%) *
Hispanic Poor	24,841(14.8%) *	8,234 (10.0%) *
Asian Population	1,749 (1.0%) *	822 (1.0%) *
Asian Poor	1,008 (0.6%) *	376 (0.5%) *

* Numbers in parenthesis refer to the proportion of the overall population.
Example: in 2000 35.3% of the population of extremely poor neighborhoods
were both poor and African-American.

Source: U.S. Census Bureau (1990 and 2000)

beginning of the decade. In addition, by 2000 extremely poor neighborhoods exhibited much less of a presence on Houston's landscape. In these regards Houston vividly reflects trends evident in many, if not most, urban areas in the U.S. during the 1990s. Nevertheless, despite these changes, poverty obviously did not disappear from the Houston. Rather it merely evolved in response to changes impacting the broader urban area, most notably immigration and the increased diversity that resulted from this process. The implication of these results is summarized by four main points, all of which are explained below.

First, the metropolitan-wide increase in the non-poor had a tremendous impact on poverty concentration evident at the neighborhood-level. Given the substantial job growth evident within the metropolitan region, these results would generally lend support to the notion that changes in neighborhood-level poverty are largely a function of the operation of metropolitan-wide economies (Galster and Mincy 1993; Galster, Mincy and Tobin 1997; Jargowsky 1997; Strait 2000; 2001a). Houston's economic growth could influence poverty concentration in two ways: (1) increasing employment opportunity could lift a significant proportion of the poor above the poverty level, and/or (2) increased job growth could increase the in-migration of the non-poor, thus decreasing the overall proportion of the poor. Either scenario, or both, could significantly reduce the exposure of the Houston population to poverty. Further analysis is needed to discern the varied impacts stemming from these two different, yet related processes.

Second, the process of immigration had significant impacts on the nature of neighborhood-level poverty within the urban area. A far larger percentage of Hispanic newcomers to Houston were not poor, yet by 2000 this rapidly growing ethnic group accounted for a disproportionately large (46.8%) proportion of the overall poor population. Compared to other groups, undocumented immigrants are more likely to be both poor and to remain uncounted by official census reports. Given these facts, it is realistic to assume that around half of Houston's poor population was Hispanic in 2000, perhaps more. Thus, it should be no surprise that non-Hispanics are becoming more residentially exposed to this group. While they are less exposed to poverty overall, all non-Hispanics do indeed increasingly share neighborhoods with poor Hispanics. Likewise, all *poor* groups are becoming increasingly exposed to *non-poor* Hispanics. These facts suggest that the increase in Hispanics was responsible for increased ethnic integration that crossed lines of class. In essence, these findings provide more support for the notion that immigration, a process operating at global, national and regional scales, can have significant impacts that manifest at the neighborhood-level (Strait 2002; Jargowsky 2006).

Third, the racial and ethnic continuum in terms of poverty concentration generally evident within other urban areas is also evident within Houston. As identified elsewhere, the changes that occurred within Houston during the 1990s in regards to poverty exposure varied considerably by race and ethnicity.
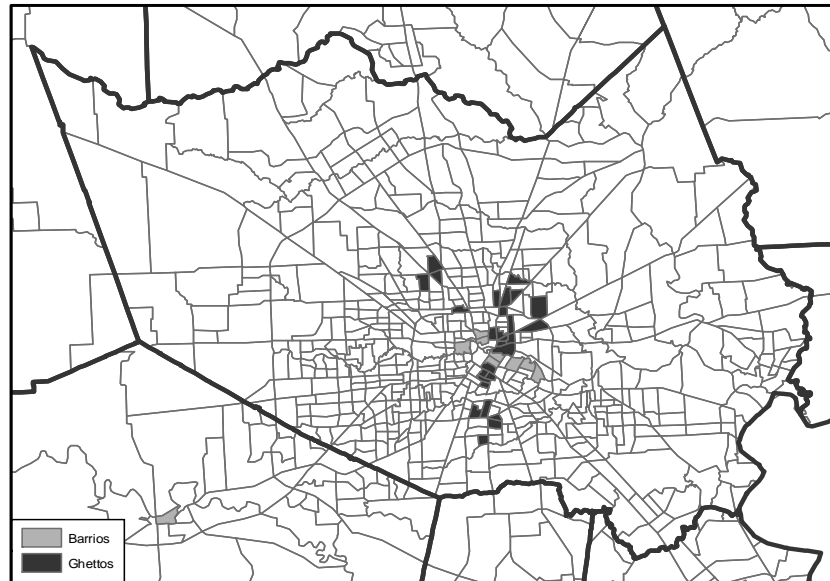
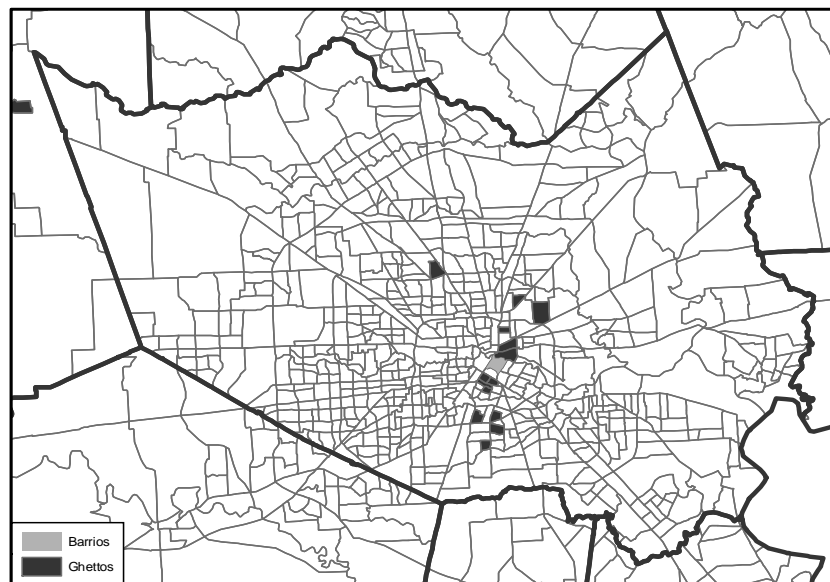**Figure 4a.** Extremely poor neighborhoods, 1990.

Figure 4b. Extremely poor neighborhoods, 2000.

The African-American poor reside within poorer neighborhoods than those inhabited by other poor groups considered here. This specific population is also more spatially isolated than other groups. The White poor were much less likely to live in poorer neighborhoods, while poor Hispanics exhibited intermediate levels of poverty concentration. Results of statistical and cartographic analyses suggest that the Hispanic poor are becoming less isolated by redistributing throughout the broader metropolitan area over time (Figures 2a and 2b). Poor Asians are only slightly more exposed to poverty than Whites and are also relatively suburbanized. However, rather than being widely distributed throughout the broader Houston region, this poor population primarily concentrates within peripheral neighborhoods inhabited by of a high proportion of non-poor Asian counterparts.

Finally, regardless of changes evident among the poverty population during the 1990s, by 2000 one fact had not changed; African-Americans were still far more likely to inhabit extremely poor neighborhoods than any other group. During the 1990s the number of "ghettos" decreased by 50% and total number of African-Americans residing within them dropped dramatically. Further, a number of extremely poor neighborhoods evident in 2000 were actually classified as "mixed slums," thus they were not dominated by any single minority group. Still, it is undeniable that within Houston extreme neighborhood poverty, as a geographic artifact, is in the process of becoming a phenomenon primarily limited to African-Americans. Although Houston's poverty population had became significantly more Hispanic, in 2000 over 35% of the population residing within extremely poor neighborhoods were accounted for by poor African-Americans. There are indeed large numbers of poor Hispanics experiencing poverty within Houston, yet few of them reside within extremely poor neighborhoods as they are defined here. More striking is the fact that in 2000 a resident of such a neighborhood would be more likely to reside amongst non-poor African-Americans than they would poor members of other racial or ethnic groups. In Houston, as in most other urban areas in the U.S., the African-American population experiences the intersection of racial segregation and high levels of poverty concentration.

Findings document a number of changes evident in Houston in terms of poverty concentration, yet a number of questions remain. One obvious question relates to the current status of poverty in Houston. The data utilized here do not capture the very rapid increase in poverty that occurred across Texas since 2000 (U.S. Census Bureau 2005). The fact that this recent poverty growth stems partially from immigration also means that 1990 and 2000 census data fail to accurately reflect Houston's present level of diversity. The only reliable data source that provides consistent neighborhood-level poverty data by race and ethnicity across an entire MSA are published by the U.S. Census Bureau on a decennial basis. The 2010 census tract data will not be available

until 2012, so findings presented here are based on the most recent data available. Obviously it remains critical to understand the neighborhood-level impacts of Houston's recent dynamics. However, a major goal of this research was to understand how neighborhood-level poverty in Houston has changed over time. The results generated from this research do indeed provide insight into relatively recent, if not the most recent, neighborhood-level trends. The findings presented here also provide an accurate glimpse of the neighborhood-level framework from which the most recent changes in poverty will have manifested.

The aforementioned findings also encourage the need to address a number of additional questions. First, it remains important to understand the nature of poverty concentration within other urban contexts. Even the underlying causes of poverty itself have been shown to vary according to the specific nature of places (Kodras 1997; Cooke 1999; Strait 2001a). For example, the specific contexts evident in Houston would not exactly apply to other urban areas along the U.S.-Mexican border that offer far less economic opportunities or that have less diverse populations. Second, little research has attempted to document the potential differences in terms of residential experiences evident among different Hispanic or Asian populations. Evidence suggests that the residential experiences of Hispanics vary considerably according to both "race" and nationality (Aquirre, Schwirian and La Greca 1980; Haverluk 1997). In addition, Vietnamese, Chinese, Koreans and Indians tend to occupy different economic and cultural niches within urban areas, and would certainly exhibit different residential behaviors (Chung 1995). The same could be true for other Asian and/or Hispanic nationality groups residing within Houston. Moreover, newly arrived immigrants from Mexico or other Central American countries may exhibit different residential tendencies than co-ethnics who descend from the area's earliest residents. In essence, a more complete understanding of poverty exposure would entail a more intensive analysis of the residential experiences of these different sub-groups.

The most important question these findings fail to thoroughly address is *why*? Results reported here do not explain *why* poor African-Americans in Houston remain the most spatially isolated group. Nor do they explain *why* African-Americans are far more likely to inhabit Houston's most extremely poor neighborhoods than other groups. Disentangling the *causes* of poverty concentration was not the primary focus of this paper, yet two potential causal factors identified in the literature– middle class flight and racial segregation - are very relevant to interpretations of these results (Wilson 1987; Zhou 1992; Kaplan 1997, 1998; Wood 1997; Lin 1998; Strait 2001b, 2002, 2006; James 2006). It is possible that the residential behaviors of middle-class African-Americans, which often lead them to relocate from certain poorer neighborhoods, has contributed significantly to the spatial isolation of Houston's Afri-

can-American poor left behind (Strait and Gong 2008). In comparison, evidence suggests that certain immigrant groups possess a stronger desire to cluster in neighborhoods inhabited by other co-ethnics, irrespective of potential class differences (Zhou 1992; Kaplan 1997, 1998; Wood 1997; Lin 1998; James 2006; Strait 2006). As reported earlier, this may explain the clustering of poor Asians within Houston's emerging "ethnoburbs." African-Americans are also far more impacted than either Asians or Hispanics by two specific factors known to contribute to racial segregation: (1) vagaries within the real estate market that place limits on access to housing (Yinger 1995; Turner et al. 2002; Turner and Ross 2005), and (2) residential preferences that lead certain groups, particularly whites, to avoid living in neighborhoods where African-Americans constitute a noticeable presence (Kaplan and Holloway 1998; O'Conner et al. 2001). In short, it is difficult to fully comprehend poverty concentration without addressing the many questions that pertain to the underlying dynamics of segregation by both race and class. Addressing these questions obviously lie beyond the scope of this particular research, yet the authors feel a sense of accomplishment simply knowing that the results reported here may actually encourage their asking.

Finally, it remains imperative to investigate the varied ways that different racial and/or ethnic groups actually *experience* or *cope* with neighborhood poverty. For example, it is logical to assume that the different groups within Houston formulate different strategies or "coping mechanisms" that guide their residential decision-making. The nature of such topics also lie beyond the scope of this paper, yet addressing these "where" and "how" questions are critical to fully understanding the nature of neighborhood-level poverty.

Notes

1. The terminology used in this paper to refer to different racial and/or ethnic groups follows that utilized by the U. S. Census Bureau. According to the U. S. Census, the Hispanic population refers to an ethnic group that includes people having varied racial backgrounds. In popular and scholarly usage, the terms "Hispanic" and "Latino" are often used interchangeably to refer to the same population. The term Hispanic is used here so that consistency may be maintained with the terminology utilized by the primary data source, the U. S. Census. Throughout this paper the term "White" is used to refer to what officially is known as the "non-Hispanic White" population. Likewise, the terms "black" or "African-American" are used here to refer to a non-Hispanic racial group that would not include "Black Hispanics." The census recognizes the "Asian" population as a distinct racial group that would include people from a variety of different ethnic backgrounds. Beginning with the 2000 Census, a multi-racial category was available, which allowed indi-

viduals to identify themselves as having more than one "racial" background. However, the proportion of the population claiming more than one race was relatively small, even within an environment as diverse as Houston. In order to compare population counts among racial and ethnic groups over different census years, this multi-racial population was excluded.

   The particular categories coded by the U.S. Census may not be the most accurate way to gage racial and/or ethnic identity. The authors acknowledges the argument that such racial and ethnic categories represent "social constructs" that may have no real biological meaning that can be accurately measured scientifically (Omni and Winant 1986; Winant 1994). This argument becomes particularly relevant when considering the various distinct populations comprising the larger ethnic and/or racial groups labeled "Hispanic" or "Asian" according to the U. S. Census. However, for obvious reasons the methodology utilized here requires the use of such census-defined categories. Moreover, geographical research, including findings reported in this paper, demonstrate that such categories do indeed have a geographical reality. Given the purpose of this paper, the use of census-defined categories was deemed both necessary and appropriate.

2. In 1990 the Houston-Galveston-Brazoria Consolidated Metropolitan Statistical Area (CMSA) was comprised of 3 distinct Primary Metropolitan Statistical Areas (PMSAs) that collectively included 7 counties; the Houston, Galveston and Brazoria PMSAs. The Houston PMSA included Fort Bend, Harris, Liberty, Montgomery and Waller counties. The Galveston PMSA included Galveston County, while the Brazoria PMSA was comprised of Brazoria County.

   The census-defined CMSA for 2000 also included Chambers, Austin and San Jacinto counties. However, for interpretive purposes the methodology utilized for this study required a standardized study area for both 1990 and 2000. For this reason these latter three counties were not considered. Thus, any figures for the 2000 Houston CMSA referenced in this paper only include data for the aforementioned seven counties.

3. The isolation/exposure indices generate a number ranging between 0 and 1 that is interpreted as a percentage. Consider a hypothetical example: the exposure of poor whites to other poor whites was 0.14 and the exposure of poor whites to poor Hispanics was 0.25. This means that the average poor white individual in the study would reside in a neighborhood where 14% of the population was also poor and White, and where 25% of the neighborhood population was poor and Hispanic.

4. Utilization of the 40% criteria as an estimation for "extreme" neighborhood poverty was originally developed by the U.S. Census Bureau. Following the publication of the 1970 Decennial Census, use of the criteria proliferated as scholars became interested in more intensely investigating the nature of

those neighborhoods associated with extreme economic and social depriva-
tion (Glasgow 1980; Auletta 1982; Wilson 1987; Ricketts and Sawhill 1988;
Hughes 1989; Jencks 1989; Ricketts 1989; Van Haistma 1989; Jargowksy
and Bane 1991).

Given that the 40% poverty threshold is obviously arbitrary and the fact
that it relies on the widely criticized federally determined poverty threshold,
a number of scholars have advocated for the use of alternative measures of
extreme poverty (Greene 1991; Sanchez-Jankowski 1997; Lee and Culhane
1998). However, scholarly fieldwork determined that this criterion does
allow for the recognition of neighborhoods generally characterized by dilapi-
dated housing, blight and decay, abandoned structures, excessive loitering,
and having overall threatening appearances. Neighborhoods identified using
the 40% poverty rate also closely matched those identified as "ghettos,"
"barrios" or "slums" by knowledgeable local individuals, such as city plan-
ners and social workers (Jargowsky and Bane 1991). Perhaps most impor-
tantly, by using this measurement it is possible to effectively compare results
with findings generating from previous studies of extreme poverty.

5. The *neighborhood poverty rate* (NPR) and the *concentrated poverty rate*
(CPR), while similar measures, do represent distinct conceptions of extreme
poverty. The former measure indicates the proportion of an urban area's
population who may or may not live below the poverty-level, but who must
cope with the poverty around them. The later measure indicates the propor-
tion of the urban population who must cope with their own poverty, as well
as the surrounding poverty evident within their immediate neighborhood
environment (Jargowsky 1997; Strait 2001a).

6. The usage of the term "ghetto" has evolved considerably over time. The term
has generally been used to refer an urban area where people identified as
having a specific racial or ethnic background live as a group, either through
voluntary or involuntarily means. Most scholars agree that the term was first
used in this context within16[th] century Venice, where it was specifically used
to refer to the only area where Jews could live (Toaff 1973; Debenedetti-
Stow 1992). Within the United States, the term was used as recently as the
early-to-mid 20th century to refer to urban neighborhoods inhabited by Jews
and other eastern European ethnic groups (Wirth 1928). When highly segre-
gated African-American neighborhoods emerged as an enduring feature of
the urban landscape following the great northern migration during World
War I, the term took on new meaning. Initially most of the residents of these
newer "black ghettos," like the eastern European counterparts who preceded
them, were generally poor. Thus, ghettos eventually became associated as
much with poverty as with race or ethnicity.

"Barrio" is a Spanish word historically used to refer to a distinct district or
neighborhood (Romo 1983). In Spain and some parts of Spanish-speaking

Latin America the term can refer to an official political unit. For example, in Puerto Rico a barrio is a subdivision of a *municipio*, or city. In other contexts it may refer to rural villages, such as in the Philippines. Outside of the U.S. the term often does not have a particular socioeconomic connotation. Yet in certain places, poor slums located on the outskirts of larger urban areas are refereed to as barrios, such as is the case in Caracas, Venezuela. In the United States, however, the term is most commonly used to refer a Hispanic equivalent of a ghetto (Griswold del Castillo 1980; Romo 1983; Freidenberg 2000; Diaz 2005). In this context, the term is used in reference to lower-income neighborhoods largely comprised of Spanish-speaking residents.

   One goal of our research was to identify extremely poor neighborhoods having specific racial and ethnic compositions. While usage of the terms ghetto and/or barrio often implies that a particularly neighborhood is poor, this is by no means universally true. Certainly there are many urban neighborhoods that are predominantly African-American or Hispanic that would not classify as being poor or even disadvantaged, including some with Houston. Regardless, the fact that the terms are now ubiquitously acknowledged as having both racial/ethnic *and* economic connotations makes the choice to utilize them in this paper a logical one.

7. Ethnic "self-selectivity" refers to the tendency for certain ethnic groups to value ethnic identity over income status or class when making residential decisions. Accordingly, this would mean many Asian populations may prefer to live in neighborhoods inhabited by other Asians, irrespective of potential class differences.

8. There were no neighborhoods in the study area whose populations were comprised of 50% or more Asians in either 1990 or 2000. While it is possible that neighborhoods classified as "other" may have a relatively high proportion of Asians, such neighborhoods would not truly be dominated by this racial group as defined here.

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