Community Choice in Large Cities: Selectivity and Ethnic Sorting Across Neighborhoods

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Abstract

Neighborhoods and communities are seen as central to the organization of our cities, and to our lives within them. Indeed we are often defined by where we live and marketing groups are adept at using demographic characteristics of particular areas to sell goods and services. Clearly, our cities are divided by socio-economic status and ethnicity and that division is summarized in variation across neighborhoods within the residential fabric. Thus, the issue of neighborhood selection and how selection creates neighborhood outcomes is central in neighborhood studies. The current presentation reviews the literature on neighborhood selection to evaluate the contextual effects of neighborhoods, and then uses data from the Panel Study of Income Dynamics to examine the impacts of different movements across neighborhoods. Not surprisingly the paper will emphasize the reinforcing nature of moves but will also use the analysis to examine the outcomes for movers who move up and down the socio-economic status scale. There is clear evidence that ethnic and racial groups are advantaged when they have greater resources. Money matters in the choices of ethnic combinations and in moving up the status scale. This would not be remarkable except that there is substantial US literature which continues to downplay income and wealth as critical variables in neighborhood selection.

A substantial literature has now demonstrated the continuing separation of ethnic and racial groups and of separation more generally by socio-economic status within metropolitan areas. In particular, US European and Canadian cities are still substantially segregated by race and income and this has generated a research agenda which attempts to understand how and why this separation occurs. That literature emphasizes one of three perspectives on why and how separation occurs within cities. One of the explanations focuses on resources and budget constraints. Although this explanation has been discounted by some sociologists, clearly resources matter and budget constraints and the cost of housing are factors basic to who can live in particular neighborhoods. In this perspective higher housing costs and lower incomes are constraints on the ability of poorer households and minorities to enter affluent and often white neighborhoods. A second perspective argues that much of the separation in the residential fabric is created by the expressed preferences and social networks of whites and minorities. In particular it is the varying desires and willingness of households to live in neighborhoods within the city where they are in the majority or at the very least a plurality that generates separation. The contrasting preferences lead to residential segregation as there are insufficient neighborhoods to satisfy the varying preferences or both minority and white households. A third perspective emphasizes the continuing barriers to minority access to predominantly white neighborhoods. This perspective emphasizes housing market discrimination and the role of real estate agents and lending institutions as gatekeepers in the residential mobility process. In this view it is structural forces which continue to reinforce the patterns of separation within the residential fabric.

All three perspectives have individually generated a substantial research literature and contributed to the debate about the relative affect of budget constraints, preferences and choice, and structural discrimination on the creation of the patterns of ethnic and socio economic sorting that characterizes modern metropolitan areas. Although there is a continuing debate about the relative role of the three mechanisms and considerable debate about the role of budget constraints in residential selection we are increasingly sure that a combination of budget constraints and preferences for particular ethnic and racial compositions are a central element of understanding why there is separation. That is not

to argue that structural forces play no role but the research seems to suggest that those affects may be at the margin of creating the patterns we observe.

In part the explanation based on budgets and preferences reflects the operation of residential mobility in the city. There is substantial inertia in the structure of residential change – people move nearby often within the same neighborhood and often within constraints formed by access to jobs, schools and other urban services. The distance decay curve for residential mobility and migration established that local moves predominate within the overall structure of relocation, and this in itself will necessitate that new choices are very likely to be like old locations. At the same time it is clear that some households move up and others move down in socio-economic status and some households move from areas of majority own race to more mixed areas. These changes eventually change the levels of separation and affect the "look of the residential fabric".

This paper is about selection, about who chooses what kind of neighborhood and the relationship of that choice to household characteristics. The research uses data from the panel study of income dynamics (PSID) and data from the decennial census of population and housing to examine the selectivity patterns of moving within metropolitan areas in the US. We first examine the patterns of selectivity in neighborhood choices by neighborhood racial and ethnic composition and then socio economic status, based on tract data. Second, we pose the question to what extent do the moves reinforce current ethnic and socio-economic distributions. Third, does the selection for majority-own race and majority white areas, and the selection across the socio-economic status scale differ on the dimensions of income, education, and age, and by ethnicity.

Theoretical background and previous research

Budget constraints and neighborhood choices

There has been a general tendency to argue that budget constraints cannot explain ethnic and racial separation. On the face of it, we would expect that income matters in residential selection as the hedonic housing models would suggest. However, with

respect to racial and ethnic patterns there has been an argument, originally by Farley et al (1978) but continued by Massey and Denton (1993) and Charles (2000), that largely dismisses the role of socio-economic status. The argument in brief, is that because there are neighborhoods in suburban areas which are affordable for both black and white households but where there are few or no African Americans then the explanation must be discrimination. Fisher (2003) also provides a similar argument and concludes that income accounts for only about 25 percent of the variance in residential choice. Crowder, South and Chavez (2006) also suggest that economic status, and wealth in particular, is not a critical factor influencing choice. They use individual data to examine the mobility patterns of black and white households and specifically include measures of household and parental wealth in their models. They conclude that racial differences in wealth appear incapable of explaining the disparate neighborhood locations of black and Anglo families. Putting aside the issue that we would not expect income or wealth alone to explain the patterns, as I have argued elsewhere (Clark, 2007), they also conclude seemingly in contradiction to their argument, that greater household and parental wealth for African Americans is associated with migration into neighborhoods that contain a relatively large percentage of Anglo residents. Albeit the effects may be small but it does appear that wealth and income do play a role. Perhaps it is a question of which of the perspectives we wish to privilege in our discussion of the explanations of selection.

Still, some data suggest more directly that there are differential choices by the available resources. Quillian (2003) and Patillo (2000) show that non-poor blacks are more likely than poor blacks to choose predominantly white residential neighborhoods when they move. Blacks who move out of predominantly white tracts are significantly more likely to move to another predominantly white tract and make up a small percentage of all non-whites in that particular tract. This mobility behavior is consistent with mobility behavior in general wherein minorities attempt to leave marginal lower class and lower middle class neighborhoods for middle class neighborhoods. This process means that single parent minority households who tend to be poorer will end up in poorer neighborhoods with lower probabilities of being able to leave those neighborhoods. It is here that the intersection of changes in life circumstances and residential location can

interact – thus unemployment and being unmarried can limit the accumulation of human capital and the income necessary for moving to and living in predominantly owner occupied housing.

Other research also suggests that the role of income is not insignificant. Clark and Blue (2004) showed that income does distinguish between levels of separation for whites and blacks and in the largest multi-ethnic metropolitan areas the levels of separation, measured by dissimilarity and exposure indices, decline with increases in income. Homeownership also plays an important role in increasing access to neighborhoods which are predominantly white and increases the likelihood of staying in those neighborhoods. As we know (from research on residential mobility) homeowners are less likely to move and therefore less likely than renters to leave a neighborhood (Clark and Dieleman, 1996; Quillian 1999, 2002). There is also research which shows that low income African American families are more likely to move back into predominantly black neighborhoods than high income African American families. This suggests that financial pressure intersects with homeownership as a factor in return migration. Further, examining the income and budget effects is one of the central questions in the neighborhood mobility patterns.

Neighborhood preferences and neighborhood choices

Clearly it is not only a budget constraint that influences selection. The substantial body of research on residential preferences shows that the differential willingness to live with combinations of other races and ethnicities is a powerful force in creating separation across neighborhoods and communities. A seminal empirical paper (Farley, et al 1978) established that, by and large, African Americans prefer integrated neighborhoods and specifically neighborhoods which are close to equal combinations of whites and African-Americans, while whites express preferences for largely majority white neighborhoods. Those findings were extended and elaborated in a number of papers which confirmed the difference between the choices of African-Americans and whites households (Clark, 1991, 1992, Farley, Fielding and Krysan, 1997). The research on African American preferences for living with other minority groups is less consistent although there is some

evidence for integrated living (50/50 neighborhoods) on the part of African Americans generally (Clark, 1992).

There does not seem to be any question from a large number of empirical studies that African American households express a stronger desire to be in a mixed neighborhood than do whites. Indeed a study across several cities including analyses of all racial and ethnic groups revealed that very similar patterns of some level of inter-mixing are preferred (Clark, 2007) It also seems to be true that in studies of other minorities that Hispanics and Asians express relatively strong own race preferences for neighborhoods where they will be a majority. However, even if African American households slightly prefer more integrated neighborhoods Schelling's theoretical contribution was to show that even relatively small differences in people's preference for neighbors like themselves can lead to quite significant levels of residential separation in the urban fabric. Showing how preferences can be translated into Schelling tolerance schedules was an important part of moving the study of preferences to a central role in the theory of residential separation (Clark at 1991). Still, there are substantial differences in how these preferences are interpreted in their role in creating separation. Some see preferences as themselves generated form white hostility (Charles, 2000; Farley Fielding and Krysan (1997) while others argue for a neutral interpretation of preferences as reflecting comfort and familiarity (Clark and Fossett, 2008).

The choice context and residential mobility

Choices do not occur in a vacuum. The city is structured by race and by socio-economic status. Choices are made within that context and this context does not provide a complete palette of choices. To begin, there are still few integrated neighborhoods which can be used to make 50/50 residential choices. In fact there are very few truly 50/50 neighborhoods but if we broaden the definition to include all neighborhoods which are between 40 and 60 percent white and 60 and 40 percent minorities, less than a fifth of all tracts in US cities qualify as integrated tracts, or more specifically, tracts which would satisfy African American expressed preferences. This constraint will necessarily restrict the number of households who can choose such a neighborhood. The choices of

combinations of Hispanic and African American mixing enlarges the possibility of a mixed neighborhood setting, but neither African Americans nor Hispanics express strong preferences for that mixing.

As we emphasized in the introductory remarks not only do we have a constrained context we know from the residential mobility literature that households move within familiar contexts within the city and often move a relatively short distance. We would expect, therefore, that many of the moves will be within areas that are similar both in origin and destination characteristics (Clark and Dieleman 1996). Research specifically on neighborhood choice has shown the high probability that white households will choose and move to predominantly white areas but it also shows that Hispanic and African-American households tend to choose majority own race neighborhoods even though they have expressed preferences for some form of integration (Clark, 1992). The tendency of black households to move to other black neighborhoods has been confirmed by South and Crowder (1998a and 1998b). In those studies it was quite clear that the predominant choices despite our evidence of 50/50 preferences was to choose own race residential selections. Of course all groups are influenced in their mobility behavior by a variety of life cycle factors including age and children, homeownership and duration of residence (Clark and Dieleman, 1996).

Much of the recent focus has been on whether or not whites are avoiding neighborhoods with substantial non-Anglo, especially black, populations (Crowder et al. 2006). Now whether whites are avoiding racially mixed neighborhoods because they do not want to live with non-whites or whether this is a reaction to other factors that characterize the urban structure and may be associated with race (crime and housing values to note two important neighborhood characteristics) is still debated (Emerson, Yancy and Choi, 2001). While race is a factor in residential choices, Emerson, Yancy and Choi point out that about 25 percent of whites say they would buy a house when the racial composition was 15 percent black or less, about the national average if blacks were distributed across neighborhoods according to their percentage of the national population. Still, whites were much less likely to choose such neighborhoods than Hispanics.

There is survey evidence of growing tolerance and a greater willingness to live in moderately mixed neighborhoods. The data show that black college graduates (and by extension those with higher incomes) have considerably more exposure to whites in their neighborhoods than do blacks with low levels of education (St John and Clymer, 2000). Still, even this positive finding must be tempered by the evidence that many middle class black households are choosing to live in majority black middle class neighborhoods especially when the numbers of middle class black households is relatively large. Clearly, there are diverse outcomes in the changing intersection of race and class and it may be that the differences will exacerbate the differences between those in the minority communities who have more education and more income and those who are less able to move up the income ladder.

Previous work on preferences drew a distinction between a household's willingness of moving into a neighborhood and the likelihood of leaving a neighborhood (Clark and Armor, 1998). In general households had lower expressed likelihoods of leaving a neighborhood than entering a neighborhood. While white households expressed strong preferences for neighborhoods which were more than 70% white, they were willing to stay in neighborhoods that changed to become nearly 50/50 although with a majority of whites. These findings from preference studies have been confirmed with simulations of the likelihood of moving and staying (Ellen, 1996). In the simulation of the likelihoods of moving into or leaving a neighborhood, the research suggests that while households who are resident within a neighborhood are likely to have a good sense of the quality of the neighborhood, its schools, crime rates and social context, it is more difficult for outsiders who may choose to use race as a signal of neighborhood quality. In this conceptualization, a household's dislike of integration must exceed the costs of moving but for in-movers the preference for integration can be lower. The simulations show how much more important entry is over exit in creating racial change.

Data and methods

To examine the evidence on choice and outcomes we use data from the Panel Study of Income Dynamics, (PSID) for the years 1999 to 2005 and construct matrices of choice by neighborhood ethnicity and neighborhood socio-economic status. During this period the PSID collected data every two years so we will use data from 1999, 2001, 2003 and 2005. As others have noted, the PSID is a rich source of data for examining neighborhood mobility. Geo- coded files link the addresses of all respondents to their corresponding census tract which makes it possible to examine residential moves between tracts. Obviously tracts are not a perfect representation of neighborhoods, but they are the closest available unit to represent the context within which mobility takes place. They are widely used in geographic and demographic research as a basis for residential studies of neighborhood change and neighborhood mobility. We use census data for the year from the 2000 census for the five-year period in which we examine mobility. We recognize that some tracts will have undergone ethnic change, and we may not estimate the racial and ethnic composition exactly. However, the amount of change in five years for most tracts will not be so great as to interrupt the broad outline of the findings. Moreover, because we are using fairly broad categories by race, ethnicity and socio economic status; the likelihood of tracts moving from one category to another is thereby limited. Finally, the 2000 data is the only tract data available for the analysis and the decision not to collect long form data in the 2010 census will make these analyses more difficult in future analyses.

We select black and non-Hispanic white, Asian and Hispanic heads of households during the period 1999 to 2005. Family members, who move with a head of household, are only counted as one move. The PSID data provides month and year of move and we are able to look back for the proceeding year to see whether there was a move. We have data on the ethnicity/ racial composition and socio-economic status of the respondent's census tract at each interview. Thus, we are able to create a matrix of all the moves between categories of racial and ethnic composition. We recognize that the two-year

interview interval could create additional moves, which are not part of our sample.[1] We also note that we have aggregated all tracts across metropolitan areas and a move could be between metropolitan areas.[2]

To explore selectivity the study uses two strategies. The first strategy focuses on race and ethnicity and constructs a set of racial and ethnic categories (30 percent white, 30-50 percent white, 50-70 percent white and over 70 percent white) to examine the changes in selectivity outcomes over the 6 year period of analysis. These categories effectively construct a continuum or more or less minority in combination with whites. A second approach examines choices across socio-economic status. Four variables, tenure, value, percent in poverty and percent single parent families are used to construct a bi-polar index of neighborhood status. Principal component analysis of all tracts (movers and non movers) generated a factor score for each tract. The approach is similar to indices of neighborhood deprivation where high levels of poverty, single parent households, largely rental stock and lower housing values create the least desirable neighborhoods, and high values, high levels of ownership, low levels of poverty and few single parent households create the least deprived neighborhoods. The scores on tracts are ordered in quintiles and moves between quintiles test the extent to which households make moves within, or up and down the SES hierarchy.

Findings- racial and ethnic choices

The first set of findings focus on selectivity across neighborhoods defined by race and ethnicity. The analysis reports (a) existing patterns of residence across the four categories of ethnicity and racial composition, (b) the distribution of destination choices, (c) matrices of mobility amongst the four categories of racial and ethnic composition and (d) patterns of own race choice for Whites Blacks Asians and Hispanics.

[1] From other research with the PSID. we know that the number of moves by any one household in a two-year period is relatively small.

[2] A small number of moves are between metropolitan areas but we can still conceptualize these moves as between different kinds of neighborhoods. Later research will unpack the differences across choices within and between neighborhoods.

We report resident household locations across neighborhoods defined by census tracts for white Black Asian Hispanic and other race/ethnicity (Table 1). In 2001 the data confirm the tendency for whites to live in all white neighborhoods but the results are quite mixed across other racial and ethnic groups. Nearly half of all African-Americans live in tracts which are less than 30% white and the number is even higher for Hispanics (59.2%). Notable is the significant proportions of other races, Asians and African-Americans who live in tracts which are at least 50% white. These proportions vary from a high of nearly 60% for Asian ethnic groups to a low of just under 20% for Hispanics. While whites on the whole still live with whites, there are significant numbers of whites and other ethnic groups living in what we can define as mixed race neighborhoods.

The same data for 2005 reveals some important changes especially for the Hispanic population, but the changes for the African-American population are notable also (Table 2). African-Americans have increased their proportion in tracts which are more than 50% white (from 32.6 to 35.6) but the most dramatic change is for the Hispanic population whose proportion in 50% or more white tracts is over half by the middle of the decade. The "other" racial ethnic group has also increased their proportion in 50% or more white tracts. Clearly, there are significant changes occurring in the distribution of all racial and ethnic groups across neighborhoods and these results confirm other data which has also documented these changes (Brookings, 2010).

Mobility and choices

The heart of the research in this paper is about the selectivity process and the destination choices when households change residence and change locations (Table 3). As expected from other research, whites by a very large proportion select mostly white neighborhoods (over 80 percent move to 70% or more white tracts). The choices for other ethnic groups are much more diverse. While 51% of Asian households move to tracts which are 70% or more white, about a fifth (21%) of Black households, and 23% of Hispanic households make such moves. More importantly more than a third of black households move to tracts which are 50% or more white and 66% of Asians do this, along with 40% of Hispanics. There is clearly a great deal of fluidity in the choice

processes and outcomes in terms of racial and ethnic composition for these groups. Neighborhoods are changing and becoming more racially mixed and selectivity is reflecting that change. Here we can point to the affect of overall demographic change creating the context for (and indeed being created by) further demographic changes. A very large part of this demographic change is the 15 million new immigrants that the US received in the last decade and a half. At the same time nearly half of African-Americans move to tracts which are largely minority (less than 30% white) and more than the third of Hispanics do this as well. This bifurcated pattern will be something that we will examine in more detail later in the research.

While the analysis of the marginals for destination choice reveal considerable detail about choice and selectivity, we can gain considerable additional understanding of the choice process by examining the matrix of moves between the varying compositions of race and ethnicity. The analysis examines moves for whites, blacks and Hispanics (the numbers for Asians are not sufficiently large to carry out a tract to tract analysis). The analysis examines actual moves between the four categorizations of race and ethnicity (Figure 1). As expected, whites live in and move to neighborhoods which are 70% or more white households. Most white households in majority white tracts do not move down to tracts which are less white. Only small numbers of whites are in tracts which are 30% or less white and about a third of them move up to majority white tracts. For whites in the middle ranges, 30-70 percent white, about half move to majority white tracts when they move (Figure 1). Seventy-eight percent of the white moves are on the diagonal – a finding which emphasizes the continuity in selection and choice and the tendency to re-assert the current patterns of white residence. About 12.2 percent of the moves are above the diagonal (more white) and 9.8% are below the diagonal.

The selections by blacks and Hispanics reveal the potential for neighborhood change. While in some ways the moves of black households provide a mirror image to those of the white moves (about half of all black households have origins in neighborhoods which are 30% or less white in composition), there is lower dominance on the diagonal. Nearly a quarter of all black households are in neighborhoods which are

majority white (50% or more white) and move within those neighborhoods. Nearly 60 percent of black households move on the diagonal and slightly more move above the diagonal (23.2%) than move below the diagonal. That is slightly more make upward moves in the sense of more mixing. In examining this matrix we can focus on either the glass half full or the glass half empty with respect to access to white (and presumably higher status SES neighborhoods). In terms of the glass half full a large number of African-American households are in tracts which are majority white and a significant proportion of them are able to maintain those neighborhood locations when they move. In contrast, a significant number of African-Americans are in neighborhoods which are less than 50% white and they do not move out of those neighborhoods. It is these households that are either exercising a choice of more black neighbors or they are locked into poor neighborhoods with few opportunities for upward mobility.

The story, of Hispanic choices is somewhere between those of the white and the African-American households who move. The data are sparse compared to the information available for the other two groups but they tell a story of significant proportions of Hispanics in, and moving to 70% or more white neighborhoods and at the same time a significant proportion of Hispanics in, and moving within mostly minority neighborhoods (Figure 1). While there is again a strong diagonal preference (58.1% move on the diagonal) there is a distinctly higher likelihood of moving above the diagonal (26.2%) than below the diagonal (15.7%). Even though the numbers are small it resonates with census data which suggest strong changes in the distribution of Hispanic households (Brookings, 2010, Iceland, Weinberg, Steinmetz, 2002).

When we examine the diagonal probabilities, the extremes at either end of the diagonal have the highest values. Whites in highly white areas have very high probabilities of moving within those neighborhoods. Similarly, though at somewhat lower probabilities African Americans and Hispanics also maintain their residence in these white and presumably higher status neighborhoods. At the other extreme African American and Hispanic households in highly concentrated minority areas (non-white) are likely to stay in those areas. This is also somewhat true for white households but in their

case there is a real probability that they will make the move to highly white majority areas, certainly at higher probabilities than for African Americans and Hispanics. These descriptive findings are the basis for models of mobility choices – how do we understand the role of income, education, family status and ownership in these choices

Multinomial Models of the choice of race and ethnicity

In the discussion of the varying perspectives on continuing separation in the residential fabric we emphasized the possibility of variations in resources as an important part of understanding choices by black and white households. To test this proposition we conduct two modeling strategies, one which examines movements above and below the diagonal as against movement on the diagonal and a second modeling strategy, which looks at the choices of majority owned race. We might think of the first strategy as a test of moving up, moving down or staying in the status quo and the second strategy as a test of self selection. Each of these strategies however, is designed to evaluate the extent to which socioeconomic status is a force in seeding residential selections that we have examined descriptively to this point.

For whites, movement above the diagonal is related significantly to education (Table 4). Households with some college or college credentials are significantly more likely to move above the diagonal than below the diagonal. The measure on education is clearly the most important variable with the highest chi square value. Education is related to income though certainly not in a linear fashion but it reflects resources and perhaps as importantly, status. White households are moving to less minority neighborhoods in general. In addition, being a married family is marginally significant but interestingly has negative coefficients for both movements above and below the diagonal in contrast with moving on the diagonal itself. Without reading too much into this we might suggest that it hints at the inertia and stability that we discussed earlier in the conversations about choice and selection.

For black households, resources are clearly important in movements within the matrix (Table 5). Income is significant and significant for both movements above and

below the diagonal and ownership is also marginally significant but negatively related to movements below the diagonal, which is consistent with the notion of resources. Households moving above the diagonal to less minority neighborhoods not only have more income they are likely to be owners, while the coefficient for ownership for moves below the diagonal is negative. These findings are consistent with an explanation that greater resources enables choices other than in concentrated minority areas and opens up the possibility for moves to mixed residential areas, that is to areas that are less than 50% minority.

The numbers for Hispanics is small, and so we must treat the results with some caution but we can suggest that the movement above the dialogue is related to education compared to movement on the diagonal and professional status is also related, marginally, to movement above the diagonal (Table 6). These findings are consistent with the general arguments that we have been making. Resources and status are important variables in the decisions to choose particular combinations of neighbors. For Hispanics with small numbers the results can only be seen as indicative rather than definitive.

Despite the general confirmation of the status variables, as explanations for overall movements within the matrix, more strongly for whites and blacks than Hispanics, the levels of fit for the models are modest. The gamma and Somers D values are also modest and the levels of concordance are not high which suggests that there is considerable complexity in the choice patterns across neighborhoods. This of course is not expected as we have not factored preferences into the choice process for composition.

Logit models of own/other race choice

The results from the multinomial models of status effects are confirmed with specific models of choices for majority neighborhoods (white for white households and minority for black and Hispanic households. For whites, the logit model tests the choice of seventy plus percent white versus movement within less than 50 percent white. For Blacks, the logit model is the choice of 70% plus minority versus 50-100% white and similarly for Hispanics, the choice is 70% plus minority versus 50 to 100% white.

Whites who moved within mostly white areas had strong and significant coefficients for married families. Neither income nor education were important explanations for movement and choice within the majority white areas (table 7). Still, if we examine the incomes of those who move to or within own race areas, the incomes are 24 percent higher than those who move to less than 50 percent white areas. There are strong differences in education and ownership as well. The largest difference is for the married family variable - movement into less than a majority white area was on average about 20% less likely to be married households (Table 8).

It is black households that exhibit the most significant pattern of resource effects. The income and married family coefficients are negative and significant – that is lower incomes and not married families are more likely to be moving within minority areas. The mean income for movement within majority minority areas for black households is nearly 51 percent less than for those households who move to areas which are more than 50 percent white. Ownership and married households have the same differences (Table 8).

The Hispanic model is significant overall, but the individual variables do not distinguish between movements within largely minority and majority white areas. There are large differences in mean income for those households who move within minority areas and those who move to areas which are less minority. Education and ownership also reveal large differences. Still, the small n for the Hispanic sample makes it difficult to provide any sure conclusions from the variables.

The evidence from the logit and multinomial models on sorting and selection provide confirmation that resources do matter in the selections that occur, but the lack of stronger model fit emphasizes the overall complexity of sorting and selection by race and ethnicity. The implication is that hidden hand of preferences underlies much of the choice and selection that we see in the matrix. Clearly economics and status matter, and the fact that more than a third of all African-American households were able to move into or within majority white areas suggests that we treat with caution the notion that structural

forces are limiting the opportunities for African American households. Almost certainly for some African American households discriminatory factors are still playing a role but to argue that money does not matter is not supported by this research.

Findings – status choices across neighborhoods

Mobility and socio economic sorting

As expected there are marked differences by race and ethnicity across the neighborhoods by status (Tables 9 and 10). In 2001 more than half of white households are in the two top status neighborhoods but only 12 percent of African Americans. The reverse image, between the top and bottom status neighborhoods, for Blacks and whites is stark. Hispanic households have a similar pattern in 2001 but what is notable is the change by 2005 when Hispanics have an 11 percent decrease in the lowest neighborhood category in the five year period. Overall, a large number of Hispanic households moved "up" over this short time period. There was modest change in the Black distribution.

Again as expected status destination choices differ by race and ethnicity (Table 11). While nearly 50% of whites have a destination in the two highest socioeconomic status categories, African Americans with 14% and Hispanics with 23% have much lower proportions choosing and sorting into high status neighborhoods. The real contrast is between the 49.3% whites who sort into the two highest status areas while nearly 73% of African-Americans sort into the two lowest socioeconomic categories. It is this contrast in destination outcomes for white and African American households, that often generates the issue of equality of access. At first sight, this might suggest that there is little upward status movement for African Americans. However, in fact, a larger proportion of the selection in the lowest status neighborhoods is the outcome of the one-third of all African Americans who are in the lowest category and stay within that when they move. A white household in the lowest SES category has about a 70 percent chance of moving up and a Hispanic household has a 42 percent chance, the same African American household has a 33 percent chance of moving up in status. Still that a third of African American household and forty percent of Hispanics can make this change is again support for the argument that African Americans and Hispanics are making gains when they move.

There is more dispersion across the matrix of moves by the socio economic status of the neighborhood than we observed across the racial and ethnic dimensions. Even so, there is still strong selection along the diagonal which confirms our arguments throughout the paper that selection or sorting is very much an affirmation of choice within similar areas. Overall, if we include movement on the diagonal and in the categories immediately adjacent to the diagonal there is substantial evidence which further emphasizes the tendency to reinforce current patterns in the residential mosaic. About 45% of whites move on the diagonal while 50 percent of Hispanics and more than 50% of blacks do so. All groups are likely to make gains and socioeconomic status with their moves. Nearly 31% all whites and 30% of Hispanics made gains in status with moves during the period being studied. In contrast, 26% of African-Americans were able to make upward moves (Figure 2).

To explore the variable associations with the choice and sorting that we observe in the matrix, we construct a series of multinomial logit models similar to those that we used for the analysis of racial and ethnic choices. Again, we examine moves above and below the diagonal with the diagonal as the reference category. In addition to examining the choices by whites, African-Americans and Hispanics separately we also examine total moves and introduce race as an explanatory variable.

Multinomial models of socio-economic choice

The model of choices by all groups aggregated is significant (Table 12). Education professional occupations, ownership and being black, are significant explanatory variables for choices above or below the diagonal. Recall that the choice below the diagonal in these matrices is a rise in socioeconomic status, while choosing above the diagonal is a step down in socioeconomic status. Education is important for choices, both above and below the diagonal; the coefficient is much stronger for choices which generate gains in socioeconomic status. Being an owner clearly brings gains in socio economic status while the negative coefficient associated with choices for lower status areas suggests that it is renters who are moving steps down in status. The African-

American coefficient is large and significant for movement down the socio-economic status hierarchy. That is, *controlling* for income, education, occupation, marital status and ownership there is still in effect of being African-American on the ability to make choices within the socioeconomic matrix. Thus, we cannot conclude that it is only resources which are associated with movement across neighborhoods by status. It is here that we can invoke the role of preferences or structural factors in the choices by African Americans. That it may be structural or preferences in combination with income is emphasized by the lack of significance of being Hispanic in the choices across the matrix of neighborhoods.

Choices and selections by white households are significantly related to professional status and ownership (Table 13). Again, the large negative coefficient for ownership emphasizes the choices by renters who are likely to be choosing lower status areas. It is the outcomes for African American households which are of particular interest with respect to the sorting process. Is it simply race or is there a significant socio-economic association with the selections by African American households. The argument for resources appears to be supported from the multinomial estimates (Table 14). The coefficients for income and ownership are large and significant. Additionally, they are much larger for moves which brought more gains in status than for moves to low status areas. The significant coefficient for gains is balanced by a negative coefficient, though not significant, for movement to lower status areas. The model for Hispanics, as in the case for choices by race and ethnicity is not significant (Table 15). Still, there are hints within the maximum likelihood estimates of the role of education in securing gains in status.

These results provide a certain level of confidence that resources matter in the sorting and destination choices that we observed across socioeconomic status. At the same time, the intersection of race and income appears to be determining at least some of the sorting for African American households. That Hispanic households do not have the same outcome suggests that race does play a role in the case of African-Americans. To

examine this in greater detail, we turn to some specific movements across the socioeconomic matrix.

The intersection of mobility, race and neighborhood status

We can provide greater detail on the intersection of race and resources by examining the choices of households in the initial highest and lowest status socioeconomic areas and their choices of new locations. The analysis plots the income for white and black households who move within the highest status areas and the moves of those who move within the lowest status area. We plot these outcomes for both black and white households (Figure 3).

Plainly income matters. Movements within the highest status areas, but either black or white households have incomes in the 80,000 -%100,000. In contrast movements within the lowest status areas have household incomes which range in the $35- $50,000 levels for white households and $25 -$30,000 for black households. Not only is income different across the categories of movement, ownership is also different. Ownership rates are in the 50% and above range for movements in the highest status areas and in the 10-30% for movements in the lower status areas. Owners prevail in high status areas and renters in lower status areas. Clearly income and ownership are related but they do define the most advantaged areas in the residential fabric.

These final results offer evidence of the important role of resources in residential choices. At the same time, it is fairly clear that this complex process involves more than simply income and the associated ability to buy into the homeowner market. As the data on racial and ethnic preferences showed households are still choosing areas which have significant proportions of similar neighbors. The two processes in combination, choosing like neighbors and choosing within the constraint of economic resources, reminds us of the continuing power of both status and preference in creating the residential mosaic.

Summary Observations

The paper began by posing three questions. What are the choices by whites, African-Americans and Hispanic households within the residential structure? To what

extent does the choice and sorting reinforce the current patterns of ethnic and racial separation and the separation by socioeconomic status? And, what is the association of income and status with the choices? The findings from this research on selectivity and sorting across neighborhoods can be summarized simply. There are strong tendencies in choice and sorting which reinforce existing patterns of separation in the residential mosaic, strong ethno centric preferences by race and ethnicity means that racial separation is likely to remain an important dimension of the residential mosaic, and socio-economic status combines with racial combinations to exacerbate the levels of separation in the urban fabric.

The evidence for the tendency to reinforce patterns comes from the robust probabilities of selection on the diagonal across race and ethnicity and socio economic status. At the same time it is clear that substantial numbers of movers are able to increase both their socio economic status and in the case of blacks and Hispanics their greater levels of integration – defined as living in white tracts. This occurs even when whites on average are likely to choose more white tracts. The models which explain choices especially for African American households emphasize the importance of resources in the choices for “more white and less minority” areas.

Race and ethnic choices of neighborhoods are similar to the origin neighborhoods and range between 58-78 percent depending on whether it is white, Black or Hispanic moves. Overall, blacks have a very high probability of originating in and remaining within the largest minority areas. Even though the sample is small the evidence from Hispanics is of considerable movement across the matrix of choices. It is Hispanics who choose the greatest variety of outcomes. Clearly the structure is not as constraining or Hispanics are willing to think outside their ethnic constraints or they can use their social networks more effectively to move to higher status neighborhoods.

Socio economic choices are more dispersed than those by race and ethnicity. At the same time the majority of the choices are on the diagonal or on the steps in close association with the diagonal. When we examine a model of all moves while income is a

critical variable in the sorting outcomes, race plays a role for African Americans after controlling for income. We cannot say whether this is all a function of preferences or some combination of preferences and other structural factors.

In the context of understanding neighborhoods this paper argues that sorting within the existing fabric is the most powerful factor in understanding the process of neighborhood formation and neighborhood change. Neighborhoods do change as we know from the shifts in location of majority and minority populations. Those changes occur as households make selections based on race and socio economic status and they do not always choose the same neighborhood type as their origin type. It is that change which in the end changes the distribution of compositions across the urban fabric.

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Table 1: Residence by Neighborhood Type in 2001

Percent Distribution Across Neighborhood Type

Neighborhood Percent White	White	Black	Asian	Hispanic	Other
0- 30	2.5	49.0	18.7	59.2	22.8
30- 50	3.8	17.2	19.6	18.3	12.1
50- 70	10.0	17.3	21.4	9.9	18.1
70-100	81.8	15.3	38.4	9.9	42.3
No data	1.3	1.3	1.7	2.7	4.7
N	4422	2253	112	333	149

Table 2: Residence by Neighborhood Type in 2005

Percent Distribution Across Neighborhood Type

Neighborhood Percent White	White	Black	Asian	Hispanic	Other
0- 30	2.2	46.6	20.9	46.8	17.4
30- 50	3.2	17.6	21.7	18.7	16.7
50- 70	10.0	16.9	18.3	12.7	14.0
70-100	83.8	18.7	38.3	21.1	50.0
No data	.9	.2	.9	.7	0
N	4521	2634	115	577	149

Table 3: Destination choices for all movers 1999-2005 by current Neighborhood Type

Percent Distribution Across Neighborhood Type

Neighborhood Percent White	White	Black	Hispanic
0- 30	3.4	46.6	36.6
30- 50	4.5	16.5	22.5
50- 70	11.1	16.7	17.8
70-100	81.0	20.2	23.0
N	2020	1285	191

Table 4: Multinomial models for White Selectivity within the Mobility matrix (the diagonal is the reference category).

(a) Variable coefficients

Variable	Chi square	Pr >Chi square
Intercept	161.68	<.0001
Household income	.13	.9352
Some college/college	14.56	**.0007**
Married family	4.53	.1037
Professional/manager	2.32	.3128
Owner	2.63	.2684
Age	.97	.6164

(b) Maximum likelihood estimates for estimates above (1) and below (2) the diagonal (reference category)

Variable		Estimate	Chi square	Pr> Chi square
Intercept	1	-2.07	93.07	<.0001
	2	-2.13	88.89	<.0001
Household Income	1	1.15E-7	.03	.8702
	2	-3.13E-7	.09	.7590
Some College/college	1	.52	13.55	**.0002**
	2	.23	2.18	.1399
Married family	1	-.29	3.56	.0593
	2	-.20	1.47	.2260
Professional/manager	1	.26	2.29	.1300
	2	.08	.15	.7017
Owner	1	-.04	.08	.7806
	2	-.28	2.62	.1052
Age	1	.00	.12	.7272
	2	.01	.92	.3381

Table 5: Multinomial models for Black Selectivity within the Mobility matrix (the diagonal is the reference category).

(a) Variable coefficients

Variable	Chi square	Pr >Chi square
Intercept	30.38	<.0001
Household income	9.16	**.0103**
Some college/college	.52	.7707
Married family	.46	.7693
Professional/manager	.96	.6186
Owner	6.73	**.0346**
Age	3.26	.1963

(b) Maximum likelihood estimates for estimates above (1) and below (2) the diagonal (reference category)

Variable		Estimate	Chi square	Pr>Chi square
Intercept	1	-1.25	25.41	<.0001
	2	-.94	11.52	.0007
Household Income	1	6.82E-6	7.47	**.0063**
	2	6.74E-6	5.55	**.0185**
Some College/college	1	.10	.44	.5062
	2	-.02	.01	.9215
Married family	1	.09	.26	.6102
	2	-.06	.08	.7774
Professional/manager	1	-.18	.46	.4983
	2	.14	.25	.6127
Owner	1	.28	2.33	.1272
	2	-.38	2.61	.1059
Age	1	-.00	.04	.8448
	2	-.01	3.21	.0732

Table 6: Multinomial models for Hispanic Selectivity within the Mobility matrix (the diagonal is the reference category).

(a) Variable tests

Variable	Chi square	Pr >Chi square
Intercept	1.68	.4317
Household income	.56	.7556
Some college/college	4.27	.1182
Married family	.94	.6238
Professional/manager	3.43	.1798
Owner	3.14	.2081
Age	1.62	.4458

(b) Maximum likelihood estimates for estimates above (1) and below (2) the diagonal (reference category)

Variable		Estimate	Chi square	Pr>Chi square
Intercept	1	-.82	1.64	.2009
	2	-.39	.28	.5947
Household Income	1	-2.92E-6	.28	.5981
	2	-4.81E-6	.44	.5094
Some College/college	1	.76	2.97	**.0850**
	2	.88	2.83	.0927
Married family	1	.09	.05	.8275
	2	-.39	.72	.3966
Professional/manager	1	1.10	2.75	**.0974**
	2	1.21	2.29	.1305
Owner	1	.62	2.38	.1231
	2	-.21	.16	.6878
Age	1	-.01	.56	.4531
	2	-.02	1.37	.2426

Table 7: Logit models of majority own-race selection versus 50% Other race/ethnicity

White

Variable	Estimate	Chi- square	Pr>Chi square
Intercept	2.10	36.82	<.001
Household Income	9.42E-8	.00	.9544
Some college/college	.32	1.57	.2109
Married family	.79	8.27	**.0040**
Professional/manager	-.05	.03	.8736
Owner	.01	.00	.9853
Age	.01	1.62	.2037

Likelihood Ration 15.15 Pr>Chi square **.019**
Somers D = .26
Gamma = .27

Black

Variable	Estimate	Chi- square	Pr>Chi square
Intercept	.21	.58	.4454
Household Income	-6.49E-6	4.74	**.0295**
Some college/college	-.04	.06	.8067
Married family	-.88	18.65	**<.0001**
Professional/manager	-.11	.15	.6975
Owner	-.27	1.46	.2277
Age	.02	8.34	**.0039**

Likelihood Ratio 64.51 Pr>Chi square <**.001**
Somers D = .31
Gamma = .31

Hispanic

Variable	Estimate	Chi- square	Pr>Chi square
Intercept	-.76	1.02	.3131
Household Income	-5.33E-6	.70	.4022
Some college/college	-.91	2.17	.1407
Married family	.64	1.61	.2046
Professional/manager	-1.29	1.15	.2846
Owner	-.81	2.26	.1327
Age	.03	3.52	**.0607**

Likelihood Ratio 16.97 Pr>Chi square **.009**
Somers D = .43
Gamma = .43

Table 8: Differences across variables by neighborhood choice and race/ethnicity

Variable		White	*Black	*Hispanic
Income (mean $)	(1)	69,112	27,869	37,635
	(0)	55,700	42,068	56,239
College (%)	(1)	39.1	25.9	11.5
	(0)	30.7	30.4	28.2
Married/family (%)	(1)	50.7	15.3	61.5
	(0)	30.7	36.6	58.7
Professional/Manager (%)	(1)	19.7	6.2	1.9
	(0)	17.3	10.2	15.2
Owner (%)	(1)	47.1	13.6	23.1
	(0)	37.3	25.1	45.7

*Recall that Black and Hispanic logits use 1 for majority minority tract choices, as whites have 1 for choices of majority white.

Table 9: Residence by Socio Economic Status of the Neighborhood in 2001

	Percent Distribution Across Neighborhood Type				
Neighborhood SES status	White	Black	Asian	Hispanic	Other
1	26.1	3.7	44.5	5.6	10.6
2	28.1	8.4	15.5	10.2	20.4
3	25.5	15.9	10.0	17.0	23.9
4	15.2	30.2	19.1	23.5	23.2
5	5.0	41.8	10.9	43.8	20.8
N	4332	2226	110	324	142

Table 10: Residence by Socio Economic Status of the Neighborhood in 2005

	Percent Distribution Across Neighborhood Type				
Neighborhood SES Status	White	Black	Asian	Hispanic	Other
1	27.1	5.4	43.9	9.8	22.1
2	28.4	9.1	7.0	13.4	19.5
3	25.0	16.6	19.3	19.7	23.0
4	13.7	26.7	19.3	26.0	17.7
5	5.4	42.2	10.5	31.1	17.7
N	4484	2628	114	573	113

Table 11: Destination choices for movers 1999-2005 by current Neighborhood SES status

	Percent Distribution Across Neighborhood Type		
Neighborhood SES Status	White	Black	Hispanic
1	23.1	4.8	8.9
2	26.2	9.3	14.1
3	25.7	13.2	23.6
4	17.2	27.0	27.7
5	7.8	45.7	25.7
N	2020	1285	191

Table 12: Multinomial models of Selectivity for all movers within and across the Mobility matrix (the diagonal is the reference category).

(a) Maximum likelihood analysis of variance

Variable	Chi square	Pr >Chi square
Intercept	24.56	.0001
Household income	.17	.9181
Some college/college	9.96	**.0079**
Married family	.16	.9251
Professional/manager	12.70	**.0017**
Owner	37.63	**.0001**
Age	3.11	.2117
Black	15.68	**.0004**
Hispanic	1.05	.5914

(b) Maximum likelihood estimates for Multinomial variables (2- loss in status) and below (1- gain in status). The diagonal is the reference category.

Variable		Estimate	Chi square	Pr> Chi square
Intercept	1	-.52	14.53	.0001
	2	-.62	18.43	<.0001
Household Income	1	1.09E-7	.04	.8495
	2	2.58E-7	.17	.6794
Some College/college	1	.25	8.79	**.0030**
	2	.18	3.86	**.0495**
Married family	1	-.02	.04	.8451
	2	.02	.06	.8017
Professional/manager	1	.35	8.69	**.0032**
	2	.39	9.34	**.0022**
Owner	1	.33	12.13	**.0005**
	2	-.38	12.11	**.0005**
Age	1	-.01	2.71	.1000
	2	.00	.00	.9627
Black	1	-.17	3.39	.0657
	2	-.38	15.34	**<.0001**
Hispanic	1	-.01	.00	.9517
	2	-.19	.97	.3252

Table 13: Multinomial models of Selectivity for White movers within and across the Mobility matrix (the diagonal is the reference category).

(a) Maximum likelihood analysis of variance

Variable	Chi square	Pr >Chi square
Intercept	11.82	.0027
Household income	.48	.7872
Some college/college	4.00	.1352
Married family	4.03	.1330
Professional/manager	8.33	**.0155**
Owner	22.17	**<.0001**
Age	1.82	.4019

(c) Maximum likelihood estimates for Multinomial variables (2- loss in status) and below (1- gain in status). The diagonal is the reference category.

Variable		Estimate	Chi square	Pr> Chi square
Intercept	1	-.34	4.48	.0342
	2	-.56	10.91	.0010
Household Income	1	-3.97E-7	.41	.5243
	2	1.74E-8	.00	.9775
Some College/college	1	.19	3.04	.0811
	2	.18	2.49	.1149
Married family	1	-.23	4.01	**.0452**
	2	-.08	.38	.5002
Professional/manager	1	.34	6.33	**.0119**
	2	.34	5.50	**.0190**
Owner	1	.24	3.93	**.0475**
	2	-.42	10.37	**.0013**
Age	1	-.01	1.30	.2533
	2	-.00	.06	.7989

Table 14: Multinomial models of Selectivity for Black movers within and across the Mobility matrix (the diagonal is the reference category).

(b) Maximum likelihood analysis of variance

Variable	Chi square	Pr >Chi square
Intercept	34.79	<.0001
Household income	16.87	**.0002**
Some college/college	3.85	.1455
Married family	.99	.6108
Professional/manager	3.38	.1848
Owner	10.40	**.0055**
Age	.13	.9380

(b) Maximum likelihood estimates for Multinomial variables (2- loss in status) and below (1- gain in status). The diagonal is the reference category.

Variable		Estimate	Chi square	Pr>Chi square
Intercept	1	-1.26	25.74	<.0001
	2	-1.13	19.00	<.0001
Household Income	1	1.10E-4	16.84	**<.0001**
	2	6.14E-6	4.02	**.0451**
Some College/college	1	.28	3.54	**.0598**
	2	.02	.01	.9291
Married family	1	.16	.80	.3702
	2	.14	.51	.4754
Professional/manager	1	.41	2.72	.0993
	2	.40	2.00	.1573
Owner	1	.37	4.28	**.0387**
	2	-.37	2.64	.1040
Age	1	-.01	.13	.7212
	2	-7.7E-3	.02	.9006

Table 15: Multinomial models of Selectivity for Hispanic movers within and across the Mobility matrix (the diagonal is the reference category).

(c) Maximum likelihood analysis of variance

Variable	Chi square	Pr >Chi square
Intercept	1.66	.4351
Household income	.80	.6719
Some college/college	4.48	.1067
Married family	.23	.8892
Professional/manager	3.32	.1901
Owner	2.27	.3208
	4.43	.1089

(b) Maximum likelihood estimates for Multinomial variables (2- loss in status) and below (1- gain in status). The diagonal is the reference category.

Variable		Estimate	Chi square	Pr>Chi square
Intercept	1	.15	.06	.8110
	2	-.76	1.26	.2615
Household Income	1	4.14E-6	.66	.4156
	2	9.81E-8	.00	.9874
Some College/college	1	.43	.87	.3497
	2	1.01	4.48	**.0344**
Married family	1	.15	.14	.7102
	2	-.07	.03	.8717
Professional/manager	1	.49	.47	.4947
	2	1.32	3.18	.0744
Owner	1	.34	.75	.3559
	2	-.41	.72	.3871
Age	1	-.03	4.43	**.0354**
	2	-.01	.22	.6300

Figure 1: Moves across neighborhoods codes by ethnic/racial characteristics

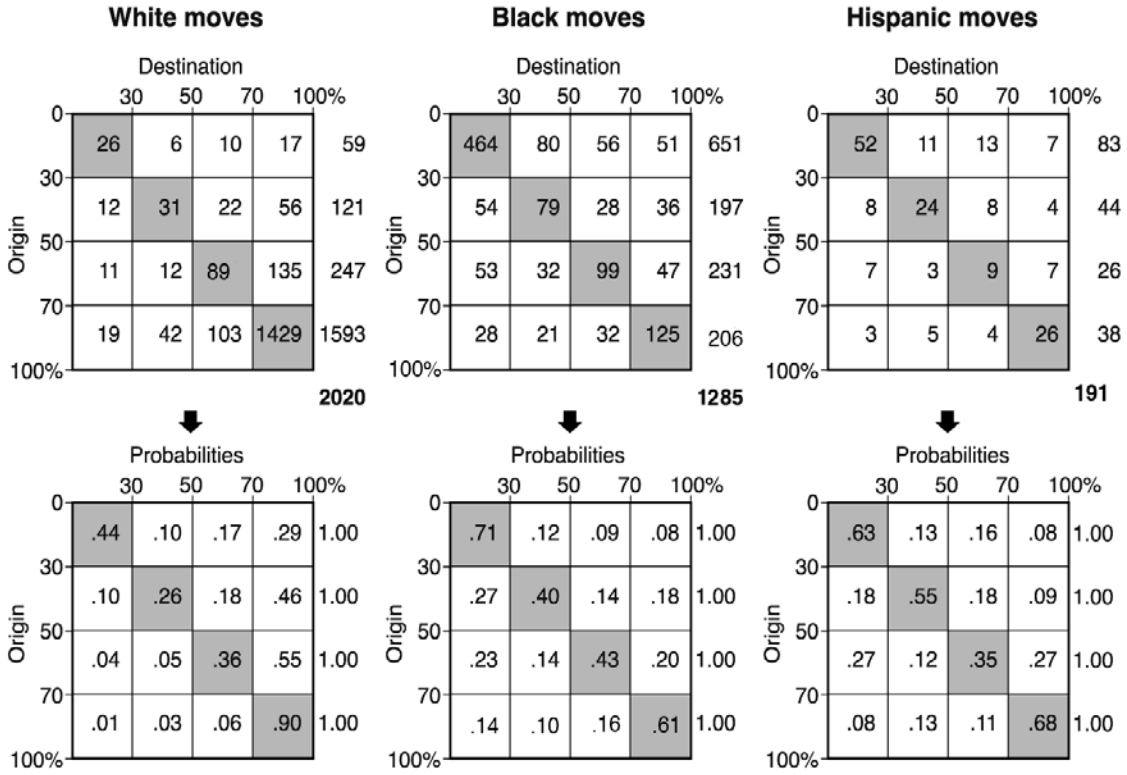


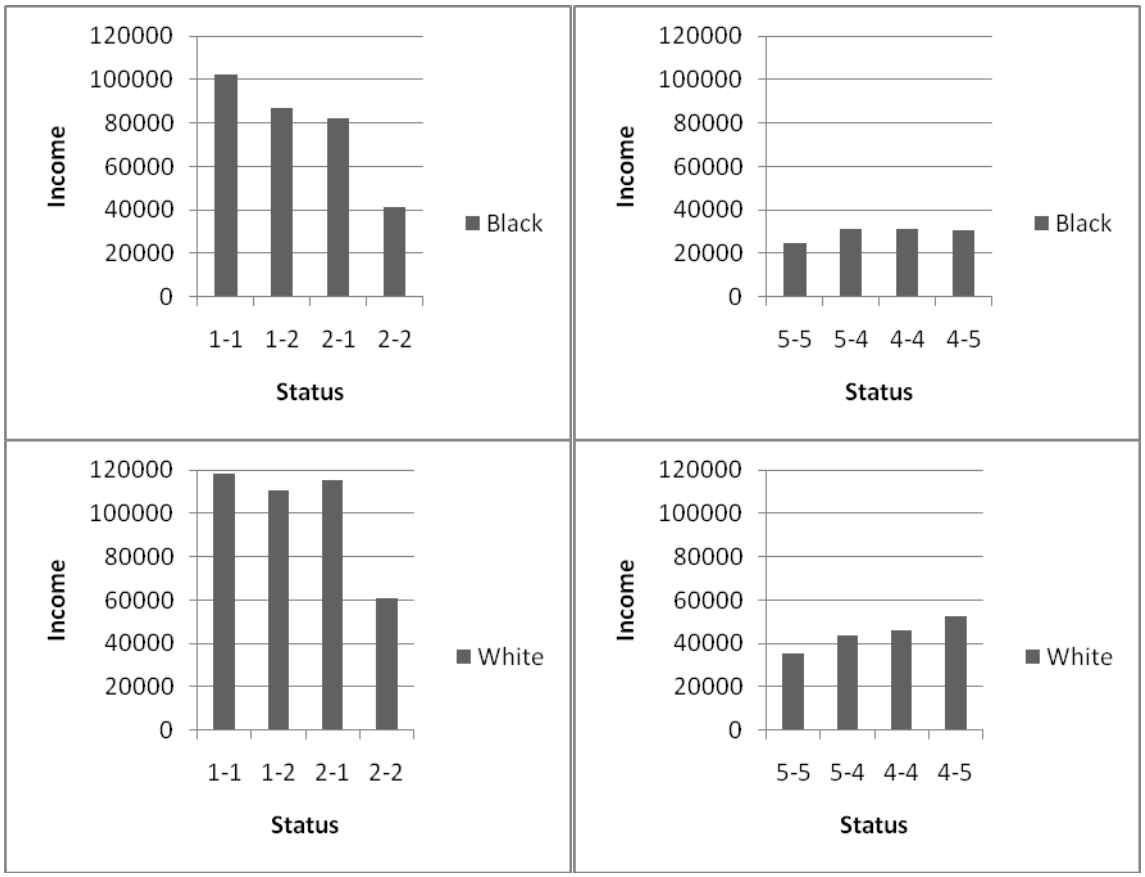
Figure 2: Moves across neighborhoods coded by Socio-economic status

Transitions Across Socio-economic Status (white)					
SES	**1**	**2**	**3**	**4**	**5**
1	233	93	52	46	7
2	93	219	84	51	31
3	63	115	258	73	28
4	61	79	88	147	35
5	26	23	38	31	56
Probabilities					
SES	**1**	**2**	**3**	**4**	**5**
1	0.53	0.22	0.12	0.11	0.02
2	0.19	0.46	0.18	0.11	0.06
3	0.12	0.21	0.48	0.14	0.05
4	0.15	0.19	0.21	0.36	0.09
5	0.15	0.13	0.22	0.18	0.32

Transitions Across Socio-economic Status (black)					
SES	**1**	**2**	**3**	**4**	**5**
1	12	2	5	1	8
2	17	37	18	18	13
3	8	22	55	48	34
4	17	25	49	165	116
5	8	34	42	115	416
Probabilities					
SES	**1**	**2**	**3**	**4**	**5**
1	0.43	0.07	0.18	0.04	0.29
2	0.17	0.36	0.18	0.17	0.13
3	0.05	0.13	0.33	0.29	0.20
4	0.05	0.07	0.13	0.44	0.31
5	0.01	0.06	0.07	0.19	0.68

Transitions Across Socio-economic Status (Hispanic)					
SES	**1**	**2**	**3**	**4**	**5**
1	5	3	2	2	0
2	3	8	7	7	1
3	1	3	20	7	5
4	4	6	10	25	7
5	4	7	6	12	36
Probabilities					
SES	**1**	**2**	**3**	**4**	**5**
1	0.42	0.25	0.17	0.17	0.00
2	0.12	0.31	0.27	0.27	0.04
3	0.03	0.08	0.56	0.19	0.14
4	0.08	0.12	0.19	0.48	0.13
5	0.06	0.11	0.09	0.18	0.55

Figure 3: Moves within the two highest and two lowest SES neighborhoods by income



Note: 1-1 indicates a move within the highest SES category, 1-2 is a move one step down and so on.