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Neighborhood Race and Nearby Race Affects Neighborhood Changes in Relative Status and Stability: Testing an Ecological Extension of the Neighborhood Projection Thesis

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Abstract

Current work tests an ecological extension of Ellen's (2000a) neighborhood projection thesis which explains individual-level moving behavior in response to neighborhood racial composition. It posits that residents anticipate future erosions in local services and amenities based on current and expected future racial composition. The ecological extension tested here anticipates declines in relative neighborhood status and neighborhood residential stability where the population is more predominantly African American initially, or becomes more African American over a decade, or is initially surrounded by more predominantly African American neighborhoods. All three of these race effects have generated mixed results in earlier studies. Looking at a decade of change (1990 to 2000) for two mid-Atlantic central cities (Baltimore (MD) and Philadelphia (PA)), results in both cities confirmed that relative status was more likely to decline if adjoining neighborhoods were more predominantly African American initially, or if the neighborhood was becoming more predominantly African American during the period. The impacts of racial composition on stability changes were neither uniform across cities nor uniformly adverse. At least for neighborhood changes in status, results support the proposed extension of Ellen's model to the neighborhood level, and underscored the spatial externalities arising from nearby populations of color.

Keywords

neighborhood change, neighborhood projection thesis, Baltimore, Philadelphia

1. Introduction

Understanding the causes of neighborhood change is perhaps one of the most theoretically challenging and practically important topics in urban studies. Neighborhoods host and support a broad array of

economic (Miller, 1981), social (Suttles, 1968), psychological (Hunter, 1974b, 1976), political (Ferman, 1996; Hallman, 1984) and emotional functions (Fried, 1984, 1986) for residents, summarized under use value; and a number of economic and political benefits for outsiders, summarized under exchange value (Logan & Molotch, 1987). Their importance notwithstanding, urban scholars lament, even recently, that "how neighborhood conditions change are poorly understood empirically" (Galster, Cutsinger, & Lim, 2007, p. 167). Focusing primarily on neighborhood demographic structural change, three domains receiving considerable attention have been shifts in status, residential stability, and racial composition.

The current work investigates how the last of these, racial composition, in and near the neighborhood in question, influences changes in the first two, status and residential stability. The theoretical framework used is an ecological extension of the neighborhood projection thesis (I. G. Ellen, 2000a). It is expanded in two ways: by suggesting that analogous ecological processes may operate at the small-scale community level, and by considering the relevance of racial composition in immediately adjoining locales. The next section reviews some of the most relevant work on status and stability changes, with a brief comment on racial changes. Then the neighborhood projection thesis is reviewed at more length. The section closes with a summary statement of the model.

The work on neighborhood change is vast (Schwirian, 1983; Schwirian & Mesch, 1993). Models used to describe and explain these changes include, among others, the human ecological model, in classical and neoclassical form, and the life cycle stage model of neighborhood development. "The two models have come to be used in a complementary fashion. Researchers now often describe neighborhood movement through the life cycle as a series of invasion-succession cycles" (Schwirian, 1983, p. 92). As neighborhoods decline, these cycles lead to progressively lower status and stability levels; as they are gentrifying or revitalizing, these cycles should lead to progressively higher status but not necessarily higher stability levels. More recent models emphasize the importance of local context as a driver of ecological changes (Molotch, Freudenburg, & Paulsen, 2000), and impacts of change patterns on broader urban inequality (Hwang & Sampson, 2014).

1.1 Status Changes

Turning specifically to the work on status change, data from Chicago have shown, as the life cycle model anticipates, that as housing ages, status, as indicated by education, occupational status and income (Choldin & Hanson, 1982), first increases then declines. The authors concluded "the neighborhood life cycle is still a valid model" (p. 138). Suburban communities experience shifts in status too, and those shifts conform with aging of the housing stock (Choldin, Hanson, & Bohrer, 1980) Others suggest, however, changes in suburban status are driven more by population growth than housing age (Guest, 1978). This work on status changes also shows a broader status differentiation between city and suburban neighborhoods growing during the middle decades of the last century (Choldin et al., 1980).

Status and racial attributes intersect, but in complicated ways. The individual-level processes described

by the neighborhood projection process will be outlined further below.

Nevertheless, focusing just on the ecological work presents a confusing picture. Some suggest no relationship between the two changes (Taueber & Taueber, 1965). Choldin and Hanson (1982) in their study of Chicago community areas found a positive lagged effect of 1940 percent Black on 1950-1960 status changes, but no effect of 1950 percent Black on 1960-1970 status change. They temporally lagged the effect of race on status, "on the assumption that the social status does not change instantly in response to one of the area's conditions, but that there is some interval after which the cumulative effects of moves within the metropolitan housing market are measurable" (p. 136). Since these authors were considering extremely large community units, Chicago's 75 natural areas, assuming such a temporal lag makes sense.

If the focus is on smaller spatial units, however, as it will be here, then lagged effects of beginning of the decade race on status changes during the decade seem plausible. With smaller spatial units being used to define neighborhood, all else equal, residents will be more aware of local and nearby changes. Further, with smaller units one might expect that racial and status shifts would be able to take place concurrently. This expectation, as will be explained below, is in line the neighborhood projection thesis's linking of moving and concurrent racial changes.

A lagged effect of beginning of the decade race on later declines in employment and income in New Orleans census block groups was anticipated by Baxter and Lauria (2000). They reasoned that the increasing spatial deconcentration of jobs available to unskilled or less educated workers, who were primarily African-American in that locale at that time, would most adversely affect that group (Baxter & Lauria, 2000). Further, initial African-American racial composition should adversely affect house values using a general decline model. But since African-Americans must pay higher prices to buy into a dual housing market (Taueber & Taueber, 1965), a positive impact also could emerge. Results showed a significant negative lagged impact of initial percent African-American on percent change in income, but a significant positive lagged impact of race on percent change in house values.

Whether these conflicting results about impacts of initial racial composition on later status changes arise from locational or period or operationalization differences (e.g., weighted percentiles vs. percent changes), or from overlooked threshold issues (Galster, Quercia, & Cortes, 2000) is not clear. Nonetheless, it seems fair to conclude that the question—what are the impacts of racial composition on later status changes?—is still an open one.

Racial composition nearby, just outside the neighborhood in question, also could be relevant to later status changes in a neighborhood. The responsible processes might arise from the local political economy, social psychological processes, or institutional processes blurring important neighborhood boundaries. These will be developed further below. Does the research suggest there is something going on here?

Cleveland census tract house price changes in the 1970s were not affected by having a somewhat integrated (10% or more nonwhite) neighboring tract (Schwab, 1987). By contrast, Chicago census

tract changes in income in the 1970s were influenced by both initial racial composition of the target and adjoining neighborhoods (Hartmann, 1987). Turning to an individual level outcome, whites moving out of a census tract, Crowder and South (2008) found that local and nearby non-white residential populations increased the chances of whites exiting a census tract. They also found that including extralocal racial composition accounted for some of the effects previously attributed to local racial composition. Whether tract-level relative status or residential stability was shifted in response to these moves was not addressed. Thus, with adjoining racial composition, as well as target racial composition, studies show varying impacts, suggesting the question is still an open one. The Crowder and South (2008) results suggest individual-level dynamics that might underpin ecological changes in status and/or stability in response to nearby racial composition.

Within the status change literature is another sizable literature on gentrification, the most dramatic example of reversing status decline (Beauregard, 1990; Zukin, 1987). Studies done at the city, MSA, and neighborhood levels have confirmed that gentrification is a complex process (Bourne, 1993). It is sensitive to a wide range of local economic, social, and cultural factors (DeGiovanni, 1983; Hamnett & Williams, 1980; Henig, 1982; London, 1992; London, Brdley, & Hudson, 1980). It is sometimes hard to separate from incumbent upgrading processes. In many instances the invasion-succession cycle will "stall" and neighborhoods will remain partially gentrified for decades as upper-income, homeowning households and lower-income, renting households both continue to move in (DeGiovanni & Paulson, 1984; Lee & Mergenhagen, 1984). Gentrification can drive up some local street crime rates (Covington & Taylor, 1989).Gentrification can sometimes result in African-American households being displaced by in-moving white households, but there are instances of gentrifying African-American neighborhoods as well as white ones (Zukin, 1987). Gentrification can worsen spatial inequality (Hwang & Sampson, 2014).

The gentrification literature considers racial and status changes from the "opposite" end of the socioeconomic spectrum. It suggests a future different from decline and re-segregation is possible for racially or ethnically mixed locales. Whereas under strong growth conditions the expectation is that mixed neighborhoods will eventually re-segregate as largely African-American (Taueber & Taueber, 1965) or Hispanic, and decline economically in the process, the gentrification work suggests the mixed neighborhoods could experience racial or ethnic reversals under some conditions.

For example, it appears that gentrification and racial reversal is more likely if the mixed neighborhood is closer to higher income, and/or more predominantly white locations, since gentrification is to some extent an agglomerative process, and local lending practices are likely to be sensitive to this (Holloway, 1998; Wyly & Hammel, 1999). This literature then provides a different rationale for an impact of status and adjoining status on both status change and stability change. It can arise because influential local institutions such as banks and real estate agents are sensitive to the status properties of locations immediately beyond the neighborhood in consideration. Therefore, nearby status as well as nearby racial composition could influence a target neighborhood's future status.

1.2 Residential Stability Changes

The second outcome of interest is stability change. There are reasons to expect initial and changing African-American population links either to increased or decreased stability.

Starting with the second possibility, initial predominance of an African-American population suggests the neighborhood already may have resegregated or be in the process of re-segregation. Many presume that re-segregation, due to local service differentials and how outside institutions view future neighborhood prospects (Logan & Molotch 1987; Wilson, 1996), will be associated with housing filtering down or filtering down faster. Therefore, owner to rental and rental to abandoned property conversions are more likely. Re-segregation according to this view portends further decline.

Yet an alternative process could be at work. Recent work shows the probability of mortgages being made to potential African-American homeowners reflects neighborhood racial makeup (Holloway, 1998). Loan application denial for African-American mortgage seekers in Columbus (OH) was geographically dependent. The impact of such practices would seem to be increasing residential segregation over the long run. For the current analyses the implication is that a neighborhood that is more predominantly African-American initially, or that is increasingly African-American during the period, may be more likely to experience increasing homeownership. This presumes low white demand to buy houses in these neighborhoods, decent housing quality in surrounding locales, and a significant volume of African-American mortgage seekers. The sizable decreases in the white populations in both Baltimore and Philadelphia during the 1990s would seem to support at least the first presumption (Note 1).

The model tested will examine not only the impacts of target neighborhood initial racial composition on stability changes, but also the effects of adjoining racial composition. Although gentrification can create sharp “edges” between revitalizing and decaying areas, the number of gentrifying neighborhoods in most cities is not sizable and lenders themselves may have a less spatially differentiated, less detailed understanding of local racial composition that blends both the target and adjoining neighborhoods.

A brief word is in order regarding the importance of residential stability change as an outcome. The indicator used considers both the portion of owner occupied households, and the portion of households living there for at least five years. Homeownership and longer tenancy in general produce a wide range of social and cultural benefits for a neighborhood (Bursik & Grasmick, 2003; Dietz & Haurin, 2003; Huarin, Dietz, & Weinberg, 2003). These are especially important given broader concerns about connections between demographics and social problems.

Considering both outcomes, a positive correlation between the residuals for each seems likely; unexplained increases in status may link to unexpected increases in stability. Gains or speedier gains in homeownership portend a reversing with the neighborhood going back “up” the Hoover and Vernon (1959) stages of decline and thus increases in status. Slower or less marked increases in homeownership may suggest slower transitions “down” the stages of decline. The correlation between residuals seems plausible and at the least needs to be considered in the choice of analytic model.

1.3 Race

Turning to race, although the model assessed uses race factors as predictors, comment is merited on conclusions from the racial change and segregation literatures.

Neighborhoods are likely to re-segregate African-American once they move beyond an initial racial fraction, but this pathway no longer seems as inevitable as it did in the middle of the last century (Lee & Wood, 1991). This may be due in part to the decreasing population pressures in large, older cities (Note 2). Those pressures around mid-century were a function of initially massive explosions in African-American housing demand following civil rights legislation (Ottensmann & Gleeson, 1992); speedy growth in suburbs close to core cities, and white fears fueled by recent riots spurring a core city exodus during the fifth through seventh decades of the last century. Overall segregation seems to have started decreasing in the 1980s (Clark & Ware, 1997; Farley & Frey, 1994) and that trend has continued into the 1990s (Iceland, 2004).The degree of segregation, however, may depend on which specific racial groups are being considered (Ko, 1992).

Current work points to factors which may maintain stable integrated neighborhoods over a multi-decade period (I. G. Ellen, 1998) or even reverse movement toward re-segregation (Lee, 1986), and casts doubt on the "tipping point" perspective (Galster, 1990). Rather, it suggests that different residents are differentially sensitive to current racial composition in their neighborhood, and that these differentials are partly a function of racial attitudes. A different strand of work, the neighborhood projection thesis, described below, suggests that it is not simply racial attitudes per se, but rather the expectations about future changes in both neighborhood amenities, such as school quality and local crime problems, and in neighborhood investment values, as reflected in house prices, which decrease whites' willingness to move into racially mixed neighborhoods, or which increase their willingness to leave these locales (I. G. Ellen, 2000a).

Work on racial change and segregation has expanded beyond the initial focus on African-Americans as the only population of color to include other racial/ethnic groups such as Hispanics and Asians (Ko, 1992), and even differences within each of those additional racial/ethnic groups (Alba, Denton, Leung, & Logan, 1995). It suggests that over time these other racial/ethnic groups are moving into less segregated spatial patterns more quickly than are African-Americans, but that these patterns vary by group, and by subgroups within broader categories.

Segregation vs. integration itself is an enormously deep literature (Charles, 2003), with considerable discussion around the processes tapped by different segregation indices (Massey & Denton, 1993), the various analytic merits of different indicators (Duncan & Duncan, 1954; White, 1983) different meanings of "integrated" (Smith, 1998), and the connections between segregation levels and changes in national, regional, and local economic, political, and cultural factors (e.g., Frey & Farley, 1996). (Note 3)

As already stated, the focus here will be demographic determinants of two neighborhood demographic changes over a decade: shifts in relative status, and shifts in relative residential stability. Of central

interest are initial racial characteristics not only of the target neighborhoods, but also of immediately adjoining neighborhoods. Adjoining neighborhoods are important because of racial concentration effects (Peterson & Krivo, 2010). Although the framework is explicitly demographic, it is recognized that local social, cultural, economic, and political factors contribute substantially to the changes investigated, and that individual level household moving and staying decisions are relevant as well.

1.4 Ellen's Thesis and Extensions

The current work builds on previous work by 1) ecologizing and 2) spatially extending Ellen's (2000a) neighborhood projection hypothesis. That hypothesis suggests that neighborhood racial changes arise from in-movers and out-movers being more or less willing to enter or depart a locale, and further that those intentions are driven in large part by the assumptions movers make about target neighborhood quality based on its racial composition.

> "Racial attitudes are relevant but not in the way people think; rather white households tend to assume that all mixed neighborhoods quickly and inevitably become predominantly black, and it is the discomfort they anticipate feeling in that environment that plays the more dominant role in residential decision making. This discomfort has two likely sources … fear of being left behind as a racial minority as their community becomes largely black … and more important, white households … have negative preconceptions about what an all black neighborhood will be like …[that it will] portend a deterioration in school quality, public safety, property values and other quality of life attributes." (I. G. Ellen, 2000a, p. 1514; see also I. G. Ellen, 2000b) (Note 4).

That model is extended and revised in the following ways. First, the dynamics she describes which affect racial change may be relevant to explaining relative shifts in status. House filtering theory (see below) suggests house prices and household income in a locale should decline relative to other neighborhoods if and as that locale becomes less desirable. Therefore the effects Ellen observed of changing racial composition on non-Hispanic whites' willingness to move also may link to declining status.

Second, whereas Ellen's work did not see impacts of initial racial composition (I. G. Ellen, 2000a: Table 4) such a connection is expected here. Here, the focus is on smaller sized neighborhoods, so residents are more fully exposed to local racial composition. In addition, in both cities studied here there are strong connections between racial composition and various social problem rates, ranging from crime (Lawton, Taylor, & Luongo, 2005) to STDs (J. M. Ellen, Jennings, Meyers, Chung, & Taylor, 2004). Of course, the "causes" of those links are open to argument. Thus, initial neighborhood racial composition, because local groups which include potential movers may link it to local problems, should have a lagged impact at least on changes in relative status.

The third change, borrowing from Schwab (1989), is to extend Ellen's model spatially. The shared inferences groups of residents may make about future neighborhood quality may emerge not only from the initial neighborhood racial composition and the subsequent changes therein, but also from the race

of *immediately adjoining* neighborhoods. A spatially lagged racial composition variable might adversely impact subsequent status shifts. Schwab (1989) has similarly predicted a spatially lagged impact, specifically on house values: "some homeowners may view proximity as a threat to the racial homogeneity of a neighborhood" (I. G. Ellen, 2000a, p. 146). Schwab did not expect, however, that concurrent racial changes would adversely affect house prices. Some have specified this idea in a more limited way, proposing that adjacent racial composition is significant to white owners holding segregationist attitudes (Galster, 1990). Crowder and South's (2008) work supports the reasoning here. They linked surrounding racial composition to individual level exit from a census tract. But their work did not gauge impact of surrounding racial composition on status and stability changes in the original tracts. Further, their operationalization of nearby racial composition was more spatially extended than will be used here. In this work, impacts of racial composition of immediately neighboring tracts are examined.

In addition to adjoining initial racial composition proving influential, spatially lagged status may prove relevant, albeit for different reasons. Local neighborhood-based improvement associations can sometimes be more effective at maintaining house values in higher status locales (Taylor, 2001, p. 355). It will be important to control for neighborhood or adjoining neighborhood status. Work on the neighborhood proxy hypothesis which suggests home owners, buyers, and sellers view local racial composition as a proxy for lower class problems, found the impacts of census tract racial composition on house values became non-significant after controlling for tract status indicators (Harris, 1999). The neighborhood proxy thesis would therefore expect target or adjoining race impacts on status change to disappear after controlling for status. But Ellen's (2000a) neighborhood projection thesis and the extensions proposed here refer to a broader set of dynamics so racial impacts should persist after status controls.

Fourth, the model is expanded to see if the same racial impacts surface when examining stability changes. Ellen (2000a) explicitly suggested those investing more in a neighborhood—owners as compared to renters—should be more responsive to these projected impacts. Therefore initial target neighborhood and spatially lagged racial composition, and target changes in race, may link to subsequent declines in neighborhood homeownership rates as owners are more willing to move out than renters and/or in-moving house buyers are more reluctant to enter than in-moving renters.

Finally, it is recognized that Ellen's thesis is individual level, about movements of owners and renters and that the current extension is to ecological dynamics (Taylor, 1997). Therefore, strictly speaking, the model extension amounts to proposing an extended ecological analog to her original model since variables at different levels of aggregation assess different constructs (Hannan, 1971). Nonetheless, the small spatial units examined here may reveal social psychological/micro-ecological dynamics which are a small-group analog to the individual-level dynamics she considered.

1.5 Summary Statement

Negative impacts on later changes in status in stability are expected for the initial racial composition of

the target neighborhoods, and the initial racial composition of neighborhoods adjoining each target neighborhood. Concurrently occurring racial change is also expected to affect these two outcomes, although with these changes a case can be made for either positive or negative impacts. The model builds on Ellen's (2000a) neighborhood projection thesis by: extending it to two broader dimensions of neighborhood change; ecologizing it and presuming that social psychological processes analogous to the individual-level dynamics she described are operating in small scale neighborhoods; and extending it spatially to presume that racial composition in immediately adjoining locations also may prove influential. Given mixed prior work on both lagged and adjoining race impacts, these expectations merit testing.

2. Setting, Data and Methods

2.1 Setting

Separate analyses were completed for two large cities of different sizes, Philadelphia (PA) and Baltimore (MD), both of which experienced significant racial change in the 1990s. These are both central cities in large metropolitan areas; they both continued to lose population during the 1990s; and they are both older, eastern industrial cities, with previously strong manufacturing bases. Further, in both cities the predominant population of color was African American. Table 1 provides some overview information for each city for the beginning and end of the decade. Each city contains the most sizable African American population in its respective state, and has the highest white-African American dissimilarity index for its respective state. "Racial segregation has always existed in Baltimore in a fine-grained pattern" (Olson, 1997, p. 372). High levels of white-African American segregation have been documented for Philadelphia as well (Massey, Condran, & Denton, 1987). Finally, both cities were familiar to the authors, permitting a locally grounded view of the changes that were observed.

Table 1 provides some global demographic information on each city at each point in time. During the 1990s each city lost population (-4.3 percent for Philadelphia, -11.5 percent for Baltimore). Each city lost a significant amount of white population during the period: 19.5 percent in Philadelphia, 28 percent in Baltimore. Whereas Philadelphia gained in African American population over the period by 2.8 percent, Baltimore's African American population declined by 3.9 percent. By 2000, both cities were highly segregated. Philadelphia's White-Black dissimilarity index was 80.6 and Baltimore's was 75.2 (Frey & Myers, 2007). (Note 5)

Table 1. Baltimore and Philadelphia in 1990 and 2000

	Philadelphia			Baltimore		
	1990	2000	Change	1990	2000	Change
Total population	1,585,577	1,517,550	-68,027	736,014	651,154	-84,860
One race: White	848,586	683,267	-165,319	287,753	205,982	-81,771
Percent White	53.52%	45.02%		39.10%	31.63%	
One race: African American	631,936	655,824	23,888	435,768	418,951	-16,817
Percent African American	39.86%	43.22%		59.21%	64.34%	
Percent other race	6.63%	11.76%		1.70%	4.03%	
Total housing units	674,899	661,958	-12,941	303,706	300,477	-3,229
Owner Occupied housing units	373,601	349,633	-23,968	134,424	129,869	-4,555
Percent Owner Occupied	55.36%	52.82%		44.26%	43.22%	
Renter Occupied housing units	299,474	240,438	-59,036	142,060	128,127	-13,933
Vacant housing units	71,824	71,877	53	27,222	42,481	15,259
Total households	603,075	589,846	-13,229	276,484	258,430	-18,054

Source. U.S. Census Bureau, American Factfinder (factfinder.census.gov)

2.2 Data Sources and Treatment

Data came from the 1990 and 2000 block group level Census data.1990 data recompiled or "normalized" by Geolytics into 2000 boundaries were used, so that each census block group was spatially equivalent at both points in time (Geolytics.com, 2004a, 2004b).

In Baltimore City there were 718 census block groups in this normalized data set. Census block groups with a 1990 or 2000 population of less than 25 individuals were eliminated, as were census block groups where 50% or more of the population resided in group quarters. The final N analyzed was 693.

In Philadelphia there were 1,816 census block groups in the normalized data set. 1,756 remained after eliminating those with either very low population counts (< 25) or where more than half the population was in group quarters.

2.3 Variables and Indicators

Factorial ecology approaches to urban neighborhoods have identified perennially persistent relatively independent dimensions of status, stability/familism, and race (Berry & Kasarda, 1977), although the exact structure of the stability/familism component and its connection to race has changed somewhat from decade to decade and city to city (Hunter, 1974a; Taylor & Covington, 1988). Indices were built to capture the status, stability, and one aspect of household structure: the relative prevalence of children vs. adults who might supervise them.

2.4 Status

Status was captured with the following indicators: median house value, median household income, percent of population 25 and above with a college education or more, and percent of households above the poverty line. In both 1990 and 2000 this index was quite internally consistent (Baltimore: Cronbach's alpha above .8 both times; Philadelphia: Cronbach's alpha = .82 both in 1990 and 2000). The index constructed was an average of the individual z scores.

2.5 Stability

The stability indicator was constructed using two indicators: the percent of owner occupied households, and the percent of households that had been at the same address five years previously. Internal consistency was sufficient for this index, given that it contained only two items (Baltimore: Cronbach's alpha = .69 in 1990, .72 in 2000; Philadelphia: .77 in 1990 and .76 in 2000). The index constructed was an average of the two percentages.

2.6 Household Structure

For 1990, principal components analyses replicated over random halves of the data in each city suggested one broad household structure dimension related to children and adults who might supervise them. This captured the presence of children and the relative lack of adult supervisors of teens and preteens, as indicated either through single parent households, single parent households in challenging economic circumstances, or the lack of adults aged fifty and higher, the latter representing the "old heads" in African American neighborhoods (Anderson, 2000). The following variables contributed: percent of the population aged 6 to 13, percent of the population aged 14 to 19; percent of households with children; percent of single parent households with children, percent of single parent households in poverty with children, and (–1 * the percent of population aged 50 and higher). Reliability coefficients (Cronbach's alpha) for 1990 were above .80 for both Baltimore and Philadelphia. Individual items were z scored, and the constructed index was an average of those z scores.

A stronger representation of young adults in their twenties could represent either adult children living at home, or young adults living on their own either working or completing undergraduate or graduate programs of study. The increased presence of such a group, and the associated lifestyles involving frequent moves, make homeownership and staying at one address for five years less likely. The percent of population aged 20-29 also was used as a single indicator.

2.7 Spatial Lag Variable Construction

GEODA generated spatially lagged versions of 1990 status and 1990 percent African American, taking account of all neighborhoods physically "touching" the target neighborhood, and averaging their scores.

2.8 Racial Change Construction

To capture co-occurring racial change, 2000 percent African-American was regressed on the corresponding 1990 variable, and the residuals saved (Bohrnstedt, 1969). The resulting scatter plots were checked for significant departures from linearity and for outliers.

2.9 Population Weighted Percentiles

Analyses were completed using population weighted percentiles (PWPs). Each neighborhood's score on a population weighted percentile indicates the fraction of the city's population at or below that specific score (Choldin et al., 1980; Covington & Taylor, 1989; Taylor & Covington, 1988). These are theoretically appropriate; they focus attention on the relative position of each neighborhood in each city's overall ecology. Further, the resulting b weights are readily interpretable, indicating the net impact of a one unit change on the predictor in terms of how far it moved the target in the weighted percentile rankings. Stated differently, each b weight indicates how far that variable moved the neighborhood outcome score relative to the population in the entire city. Figure A-1 (following (Choldin, et al., 1980)) in the online Appendix (Note 6), shows how the transformation to population weighted percentiles worked for Baltimore's status index. The transform "draws in" outliers at the upper and lower ends, and better spreads out scores in the middle of the distribution.

3. Results

3.1 Baltimore

Results for Baltimore census tracts appear in Table 2. As explained above, the residuals of status change and stability change were expected to be correlated, so seemingly unrelated regressions (SURE; Zellner, 1962) were used. These rely on generalized least squares (GLS) estimates that "even when normality is not present" yield "asymptotically normally distributed" coefficient estimates (Zellner, 1963, p. 988). Further, an advantage of SURE is that it is relatively robust to situations of moderate multicollinearity (Binkley & Nelson, 1988) (Note 7).

Model A simply entered each lagged predictor. The b weight reflects the impact of ongoing structural continuity during the 1990s. The R^2 reflects the degree of ecological continuity on that attribute between the beginning and end of the decade. The ecological instability ($1-R^2$) reflects the fraction of the 2000 outcome variance not explained by initial position or by city-wide changes taking place during the decade. The residual correlation reflects the degree to which these two unexpected changes in status and stability connect to one another.

Results showed that about three quarters of the city-wide variation in census block group status in 2000, and about half of the city-wide variation in census block group stability reflected ongoing ecological continuity, predictable from 1990 scores. The two unexpected changes over the decade in status and stability (residuals) correlated significantly.

Model B added initial (1990) target neighborhood structure, except for racial composition. Status drops were more likely for those neighborhoods with a stronger presence of children and a weaker presence of adult supervisors ($b = -.08$; $p < .001$). Turning to stability changes, lower initial status resulted in later stability drops ($b = -.09$; $p < .05$). If, as suspected, African-American first time home buyers were moving into slightly or somewhat African-American neighborhoods in the 1990s, this effect should diminish after adding race variables.

More young people in their twenties initially made later increases in stability less likely (b = -.11; p < .001). Given the lifestyles associated with this age group—student status, more frequent job shifts, increased chances of changes in household status—this connection seems plausible.

Model C added in two race effects associated with the target neighborhood: initial neighborhood racial composition, and later changes in racial composition. These changes in racial composition were taking place at the same time the outcomes were changing.

Both race variables showed significant depressive impacts on subsequent status changes (b = -.28, p < .001 for changing composition; b = -.12, p < .001 for initial composition). Co-occurring race shifts linked more strongly to status shifts than did initial racial composition. Together, a one percentile change on each of these two race variables accounted for about $4/10^{th}$ of a percentile drop in status. They suggest two dynamics either preventing status gains or accelerating status declines: an initial disadvantage arising from initial African American neighborhood composition, compounded by a cumulating disadvantage for neighborhoods becoming more African American during the 1990s.

Introducing the target neighborhood race variables does, as expected, reduce to about one quarter of its initial size and render non-significant the impact of children/no supervisors on subsequent status shifts (b = -.02).This confirms that racial composition and changes in that composition were correlated with this household structure effect. The impact of initial status remained largely unchanged (b = .78). The continuity component of the city's neighborhood status pattern was substantially independent of initial target neighborhood racial composition or later changes in that composition.

For stability impacts, Model C showed a different but expected pattern of race impacts. If the target neighborhood was initially more African-American, later stability was more likely to increase (b = .20; p < .001). This may reflect mortgage lenders pointing African-American homebuyers toward those places which were initially somewhat African-American, or it may reflect those house buyers and African-American long-term residents' predilection for neighborhoods where there already were some African-Americans. At the same time, there was an opposite effect of race changes. Increasing stability was less likely as the neighborhood increased its relative African-American composition. This makes sense given where these changes were happening in the city, and will be described further below. Although lenders may initially have pointed African-American house buyers toward neighborhoods which were somewhat African-American at the beginning of the period, and those buyers may have preferred those locales, as these places continued to change racially they may have become less attractive to long term residents and to lenders.

Model D looked at effects of surrounding race, rather than target race. It substituted the temporally lagged impact of adjoining racial composition for the two components of target neighborhood racial composition examined in Model C. (Because of the high correlation between target and spatially lagged neighborhood racial composition both could not be included in the same model.) (Note 8) The key question here was whether spatially and temporally lagged race replicated the impacts seen for target neighborhood racial composition. Were target neighborhood changes in status and stability changes

affected by nearby racial composition?

Model D showed, for the status outcome, that initial racial surround produced coefficients in the same direction and of comparable size to the impacts of initial target racial composition in Model C. In Model D, the initial racial surround affected only later status changes ($b = -.13$, $p < .001$). The coefficients for percent twenty-year-olds were closely comparable and significant in the two stability equations (Models C and D), and the coefficients for children/no supervisors were the same order of magnitude (.02, .04) in the two status equations (Models C and D). Most importantly when comparing models C and D, impacts of initial surrounding racial context closely mirrored the impacts of target neighborhood racial composition on later status and stability changes.

Finally, the last model (D') added a control for spatially lagged initial status. The goal here was to provide a stricter test of the impacts of surrounding racial composition, after removing the impacts of surrounding status.

For status changes, the most important result was that surrounding racial composition continued to negatively and significantly affect later status changes ($b = -.09$; $p < .001$). Higher status of surrounding neighborhoods made later status increases more likely ($b = .29$; $p < .001$). The neighborhood's initial status remained influential ($b = .63$; $p < .001$), although this continuity coefficient was smaller than seen in earlier models. In short, later status changes were more likely to be positive if initial status was higher, the neighborhood was surrounded by higher status neighborhoods initially, and the neighborhood was not surrounded by primarily African-American neighborhoods (Note 9).

Looking at stability changes, adding surrounding neighborhood status did not change the pattern of impacts. Predictors significant previously remained so.

Throughout all of these models, the residuals for status and stability changes remained significantly albeit modestly correlated. The portions of these two changes not explained by the models linked together.

Table 2. Baltimore: Predicting Status and Stability Changes 1990-2000

Model	A		B		C		D		D'	
2000 Outcome	Status	Stability	Status	Stability	Status	Stability	Status	Stability	Status	Stability
Status-1990	.8888***	------	.8295***	-.0873*	.7811***	-.0433	.7983***	-.0839**	.6261***	-.0392
(ss_pw_90)	(0.0191)		(.0271)	(.0354)	(.0267)	(.0350)	(.0271)	(.0358)	(.0339)	(.0471)
Stability-1990	------	0.7025***	-0.0039	.7406***	.0132	.7779***	-.0187	.7497***	-.0302	.7649***
(sb_pw_90)		0.02493	(0.0244)	(.0318)	(.0239)	(.0314)	(.0240)	(.0352)	(.0240)	(.0309)
% twenties-1990	------	------	-0.0141	-0.1130***	-.0177	-.0904***	-.0266	-.1117***	-.0131	-.0920***
(twen_pwp)			(.0198)	(.0287)	(.0191)	(.0250)	(.0195)	(.0259)	(.0189)	(.0252)
+ Kids / - Supervisors	------	------	-0.0815***	0.0496	-.0217	-.0061	-.0498*	.0496	-.0503*	-.0029
(zkdspwp9)			(.0248)	(.0323)	(.0215)	(.0327)	(.0249)	(.0323)	(.0240)	(.0319)

% African-American-1990	------	------	------	------	-.1233***	.1995***	------	------	------	------
(aa_pw_90)					(.0215)	(.0282)				
Unexpected change %	------	------	------	------	-.2821***	-.1275*	------	------	------	------
African-American (aa_pw_rs)					(.0450)	(.0590)				
Spatially lagged % African-	------	------	------	------	------	------	-.1346***	.0001	-.0855***	.2239***
American1990 (aa_9_paj)							(.0237)	(.0002)	(.0239)	(.0318)
Spatially Lagged 1990 Status	------	------	------	------	------	------	------	------	.2928***	.0061
(ss_9_paj)									(.0406)	(.0540)
Constant	3.09	15.91	10.98	21.41	15.93	8.94	18.98	18.61	10.60	7.99
R squared	0.7509	0.5321	0.7552	.5582	.7769	.5919	.766	.558	.782	.590
Residual correlation	.1306***		.1328***		0.1808***		0.2009***		.2072***	

Note. N = 693 census block groups standardized to 2000 boundaries. Seemingly unrelated regression model. Results replicated with structural equation models (AMOS 4.0) to second decimal place. Significance of residual correlation assessed with Breusch-Pagan test. Census block groups with 1990 population < 25 or > 50% of population in group quarters were dropped.

* = p < .05; ** = p < .01; *** = p < .001

To describe the geographic patterning of these changes, and link specific sections of the city with the patterns shown in these analyses, maps completed for the 1990 and 2000 attributes, the unexpected changes on both stability and status, and of significant local clusters (significant local Moran's I). The shift over time in significant local clustering showed the clearest pattern of change. In the online appendix, Figure A-2 shows the 1990 significant local clusters on status, and Figure A-3 shows the corresponding map for 2000. (Note 10) Clusters of high values surrounded by other high values (high-high) are shown in red; clusters of low values surrounded by other low values are shown in dark blue (low-low). Clusters of dissimilar scores (low surrounded by high or low-high, in light blue; high surrounded by low or high-low shown in pink) also appear.

The most notable changes during the decade took place on the east side of Baltimore as the low-low status cluster extended northward to the railroad tracks near 25th Street, and eastward east of Edison Highway along Sinclair Lane, and southward on the east side of Edison Highway/Ellwood Avenue. These areas are near locations which have been substantially African American since the 1980s.

In addition, just below the growing low-low cluster on the east side, along the waterfront and up to and east of Patterson Park, the high-high cluster expanded significantly, continuing an increasing status trend for this area begun in the 1980s (Taylor, 2001, p. 144). Although increasingly multi-ethnic in the 1990s, this area was historically white and continued to host a sizable white population. The expansion clustered these neighborhoods with high status, partially gentrified neighborhoods around the Inner Harbor area.

Further, staying on the east side of town but moving up to the northeast quadrant of the city, the high-high cluster extending along the city's northern tier retreated somewhat in the area east of Belair Road and north of Clifton Park. The lower end of the Harford-Belair corridor experienced substantial racial change in the 1990s, converting from white to African American.

On the west side of town, the low-low cluster extending from east of Pennsylvania Avenue to west of Poplar Grove Avenue remained relatively stable. But north and west of this low-low cluster, another much smaller low-low cluster along Park Heights Avenue north of Druid Hill Park grew somewhat. This northwest section of Baltimore had experienced substantial racial change from white to African American in the 1970s (Goodman & Taylor, 1983).

Finally, just west of the Park Heights low-low cluster, in an arc ranging from south of Park Heights Avenue down to Liberty Heights Avenue and below, the a section of the high-high northern tier cluster disappeared during the 1990s.Again, the neighborhoods here (Ashburton, Towanda-Grantley) had experienced sizable racial change from white to African American in the 1970s (Goodman & Taylor 1983).

In sum, these changes in the locations of the high-high and low-low status clusters can be linked to initial racial composition, and in at least one case (high-high retreat along Belair Road during the 1990s) to racial changes taking place during the decade.

3.2 Philadelphia

The results of the same analyses completed for 1,756 census block groups in Philadelphia appear in Table 3.

Table 3. Philadelphia: Predicting Status and Stability Changes 1990-2000

Model	A		B		C		D		D'	
2000 Outcome	Status	Stability	Status	Stability	Status	Stability	Status	Stability	Status	Stability
Status-1990	.8498***	------	.8151***	.1663***	.8029***	.1733***	.8056***	.1728***	.4608***	.1531***
(ss_pw_90)	(.0127)		(.0153)	(.0188)	(.0164)	(.0200)	(.0164)	(.0201)	(.0220)	(.0302)
Stability-1990	------	.7153***	-.0276**	.6416***	-.0269	.6569***	-.0312*	.6442***	-.0005	.6459***
(sb_pw_90)		(.0167)	(.0135)	(.0166)	(.0138)	(.0169)	(.0137)	(.0168)	(.0123)	(.0169)
% twenties-1990	------	------	.0324*	-.2094***	.0285*	-.2066***	.0293*	-.2073***	.0405***	-.2066***
(twen_pwp)			(.0129)	(.0158)	(.0130)	(.0159)	(.0130)	(.0160)	(.0117)	(.0155)
+ Kids / - Supervisors	------	------	-.0756***	.1396***	-.0685***	.1342***	-.0703***	.1359***	-.0529***	.1370***
(zkdspwp9)			(.0152)	(.0186)	(.0156)	(.0190)	(.0155)	(.0190)	(.0139)	(.0190)
% African-American-1990	------	------	------	------	.0203	-.0394*	------	------	------	------
(aa_pw_90)					(.0153)	(.0187)				
Unexpected change %	------	------	------	------	-.0692**	-.1365***	------	------	------	------
African-American (aa_pw_rs)					(.0239)	(.0291)				

Spatially lagged % African-American 1990 (spat_paa)	------	------	------	------	------	------	.0270 (.0170)	-.0186 (.0205)	-.0846*** (.0158)	-.0249 (.0218)
Spatially Lagged 1990 Status (ss_9_paj)	------	------	------	------	------	------	------	------	.5646*** (.0268)	.0322 (.0368)
Constant	5.90	14.54	11.18	13.41	10.70	14.54	10.43	13.93	2.78	13.50
R squared	.7189	.5058	.7249	.5660	.7266	.5721	.7253	.5662	.7807	.5664
Residual correlation	.1233***		.1698***		.1653***		.1708***		.1807***	

Note. N = 1756 census block groups standardized to 2000 boundaries. Seemingly unrelated regression model. Significance of residual correlation assessed with Breusch-Pagan test. Census block groups with 1990 population < 25 or > 50% of population in group quarters were dropped.

* = p < .05; ** = p < .01; *** = p < .001

Jumping ahead to the most theoretically central model (D'), in Philadelphia, as in Baltimore, status increases were less likely in neighborhoods that were surrounded by neighborhoods with greater relative African-American concentration (b = -.08; p < .001), after controlling for initial and surrounding status, and stability, age, and household structure in the target neighborhood. In both cities, of markedly different sizes, having a greater African American population nearby initially made later status increases less likely.

Other results from the most stringent model (D') in Baltimore also replicated in Philadelphia: later status increases were more likely (1) if initial status of the target neighborhood was higher (b = .46; p < .001); (2) if the initial average status of surrounding neighborhoods was higher (b = .56; p < .001); and if there were fewer children and more adults at the beginning of the period (b = -.05; p < .001).

Turning to stability changes, in Philadelphia these were linked to more predictors than in the most stringent Baltimore model. As in Baltimore, higher initial stability and fewer residents in their twenties made later stability increases more likely. Nevertheless, in addition, higher initial status (b = .15; p < .001), and the presence of more children and fewer older adults (b = .14; p < .001), also made later status increases more likely. Although surrounding racial composition affected stability changes in Baltimore, in did not do so in Philadelphia.

Focusing solely on impacts of target neighborhood features on changes (Model C), race impacts were somewhat similar but also somewhat different from those seen in Baltimore. In Philadelphia, as in Baltimore, increasing African-American representation during the decade made later status (b = -.07; p < .01) and stability (b = -.13; p < .001) increases less likely. Differences included, in Philadelphia as compared to Baltimore: no impacts of initial racial composition on later status changes (b = .02), and a negative rather than a positive impact of initial racial composition on later stability changes (b = -.04; p < .05).

Turning to other demographic features of just the target neighborhood (Model C), more twenty year

olds made later stability gains less likely ($b = -.21$; $p < .001$), as was seen in Baltimore. The presence of more children and fewer older adults, however, had significant impacts on both outcomes ($b = -.07$; $p < .001$ for status; $b = .13$; $p < .001$ for stability) which were not seen in the Baltimore data. Higher scores meant later status gains were less likely but later stability gains were more likely.

Finally, thinking more broadly about overall model features, in Philadelphia as in Baltimore the most stringent model (D') explained slightly over ¾ of 2000 status, and over ½ of 2000 stability. Further, the residuals from the two equations were significantly correlated and of about the same size ($r \sim .2$) as was seen in Baltimore.

To gain a more contextualized understanding of what these models mean for Philadelphia, maps of initial status and stability, unexpected changes in status and stability, and significant local clustering by status and by stability were examined (Note 11). As with Baltimore, the most broadly useful maps were those showing the significant local clustering at two points in time. The color scheme was the same as for the Baltimore maps. The maps showing significant local clustering by status appear in the online appendix. The 1990 status clusters appear in Figure A-4 and the 2000 status clusters appear in Figure A-5.

In 1990, a north Philadelphia low-low status cluster extended from the Schuylkill River on the west, up along Roosevelt Boulevard to roughly Hunting Park Avenue on the north edge, to B Street or Front Street on the east, to Girard Avenue on the south. This cluster grew and extended northeastward during the 1990s, extending along the Frankford Avenue corridor. The latter is a multi-ethnic locale with some African American representation. It also retreated somewhat along its southern edge near Girard Avenue, east of Broad Street, where there were some substantial replacements of public housing communities during the 1990s. A second low-low cluster showed up south of Center City and mostly west of Broad Street. This cluster retreated southward and westward during the 1990s, losing census block groups near South Street as housing in this area, close to Center City, became more desirable during the period with rising rents and house prices. Moving southwest of this cluster and crossing the Schuylkill River was another low-low cluster in southwest Philadelphia. This area was substantially African American, and the low-low cluster grew westward somewhat during the period.

Also in West Philadelphia, extending from just west of University City almost to streets in the upper 50s, and located largely north of the Market-Chestnut-Walnut Streets corridor, was another low-low status cluster. During the 1990s this cluster's western edge seemed to fill in somewhat, and also to extend southward. This section of West Philadelphia was predominantly African American.

Looking at the "movement" over time of the local clusters of low status neighborhoods shows the clearest overall pattern of which areas were likely to become lower status, and thus part of a low-low status cluster, and which areas, previously part of a low-low cluster, left a cluster. All of the low-low cluster extensions described above for this period, save the Frankford Avenue extension northeastward of the north Philadelphia main low-low cluster, involved neighborhoods that were substantially if not predominantly African American.

4. Discussion

This paper has proposed an ecological extension of Ellen's (2000a) neighborhood projection thesis. This extension suggested why later neighborhood changes in status and stability might be affected by three aspects of racial composition: initial racial composition of the target neighborhood, surrounding initial racial composition, and changes in target neighborhood racial composition. Two major cities of different sizes, where African Americans were the predominant population of color, directed attention to this racial group.

The primary purpose was to conduct ecological analyses, using neighborhoods defined at a small spatial scale, to see whether the patterns of results would support the extended model.

In these two different cities support for the extended neighborhood projection thesis was observed in the following ways. 1) In both cities as neighborhoods' relative African American population increased, status declined. The two concurrent changes linked in the expected direction. 2) Perhaps more importantly from a causal standpoint, later neighborhood status changes in both cities were negatively affected by a more substantial initial surrounding presence of African Americans. This represents a striking confirmation of the causal impacts of racial concentration effects on neighborhood quality (Peterson & Krivo, 2010). Controlling for initial status of target and surrounding neighborhoods, and stability and household composition of the target neighborhood, those neighborhoods initially surrounded by neighborhoods more predominantly African American were more likely to drop in relative status over the following decade.

Turning to stability changes, one consistent racial impact was observed in both cities: a negative impact of an increasingly African American population on stability changes. Further, the models showed that residual status changes linked to stability changes. In ways not yet explained, various pathways of neighborhood change link together (Taub, Taylor, & Dunham, 1984).

The present results suggest that the proposed extension of Ellen's neighborhood projection thesis, particularly as it applies to status changes, has some merit. Of course, the processes underlying the impacts seen here, whether those be institutional (Squires & Kubrin, 2006), ecological at a relatively low level of aggregation, or social psychological (Taylor, 1997), are assumed to be analogous to rather than homologous with the processes she described. Future investigators in this area will hopefully use longitudinal and multiple method approaches to clarify the relevant dynamics.

More specifically, two themes deserve substantial probing. First are these neighborhood-changing dynamics driven primarily by emergent properties in these neighborhoods as residents and potential in-movers react individually and as groups (Taylor, 2001, pp. 320-322) to local conditions and changes? Or, instead, are they driven primarily by outside agents or programs seeking, respectively, to either profit from (Gottdiener, 1994; Logan & Molotch, 1987) or manage (Squires & Kubrin, 2006) change? Second, how and in what ways does local history—political, social, economic and cultural—intertwine with and shape these dynamics (Molotch et al., 2000)? Each city and each section of a city brings its history to the present. In the case of Baltimore, for example, numerous planned-to-be-upscale

neighborhoods in the north-central section of the city developed during the very early 1900s have guaranteed a stable, ongoing center to the cluster of high status neighborhoods along the northern tier of the city (Olson, 1997).Local and federal decisions about the location of public housing communities from the 1950s and 1960s have substantially shaped many lower income, predominantly African American communities on the city's west side (McDougall, 1993). Figuring out how these local factors condition the model developed here will be an important task.

On a more general note, the current results contribute to an existing literature on effects of race on subsequent neighborhood status change. That work, for both target and nearby racial composition, has generated inconsistent results. For two cities, for one decade, the current study found significant racial impacts of initial racial composition nearby, and changes in racial composition.

Of course, the current study has limitations. In essence, it presents two case studies, each limited to one city and one decade of change. In addition, given the modifiable area unit problem, results may be further limited by the level of analysis. Even though the level of ecological aggregation used here was chosen for theoretical reasons, different patterns may have emerged were different levels of ecological aggregation used. Third, the focus here was on the contribution of one particular group, African Americans, to neighborhood racial composition. Other racial/ethnic groups were not examined. Work on settlement patterns (Charles, 2003) shows how different racial/ethnic groups face different challenges. Expanding works like this to cities where, for example, Asian or Hispanic populations are the predominant population of color, could prove illuminating.

Perhaps offsetting these limitations are some strengths. Most importantly, two key impacts of race on status, and one impact of race on stability, replicated across cities. Further, in keeping with an ecological framework, the focus was on shifts in neighborhoods' relative position in each city's ecology. This allowed results to be readily translated into the shifts in positioning between neighborhoods. Third, two linked outcomes, status changes and stability changes, were investigated. Furthermore, because the authors were familiar with both cities, it was possible to contextualize the results in each location. This helped clarify connections between impacts seen and the racial makeup in different parts of each city. Finally, robust analyses were completed via seemingly unrelated regressions, and replicated with structural equation models.

In closing, the current work sought to contribute to the ongoing literature about the impacts of racial composition in neighborhood change, an area of investigation that has generated conflicting results. An ecological extension of Ellen's (2000a) neighborhood projection thesis expected impacts of initial racial composition, surrounding racial composition, and changes in racial composition, on changes in status and stability. In two different cities, two key impacts of race on status change, and one impact of race on stability change appeared. Whether through ecological, social psychological, or institutional-led dynamics, or some combination, it appears that locations become less desirable if groups of residents initially find themselves near more predominantly African-American neighborhoods, and as their own neighborhoods become more African-American.

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Notes

Note 1. In 1990 in Philadelphia there were 848,586 whites and 631,936 African Americans. In 2000 there were 688,267 whites (only) and 655,824 African Americans (only). In Baltimore city in 1990 there were 287,753 whites and 435,768 African Americans. In 2000 there were 205,982 whites (only) and 418,951 African Americans (only). Numbers from www.factfinder.census.gov

Note 2. As the above numbers show, Philadelphia gained only about 24,000 African Americans during this period and Baltimore lost about 15,000.

Note 3. Given that segregation vs. integration is different from racial composition per se, with its focus on the "middle" range of a racial variable, and given that more recent integration indices have recommended considering racial mixing in a tract relative to what is taking place in the surround (Maly 2000; Smith 1998), the results exploring the impacts of racial composition should not be presumed to apply also to questions of diversity and segregation.

Note 4. There are some important points of overlap between this model and the racial proxy hypothesis

(Harris, 1999)

Note 5. Scores on dissimilarity indices can range from 0 (complete integration) to 100 (complete segregation).

Note 6. See online appendix at: http://www.rbtaylor.net/appendix_balphl.pdf

Note 7. The analyses presented here were re-run using structural equation models via AMOS 4.0, using asymptotic, distribution free (ADF) distributional assumptions. Parameter estimates were equal to those shown, to the second decimal place. This was done for both cities.

Note 8. Percent African-American in the target community, and surrounding racial composition, shared 85 percent of their variance.

Note 9. Although initial target status and spatially lagged initial status shared 58 percent of their variance, SURE is particularly adept at handling multicollinearity problems, and close inspection of the standard errors showed they were not markedly inflated by adding in this predictor.

Note 10. Although initial target status and spatially lagged initial status shared 58 percent of their variance, SURE is particularly adept at handling multicollinearity problems, and close inspection of the standard errors showed they were not markedly inflated by adding in this predictor.

Note 11. See online appendix at: http://www.rbtaylor.net/appendix_balphl.pdf