Segregation within Integration: Exploring Micro-Level Segregation in Seattle's Integrated Tracts Using Spatial and Qualitative Analysis

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Abstract

In this paper we conduct an analysis of racial residential segregation within diverse neighborhoods in Seattle using the 2010 US Census and a novel dataset of businesses, local services, and photographs. Our intention is to explicate how residential segregation still manifests even within diverse neighborhoods through physical and social buffers created by topography, the built environment, economic structures, and racial history. Thus, what appears as a diverse neighborhood at the tract-level could be hiding substantive ethno-racial residential segregation that is associated with a spatial stratification of key resources (i.e. quality housing, health, education, and medical care) due to a lack of residential propinquity to them. We begin with a cross-metropolitan comparison of similarly segregated cities to understand the impacts of measuring aggregated data at various scales (MAUP) and follow with fieldwork to identify buffers that may divide racial groups well below the commonly used tract level. We find that substantive micro-segregation occurs at the block-level within diverse tracts in both cities and block-level analysis reveals dynamic buffers that prevent interaction between racial groups. This research has implications for studies of residential segregation, challenging how we measure its existence, and highlights the impacts of modifiable areal unit problem in social research.

Racial residential segregation has decreased in the United States. From 1970 to 2010, the average black/white dissimilarity lessened from 79 to 59, while the percent of whites within a typical white person's neighborhood dropped from 88% in 1980 to 75% in 2010 (Logan and Stults 2011). Not only has segregation decreased on the aggregate level but there has been a concomitant increase in the level of diverse areas throughout the United States (Friedman 2008). Large numbers of Hispanic and Asian immigrants in recent years have helped to diversify cities and their neighborhoods (Fasenfest et al. 2004). Moreover, racially diverse neighborhoods are signals of racial progress, but much of the extant research (Friedman 2008; Reibel and Regelson 2011) on integrated communities utilizes census tracts as proxies for neighborhoods. While past studies that utilize census tracts as their unit of analysis provide critical information on the ever changing association between racial diversity and place, they may hide potentially substantive levels in racial residential segregation at micro-levels of geography.

Most researchers that investigate residential segregation use census tracts as their unit of analysis (Crowder, Pais, and South 2012; Glaeser and Vigdor 2012; Massey and Denton 1993). The US Census defines tracts as populations anywhere between 1,200 and 8,000 people, with 4,000 individuals as the optimum level. There are strong reasons why scholars of residential segregation have relied on the census tract for their conception of a neighborhood. For instance, the US Census provides more detailed economic information on households than at smaller levels of scale. Moreover, while scholars acknowledge that tracts are imperfect operationalizations of neighborhoods (Crowder, Hall, and Tolnay 2011) they assert that tracts offer the most accurate conceptualization of neighborhoods spatially that are available (Jargowsky 1997; White 1987).

However, scholars have indicated a number of weaknesses in using census tracts for operationalizing neighborhoods. For example, the meaning of a neighborhood is fraught with ambiguity and is challenging to ascertain. Research verifies that inhabitants of a neighborhood can have a drastically different understanding of the size, boundaries, and name of their residential space that may differ from the administrative boundaries in which social processes are measured (Schwirian 1983; Lee and Campbell 1997; Hwang 2014). Additionally, Lee et al. highlight that tracts make the assumption that all individuals inside a tract are "equally proximate to everyone within its boundaries" (2008). This issue is emphasized with studies of residential segregation at smaller levels of scale than the tract. Racial residential stratification measured at the block-level is generally higher than in tracts because as the geographic scale becomes smaller the population within areas tends to become more homogeneous, leading to higher levels of segregation (e.g. dissimilarity) (Wong 2003). Thus, smaller levels of scale often lead to observing higher levels of residential segregation (Wong 2003, 2004). This is a well-established issue in analyzing aggregated geographic units and is referred to as the modifiable areal unit problem (MAUP) - a statistical problem of scale and zoning associated with aggregated data, potentially leading to ecological fallacy. The MAUP phenomenon suggests that investigating diverse neighborhoods might reveal racial residential segregation within them.

In this paper we will conduct an analysis of racial residential segregation within diverse neighborhoods in Seattle using the 2010 US Census and a constructed dataset of amenities, businesses, local services, and photographs. Our intention is to explicate how residential segregation might manifest in diverse neighborhoods based on an area's topography, built environment, economic structure, and racial history. Thus, what might appear as a diverse

neighborhood at the tract-level could be hiding substantive ethno-racial residential segregation that is associated with a spatial stratification of key resources (i.e. quality housing, parks, and medical care) due to a lack of residential propinquity to them. As a first analysis of the topic, we utilize a multi-method approach by combining quantitative spatial analysis, visual sociology, along with demographic and historical methodology to create an in-depth study of the stratification associated with the residential segregation at the block-level within select racially diverse tracts in Seattle. Starting with a cross-metropolitan comparison of equally segregated cities, we deconstruct macro-and micro-level patterns of residential segregation introduced through MAUP. Then we utilize historical, demographic, and fieldwork analysis to analyze the buffering effect of the social, physical, and natural environment that separates various groups.

Background and Theory

The Immigration and Nationality Act of 1965 opened the borders to foreign racial and ethnic groups that disrupted the white-black centric demographic composition of the United States. Research has evinced that the increase of Asian and Hispanic groups have led to an increase in diverse neighborhoods. Denton and Massey (1991) found that the number of all-white tracts declined from 1970 to 1980. Neighborhood diversity continued to increase from 1990 to 2000, where Farrell and Lee (2011) observed that for the 100 largest metropolitan areas in the US, most neighborhoods experienced racial and ethnic diversification.

In a more recent study, Logan and Zhang (2010) utilized census data from 1980 to 2000 and discovered that white out-mobility decreased from diverse settings through a particular

pathway that they term “global neighborhoods.” These global neighborhoods form through early Hispanic and Asian migration into all-white neighborhoods prior to blacks. This specific pattern of racial in-migration precipitated somewhat temporally stable diverse neighborhood settings over the study period. Extending their research on global neighborhoods with 2010 census data, Logan and Zhang (2011) found that 60% of the neighborhoods that were global neighborhoods in 1980 still had significant amounts of whites in 2010.

To explain the durability of these global neighborhoods, Logan and Zhang theorize that these neighborhoods exist through a “buffer” that Hispanic and Asian populations provide between blacks and whites. They assert that a buffer can be a social one, where “the presence of other groups reduces the salience of black neighbors to whites, even when they live on the same block.” Buffers can be physical, where Hispanics and Asians live between blacks in physical space, separating both groups. However, there are other potential buffers that can allow black and white populations to exist in the same neighborhood. For instance, natural buffers can effectively separate two racial groups through topographical variation such as ridges, waterways, gorges, etc. Even natural amenities (e.g. water-front views) can raise housing value, further impeding access to parts of a tract and limiting cross-race interaction. Buffers can also exist in street design. In his study of residential streets in Los Angeles and San Francisco, Grannis (1998; 2005) observed that racial similarity between neighbors was more likely when they were connected by tertiary streets (i.e. small, residential streets). Alternately, when streets were not connected they were less likely to be the same race. Grannis’ study highlights that street networks in neighborhoods can create a physical barrier between racial groups. Another buffer might occur with individuals’ perceptions of streets. Appleyard and Lintell’s (1986) study of

individuals' perceptions of streets found that respondents thought that low-traffic residential streets helped create tight communities, whereas streets that were major throughways were perceived as being filled with strangers and mainly used as passageways. Thus, a buffer between blacks and whites might exist when blacks live on streets that are high-traffic corridors, separate from whites on tertiary, low-traffic residential streets. One more potential buffer can be neighborhood land use and zoning ordinances on the types of housing that can be built in particular sections of a tract. For example, cheaper multi-family housing is generally separated from single-family residences and due to the income stratification between blacks and whites both groups are kept apart spatially and possibly socially (Massey et al. 2011).

The physical, social, and natural characteristics defined by the buffer hypothesis suggest a micro-level, interactive quality to community living where residential segregation is impacted by both the composition of nearby neighbors and the surrounding environment. Yet, buffers are unobservable at the macro-geographic level of tracts, requiring the observation of micro-units within tracts (e.g. blocks and block-groups). The phenomenon of macro-vs-micro variation can be explained through the modifiable areal unit problem (MAUP) where aggregating point data to non-homogenous geographic units introduces statistical bias (Fotheringham and Wong 1991). MAUP impacts the properties of estimators when analyzing varying scales and zones (i.e. ambiguous administrative boundaries) of geographic units, allowing researchers to find varying results for the same variable by adjusting the size or zone of a unit of analysis. While MAUP is an inevitable problem when dealing with aggregated data, its existence should motivate researchers to choose an appropriate level of aggregation to answer specific questions (Kirk and Laub 2013).

Extending this same logic to the measurement of residential segregation, we know that segregation between racial groups occurs over a range of geographic scales. The buffer hypothesis and MAUP suggest micro-level phenomena may be concealed by analyzing larger units of analysis, due to the nature of aggregation. Hence, it is essential to investigate claims of neighborhood diversity at the tract-level to reveal potential residential segregation that exists within that unit of analysis. This exercise can provide insight into the ways in which white and black populations are buffered in diverse neighborhoods and the consequences that segregation has on the quality of life for both groups.

Data and Methods

Cross-Metropolitan Analysis

Using the 2010 US Census, we begin with a cross-metropolitan comparison of varying geographic scales, starting at the metropolitan-level and working our way down to the block-level, we explore how the modifiable areal unit problem (MAUP) affects measures of segregation in similar metropolitan areas. Since our fieldwork takes place in Seattle, WA, we sought out a city comparable in dissimilarity and entropy scores to assess whether segregation occurs within integrated tracts. Using Reardon and Sullivan's (2004) measures of spatial segregation and interdependence[1] we compared black and white tract-level dissimilarity indices for all US cities with over 500,000 people. This process identifies Austin, TX as the city most

[1] Measures *D*, *R*, and *H* account for spatial interdependence, where neighboring geographic units are weighted in the final score (see Reardon and Sullivan 2004).

similar to Seattle, WA in dissimilarity and entropy (D = 0.55 and H=0.26 for both). The similarities in urban growth and political leanings between the two cities makes Austin an ideal comparison. Next, we locate the most diverse tracts within each city using the spatial relative diversity index (R) and Theil's H spatial entropy (H) for each tract. Within the identified diverse tracts we draw racial dot maps[2] of whites, blacks, Asians, and Hispanics to explore segregation within integrated tracts that visually highlights the racial variation of each group in their respective cities.

Field Work

To investigate manifestations of the buffer hypothesis within integrated tracts, we chose three racially diverse Seattle tracts to conduct demographic analysis and fieldwork. With the help of fourteen trained undergraduate researchers, we conducted a pilot study to 1) investigate the historical context of these areas; 2) analyze the built environment within them; and, 3) photograph the various buffers and amenities found in each places. One of the most prevalent strategies for measuring neighborhood diversity is with a comparative strategy (c.f. Fasenfast et al. 2004), which defines neighborhood diversity in relation to the racial composition of the broader metropolitan area. Yet, this method has a weakness. For instance, a neighborhood that is 5% black and 95% could be considered diverse if it matches the racial composition of the metropolitan area. We have decided to utilize the comparative method as a relational baseline,

[2] Dot maps are visual aids that help differentiate racial groups using different color dots for each respective group. Each dot can represent one or more people. Public census data does not feature exact locations of individuals; therefore, each dot does not signify an exact location for a person or groups of persons. Each dot is randomly assigned a location within its boundary for visual purposes.

along with a more flexible method akin to the Entropy Index (*H*) that allows us to move past the weakness of the comparative method's inability to assess levels of neighborhood diversity beyond the racial composition levels of the city. First, for the baseline tract-to-metro comparison we search for the census tract that most closely matches Seattle's racial distribution of blacks, Asians, and whites.[3] Second, we determine the tract that has the most even proportions of blacks, Asians, and whites. This is similar to the Entropy Index, which measures the level of evenness of racial groups across neighborhoods in a metropolitan area (Iceland 2004); however, instead of using an entropy score to determine neighborhood diversity, we apply the simple and intuitive method of defining the most diverse neighborhood as the area with the most even proportion of racial groups. Finally, we define a binary version of the previous method where we locate the tract with the highest proportions of black and white residents. While other tracts in the Seattle area have higher entropy or dissimilarity scores, we sought tracts that also held both residential and commercial characteristics to further unpack the effect of buffers on various racial groups.

In stage two we examined the historical context of the neighborhoods holding these tracts of differing diversity so as to understand how events, trends, and policies assisted in creating current demographic population patterns. It is apparent that present patterns of residential segregation are highly correlated with the historical process that created them (Massey and Denton 1993). For example, during World War II, Japanese residents were sent to internment camps, opening housing across Seattle, which in turn, allowed black residents to move into non-redlined or non-restrictive covenant housing. Or, how the growth of the technology sector has fueled the in-migration of a high-income workforce that has helped to drive up rents. Therefore,

[3] We only look at white, black, and Asian residents because those are the three main racial groups in Seattle.

explicating local and national history as it relates to the population patterns of Seattle is necessary to unravel how the neighborhoods we studied came to their present state.

Stage three investigates the built environment of each tract. Research on the causes and consequences of residential segregation frequently investigates variations in income (Logan and Alba 1993), health (Crowder and Downey 2010), and education (Sharkey 2008) within and across populations in neighborhoods and metropolitan areas. We argue that these three variables are evident within the built environment of a neighborhood and can be analyzed as a by-product, and possible source for, segregation and inequality. Therefore, we employ online resources to locate residential resources under the categories of income (banks, restaurants, etc.), health (clinics, gyms, etc.), and education (schools, libraries, etc.). The goal of this stage is to determine the spatial distribution of resources of various qualities that residents have ready access to in their immediate environments.

For the fourth stage, we sent researchers trained in photographic methodology into the preselected diverse neighborhoods to photograph the built environment. For each tract, we selected four blocks for our trained observers to visit – two commercial and two residential. For each block they photographed characteristics of the built environment looking for signs of income, health, and education. They were tasked with documenting signs of disorder such as graffiti, trash, and signs of security (bars on windows or car wheel clubs); the quality of the public works (sidewalks, parks, and roads); physical features that might divide the residents (topographical differences and road structures); social interactions, if any; the quality of the housing-stock (run down or well-maintained); and the overall aesthetic of the area (beautiful or unpleasing to the eye). The researchers used their GPS enabled mobile phones to take photos,

which allowed us to geocode and map the location of their photographs and then compare their photographs to the data compiled through stage three that assessed the built environment.

Results

Table 1 compares the citywide tract and block *D* and *H* scores for Seattle and Austin, focusing between bivariate comparisons of whites to blacks, Asians, and Hispanics. In both cities, dissimilarity and entropy scores increase from the tract to the block-level, an expected outcome based on MAUP theory. Austin's difference in white and Hispanic *D* and *H* scores between tracts and blocks is relatively low (*D* = -0.07, *H* = -0.09) suggesting that Hispanic segregation is not so different at the tract-level than at the block-level. This minor variation is due to the relatively high proportion of Hispanics (35.1%) in Austin, where segregation patterns are similar at both tract- and block-level as their mere population size distributes them across the large area of a tract rather than simply clustering within several blocks of a tract. Seattle's white and Hispanic differences in scores are higher than Austin's due to the smaller Hispanic population in Seattle (6.6%) suggesting block-level clustering within tracts (i.e. they are less likely to be distributed across a tract). Seattle's Asian population is second largest (13.8%) to whites (69.5%) and experience lower differences in *D* and *H* score differences (*D* = -0.09, *H* = -0.10) while Austin sees greater differences (*D* = -0.15, *H* = -0.13). Seattle and Austin's black population is relatively small (7.9% and 8.1% respectively), where they differ in *D* and *H* scores from -0.09 and -0.16.

Table 1: Seattle/Austin Segregation Comparison - About Here

Figure 1: Seattle and Austin Metro Racial Dot Maps - about here

Racial dot-maps (Figure 1) provide even further detail about the overall residential distribution and segregation patterns of whites, blacks, Asians, and Hispanics. While whites are spread throughout both cities, minority groups are concentrated in specific areas. Interstate 35 runs north through Austin, creating a buffer between the western majority white and minority concentrations along the highway in the east. The Asian population towards the north clusters in small pockets, creating a racial buffer for whites between black and Hispanic residents. Seattle's minority population concentrates in the south side where the majority of both black and Asian residents are sandwiched between Interstate 5 and white residents living along Lake Washington to the east.

Figure 2: Seattle and Austin Within Tract Micro-Segregation - about here

Turning to the top four diverse tracts in each city (Figure 2), there are distinct segregation patterns for both Seattle and Austin. Each of the eight diverse tracts have numerous blocks where at least one group is concentrated inside a single, or small handful, of blocks. For example, Tract 1742 in Austin has a highly concentrated block of Hispanic residents surrounded by whites. Seattle's Tract 11002 has a small number of blocks clustering black residents, while being surrounded by Asians. To comprehend the micro-characteristics of these separated blocks, we conducted a pilot study that analyzed the demographic and physical characteristics of some of Seattle's diverse tracts.

Pilot Study

In four stages we construct a rough conception of the micro-segregative qualities of tracts. Observing census data, we can find any clustering or pockets of particular racial groups at the block-level. The historical context informs our understanding of what may have contributed to the current racial distribution. Researching the built environment provides information on how various resources are distributed throughout the tracts. Photography assists us in capturing differences between racial groups at the micro-level that quantitative measures have difficulty in measuring (Hwang and Sampson 2014).

Tract 1701 Greenwood - Most Similar to Seattle

Demographic Assessment

In the northern area of Seattle lies the Greenwood neighborhood – the tract most similar to Seattle's demographic composition. The racial composition of tract 1701's have whites making up the largest proportion at 67.8%, followed by 11.3% Asian, and blacks as the smallest group at 5.8%. This tract is the most similar to the Seattle's overall racial distribution (66.3. white, 7.7% black, and 13.7% Asian). When observing a racial dot map of the tract (Figure 1), we can discern that whites and Asians are distributed evenly across the tract while blacks are highly concentrated in two blocks – the southwest and southeast corner of the tract – where 50%

of the tract's black residents live. This is the first piece of evidence that while the tract represents the Seattle's racial distribution, there is still substantive residential segregation at the block-level. Also, the variation of median family income is exceedingly uneven with whites earning $85,313, black households at a much lower $11,694, and Asian families earning slightly more at $26,607.

Figure 3: Greenwood Dot Map - about here

Historical Context

In the early 1900s, Greenwood was mostly a peat bog and cemetery, which was platted out for residential development (Bhatt 2008). The introduction of the railcar in 1910 allowed Seattleites to settle outside of the downtown area, leading to a population boom and subsequent segregation in Greenwood, as well as across the city, where whites separated themselves from non-whites into surrounding neighborhoods (Taylor 1995).

After the opening of the Aurora Bridge, carrying Highway 99 closer to tract 1701 in 1932, commerce grew making the area more appealing to new residents as an accessible and commutable place to live. Upon the return of Japanese from internment camps after WWII, restrictive housing covenants prevented them from obtaining housing in many of the northern neighborhoods of Seattle. Though the covenants were ruled illegal in 1948, informal restrictive practices continued (Speidel 2005). Along with a history of police brutality against African Americans (Taylor 1995), scholars suggest that Seattle Police practiced "sundown" policing policies in north Seattle until the 1960's, targeting black men and restricting them from

occupying particular parts of Seattle after dark (Gregory 2007). Today, there remains an extremely low proportion of non-white residents in the area. The several low-income housing projects in the southwest and southeast corners of the tract are managed by the Low Income Housing Institute, serving roughly 50% of the black residents of tract 1701.

Built Environment

The built environment for tract 1701 in Greenwood is distinguished by two different districts that are buffered by a major throughway of NW 95th St. The southern end is dominated by businesses and apartments, and contains the majority of black residents, and the northern residential section has low economic activity and is predominantly white. There are two large grocery stores on the south end, Safeway and Fred Meyer, while the northern section has a small produce outlet. Down the center of the tract is another throughway, Greenwood Ave., which contains a small strip of new restaurants on the south tail, such as Razzis Pizzeria specializing in vegan and gluten-free pizza. Conversely, the north side has a small neighborhood pub called The Ould Triangle. The options for healthcare are mainly on the south side, with Neighborcare Health at Greenwood, slightly outside of the tract, catering to low-income families. The educational opportunities are bundled in the south side of tract, with a public library just outside of the tract. Additionally, there is a bookstore and a The School of Rock in the same southern area. Lastly, the majority of the black population is clustered in two low-income housing complexes on the south side of the tract, bordered by major streets used for high volume traffic between neighborhoods and are partially surrounded by businesses and other large apartment buildings.

These physical barriers might effectively buffer neighborly residential interaction of blacks with whites that are located in the northern section of the tract.

Visual Sociology

For the visual field work on tract 1701, we sent our trained photographers to two residential areas (one in the southwest corner where the majority of the population is black and the other near the southeast portion of the tract, which is mostly white) and two commercial areas (both neighboring each other in the south central part of the tract). Figure 2 is a collage of images from this tract.

Figure 4: Greenwood photo collage - about here

The general aesthetic of this tract is that of a middle-class neighborhood. Some of the blocks do not have paved sidewalks, but rather dirt paths along the side of the streets and have numerous signs of security along the blocks (mostly ADT signs posted in yards and older cars with wheel locks visible for theft deterrence). Parts of the residential area to the east that have higher concentrations of whites, have well kept houses and yards, along with a clean park nearby. In contrast, the low-income housing apartment in the southwest has distinct mixed-material paneling design with cameras and thick steel gates at the entrance. This evokes a semi-institutional aesthetic setting it apart from other dwellings in the neighborhood. The commercial area is well maintained, with good sidewalks, diverse bars and restaurants that reside in newly

redeveloped property. Despite the relative newness of the construction there is some graffiti and trash along the walkways. Toward the back of the two commercial blocks are dilapidated homes with broken down fences along with empty lots and sidewalks that are a combination of dirt and mud.

Tract 8900 Central District - Nearly Even Mix of Black and White

Demographic Assessment

Due east of downtown and along the waterfront of Lake Washington lies tract 8900, one of the more diverse tracts in the city. The population consists of 47.4% white, 30.9% black, and 8.4% Asian. The median family income between racial groups is highly varied with white households earning $135,250, black households making $43,914, and Asian households earning the most at $189,219.

One of the unique features of this tract is how the natural terrain provides a buffer between white and black residents. In the center of the tract is a steep ridge running north to south. The major road connecting the areas on either side of the ridge is extremely steep and windy, practically non-traversable on foot. To the east of the park are expensive homes, water views, a beautiful natural park with well-maintained trails, and a majority of the white population (55%). West of the ridge holds a mix of mostly run-down and a few newly built homes, commercial blocks, and more than three quarters of the tract's black residents (78%).

Figure 5: Tract 8900 (Central District) Dot Map - about here

Historical Context

Due to redlining and restrictive housing covenants, most of Seattle's black population has been constrained to living in specific areas, particularly in the Central District. Prior to WWII, there was a significant Japanese American population in the Central District until their internment in 1942 (Silva 2009). The absence of Asians allowed blacks to move into the Central District creating dense pockets of minority residents. After the Fair Housing act in 1968, the black population peaked to 79% in the areas (Tu and Mayo 2011) followed by a decline to 33% over the next 40 years (US Census 2010). This demographic shift in the Central District is possibly attributable to larger metropolitan economic transformations. Shifts from manufacturing to a service and technology economy brought high-earners to Seattle. The Central District was an economically and spatially opportune place for gentrification being one of the last affordable, and relatively convenient locations, near Downtown and lake-crossing thoroughfares. The resultant increase in taxes, income divides, and cultural shifts could have led poorer black residents to relocate further south in Seattle where housing costs are notably more affordable (McGee 2011).

Built Environment

The elevated ridge running down the center of the tract, along with the difficult terrain, creates a significant divide between businesses and amenities for black and white residents. The

west side of the ridge holds the majority of black residents who have access to mostly lower quality establishments as compared white residents on the eastside along the water. On the westside, multiple convenience stores have bars on their windows, advertising lottery tickets and cigarettes. Restaurant options on the westside are mostly major fast food chains, such as Subway and Papa Murphy's Pizza. In contrast, within walking distance of the northeastern border of tract 8900, a quaint strip of fine dining restaurants and specialized markets line the streets and walking paths along Lake Washington. The high-end Leschi Food Mart advertises homemade sausage and organic roasted chicken. Two top-tier restaurants, Bluwater Bistro and Daniel's Broiler, contain entreé items in the high $60s. As a whole, the majority of the health facilities are non-medical in nature, such as Crossfit gyms. Educational facilities in the area are limited. On the westside is an all girls school, a library, and a single Christian bookstore. Conversely, the eastside of the tract has no schools, libraries, or bookstores. However, the lack of educational facilities on the eastside is most likely driven by the high cost of water-view property facing Lake Washington and zoning ordinances that limit business development.

Visual Sociology

Our trained photographers photographed four blocks in the tract: a mixed commercial and residential block to the northwest; a residential block in the center of the tract on top of the ridge; a residential block in the south central section of the tract; and a residential block on the eastside of the ridge capturing views of the water and higher-end homes.

The commercial blocks show several signs of disorder and security: gated doors for businesses, razor wire on fences, graffiti, and ramshackle structures. Both the central and south central blocks show a few newer homes mixed with mostly run-down dwellings, neglected sidewalks with overgrown vegetation, unkempt yards, and streets disconnected from higher elevated roads on the ridge, making it difficult terrain for residents to walk. Alternately, homes on the eastside of the ridge are beautiful and well maintained with stunning views of the water. The streets and sidewalks are in the best condition relative to the rest of the tract, even adding to the pleasing aesthetic provided by the water views.

Figure 6: Tract 8900 (Central District) Photo Collage - about here

While the tract data suggests integration, block-level analysis is different, especially because of the topographic buffer. Social interaction may be less likely to occur between white and black residents, especially between the poor and wealthy residents who only live within 3,000 feet of each other.

Tract 10300 Columbia City - Most Diverse Tract in Seattle

Demographic Assessment

Columbia City lies to the southeast of downtown Seattle. According to the 2010 US Census, tract 10300 is inside one of the most diverse zip codes in the nation where an estimated

59 languages are spoken. The racial composition consists of 32.8% white, 26.7% black, and 24.8% Asian. Exploring the dot map of the tract, there is distinct isolation of blacks within specific blocks, specifically to the southwest corner where one block contains 25% of the black population on only 5% of the tracts land. This highly concentrated block has a low-income apartment complex run by an affordable housing company, Bellwether Housing. The remaining 75% of the black population is not evenly distributed across the tract, but are clustered in several areas. There is also an uneven distribution in median family income between whites, blacks, and Asians, where whites earn $99,688, followed by blacks making $43,305, and Asian earning $65,577.

Figure 7: Tract 10300 (Columbia City) Dot Map - about here

Historical Context

In 1889, a private electric rail line was introduced into the Columbia City area with the dual purpose of opening the valley to development while providing access to new sources of lumber. This lumber would help rebuild the business district of Seattle after the Great Seattle Fire, which destroyed 25 city blocks, the railroad terminal, and four of the Seattle's wharves. Annexed by Seattle in 1907, Columbia City was the downtown for several surrounding neighborhoods. Columbia City was demographically dominated by whites until the 1960s and 1970s when post-Vietnam immigration. An influx of Vietnamese, Thai, and Laotians preceded an Ethiopian, Somali, and Eritrean immigration into the area. In the late 1970s, Columbia City

reached its nadir where storefronts lay empty, residents started migrating out, and crime began to increase. Since then, several private and public revitalization efforts were conducted, advocating for landmark status for several buildings in the heart of Columbia City, the repaving of sidewalks and streets, and the conversion of empty store-fronts to restaurants and boutiques. These revitalization efforts have increased its viability as a residential destination of choice for higher-income earners all across the city.

Built Environment

Tract 10300's built environment is stratified by race and has the major throughway of Rainier Ave. running down the center of the tract, serving as the buffer between black and white residents. The majority of Asian and black residents live on the westside, and near, Rainier Ave., with the white population on the eastside. The southwest side of Rainier Ave. has multiple ethnic food markets, one caters to Vietnamese patrons and the other a West African market. Along the southern end of Rainier Ave. lies multiple small convenience stores that cater to the rest of the West African population in the tract. To the north end, near the majority of white residents, lies boutique stores and fine restaurants like Tutta Bella Neapolitan Pizzeria and Geraldine's Counter. Geraldine's serves items like Café Fanny Organic Granola and Vanilla Bean Yogurt, and Sweet White Corn, Havarti and Herb Scramble, items targeted towards high SES individuals. Additionally, slightly towards the east of the tract is PCC, a community-owned organic grocery store embedded in a mainly white populace. On the south end, there is Southgate Medical Clinic located in a strip mall that has a nail salon, a vape store (selling vape cigarette products), and an

insurance salesperson. Numerous gyms are located throughout the tract offering options from gymnastics to weight training. Concerning education, there is a public library west of Rainier Ave. and there are many pre-schools throughout the tract.

Visual Sociology

Trained photographers were sent to two commercial blocks located along the north and central portions of Rainier Ave., and two residential blocks, one in the southwest corner near the previously mentioned concentration of black residents and the northeast holding mostly white residents. The commercial block to the north of the tract is the historically landmarked, higher-income business district with several blocks of restaurants and boutiques lining the well-kept streets. Within less than a mile south, the second business block is starkly different. Most of the businesses have gates on the front doors, bars on the windows, and little evidence of pedestrian traffic. The businesses appear to be much older and directed toward more ethnic clientele. Some of the businesses locations have "for lease" signs over their doors and windows. Trash and graffiti are more prevalent along this area, yet there are attempts to improve the public-works and perceptions of the area – newer bus stops with digital bus arrival signs and orange pedestrian safety-flags hanging from the poles at an intersection for pedestrians to use while crossing. Around the corner of this block are several residential homes that share the same signs of security and degradation as the commercial street: worn out sidewalks, bars on windows, and run-down houses.

Towards the northeast is the mostly white block with manicured lawns, gardens, and impressive homes. Many of the houses are either going through restoration or already have been restored. There is a mini-library stationed on the sidewalk (a large box resembling a birdhouse on a post that has free books provided by, and available to, the surrounding residents) and a nearby home with a well-maintained chicken coop in the backyard. Both the mini-library and poultry farm in an urban area are signs of modern innovations and hobbies popular among more affluent residents.

In the highly concentrated black residential block, few curbs exist and sidewalks are in disrepair, even washed out in certain areas with no proper drainage for the streets and sidewalks, decreasing walkability. Across the block is a park, as well as a school that looks shut down due to its broken-down appearance. There are several African refugee community centers stationed in converted homes. One home was severely burned in a fire, yet remained untouched and in a state of disrepair. On the west side of the block are multi-ethnic businesses in run-down shopping centers.

Figure 8: Tract 10300 (Columbia City) Photo Collage - about here

Discussion and Conclusion

In this project we explored how residential segregation can manifest within diverse tracts. We conducted a cross-metropolitan analysis between Seattle and Austin to explore the variation in outcomes produced through MAUP. Then performed a pilot study that investigated three

racially diverse tracts in Seattle using demographic techniques, historical analysis, the study of the built environment, and photographic methodology. Both our cross-metropolitan and pilot study revealed substantive levels of racial clustering at the block level within diverse tracts. At the macro-level, major roadways separated Seattle and Austin's black and white populations. On the micro-level in Seattle we witnessed black and white groups being buffered in multiple ways: by Asian residents, topographical barriers, major throughways, and differences in the location and type of housing stock. Also, we observed that in some instances, ready access to resources that influence quality of life were separated along racial group lines.

These findings are important because the diverse tracts that we studied revealed that even though blacks obtained some level of spatial assimilation with whites at the tract-level, they most likely did not achieve structural assimilation with them because of a lack of within-tract propinquity and low-levels of family income. This racial clustering also coincided with a difference in the quality of some resources, such as restaurants and grocery stores. Also, the use of photographic methods brought to the forefront the difference in aesthetic qualities between areas dominated by black and white residents respectively. Portions of the neighborhoods occupied by large amounts of black residents were generally of a lower quality, had higher traffic and noise, and all around disorder; while those swaths of land inhabited by whites had higher quality amenities, better views of nature, and pleasing aesthetic features.

While this investigation provides new knowledge about how segregation can exist in diverse spaces, there are some limitations. For instance, the micro-level analysis of Seattle was aspatial, in that we did not take into account contiguous tracts. It is clear that individuals travel outside of their tract boundary to obtain various resources. Thus, future research should extend

the analysis to neighboring areas. In addition, the neighborhoods that we defined are not necessarily how residents conceptualize their neighborhood boundaries. Possibly, black residents in tract 10300 do not consider any area past the ridge on the westside of the tract to be a part of their neighborhood. It is also important to consider that diverse neighborhoods that we observed were potentially going through neighborhood racial change, therefore future work should observe differences between neighborhoods experiencing stable racial diversity and those that are more volatile.

Also, other questions were raised through this analysis around the residential mobility of racial minorities over the past forty years. Figure 8 shows that in 1980 the black population was strongly concentrated in southern parts of Seattle, but since then they have migrated further south.

Figure 9: Transition of Black Population in Seattle: 1980-2010 - about here

Historical analysis, built environment, and photographic evidence suggests that gentrification is possibly occurring in these areas where there is an influx of new and repaired homes and businesses within the blocks that are integrated with mostly black and Asian populations. Further investigation is needed to explicate how these neighborhood changes have affected the mobility of Seattle's non-white population.

Through our multi-method approach, we observe micro-segregation at the block-level where tract-level segregation measures suggest integration. Understanding the historical context of the neighborhoods assists us in comprehending the creation of micro-segregation, while the

analysis of the built environment helps us see what the different living conditions between white and black residents might be. Although most of these findings are descriptive, this study challenges our conception of neighborhood diversity and furthers our understanding of the buffer hypothesis and the modifiable areal unit problem.

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Tables and Figures

Table 1: Seattle and Austin Dissimilarity and Entropy Comparison

		Dissimilarity (*D*)			Theil's H Entropy Index (*H*)		
		Tract	Block	Difference	Tract	Block	Difference
Seattle, WA	White/Black	**0.55**	0.67	*-0.12*	**0.26**	0.42	*-0.16*
	White/Asian	0.42	0.51	*-0.09*	0.19	0.29	*-0.10*
	White/Hispanic	0.32	0.46	*-0.14*	0.09	0.23	*-0.14*
Austin, TX	White/Black	**0.55**	0.63	*-0.09*	**0.26**	0.38	*-0.12*
	White/Asian	0.35	0.50	*-0.15*	0.10	0.23	*-0.13*
	White/Hispanic	0.48	0.54	*-0.07*	0.23	0.32	*-0.09*

Figure 1: Seattle and Austin Metro Racial Dot Maps

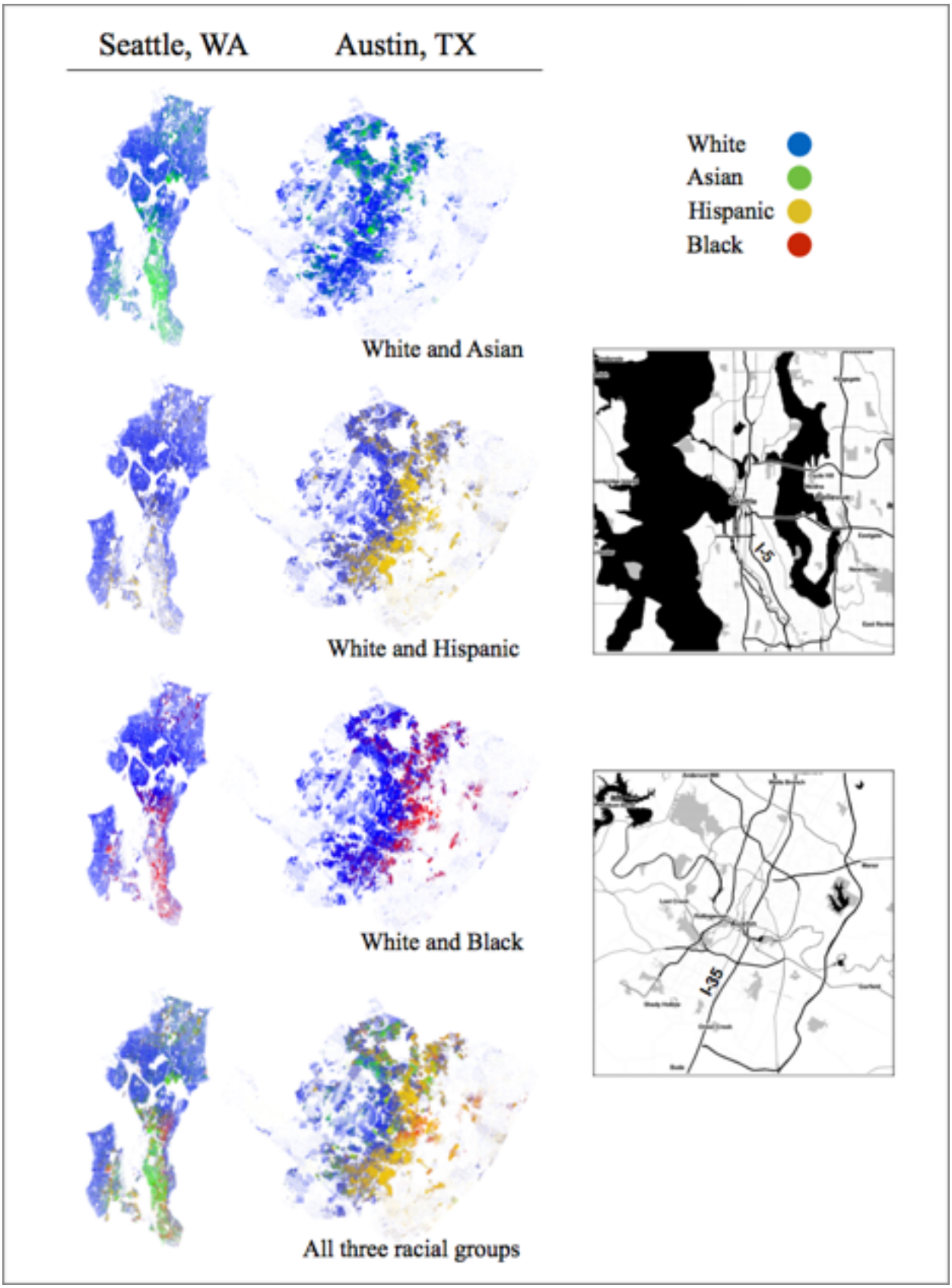

Figure 2: Seattle and Austin Within Tract Micro-Segregation

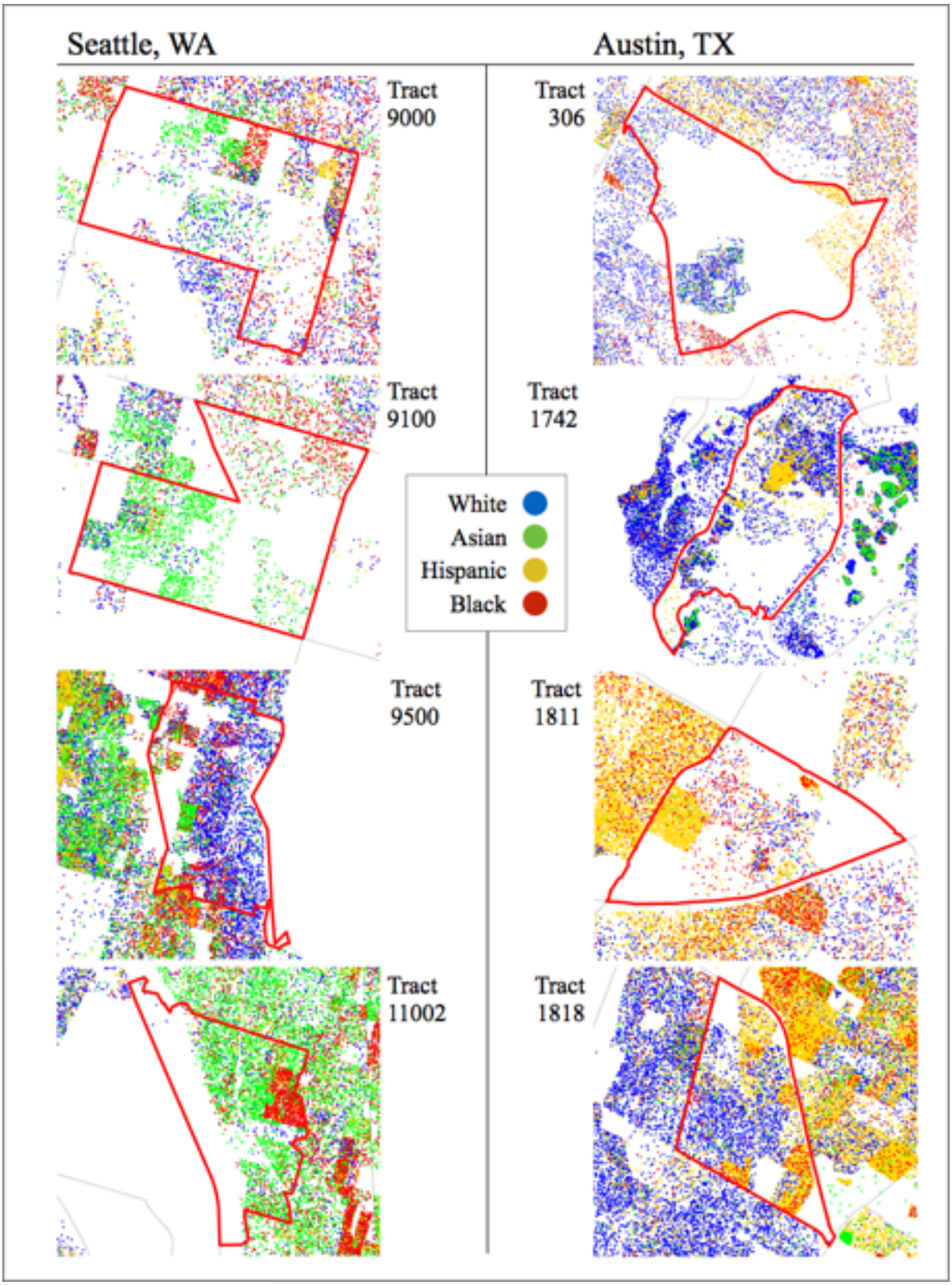

Figure 3: Tract 1701 (Greenwood) Dot Map

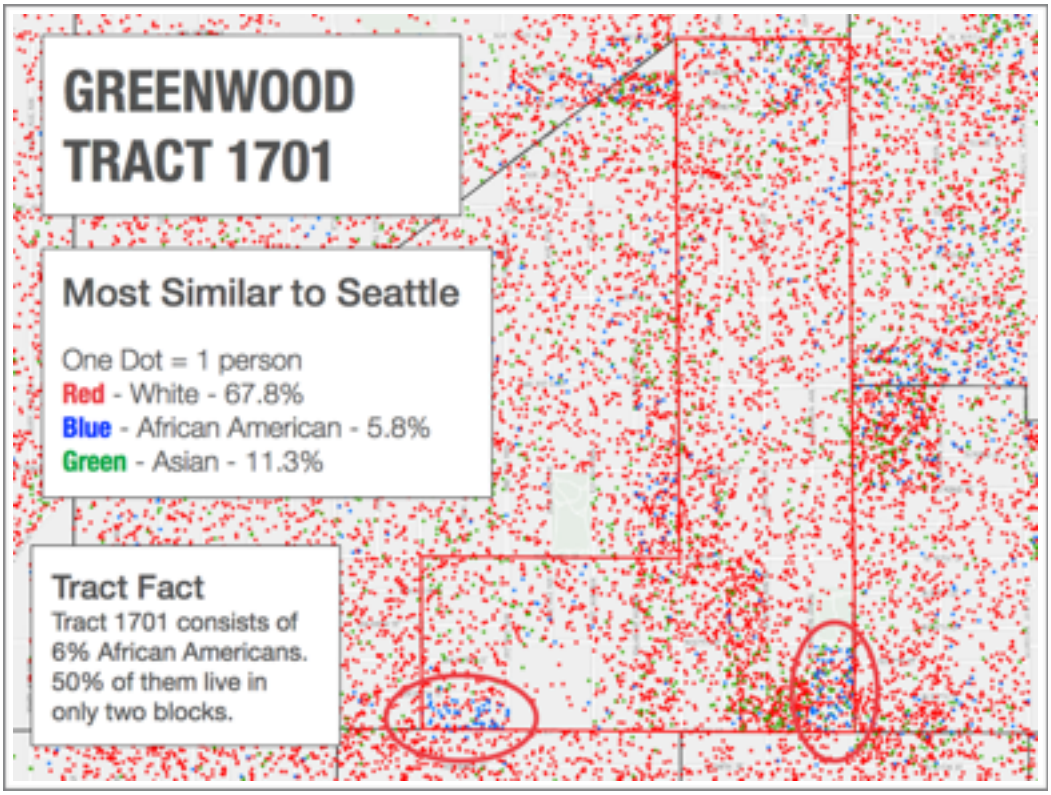

Figure 4: Tract 1701 (Greenwood) Photo Collage

Figure 5: Tract 8900 (Central District) Dot Map

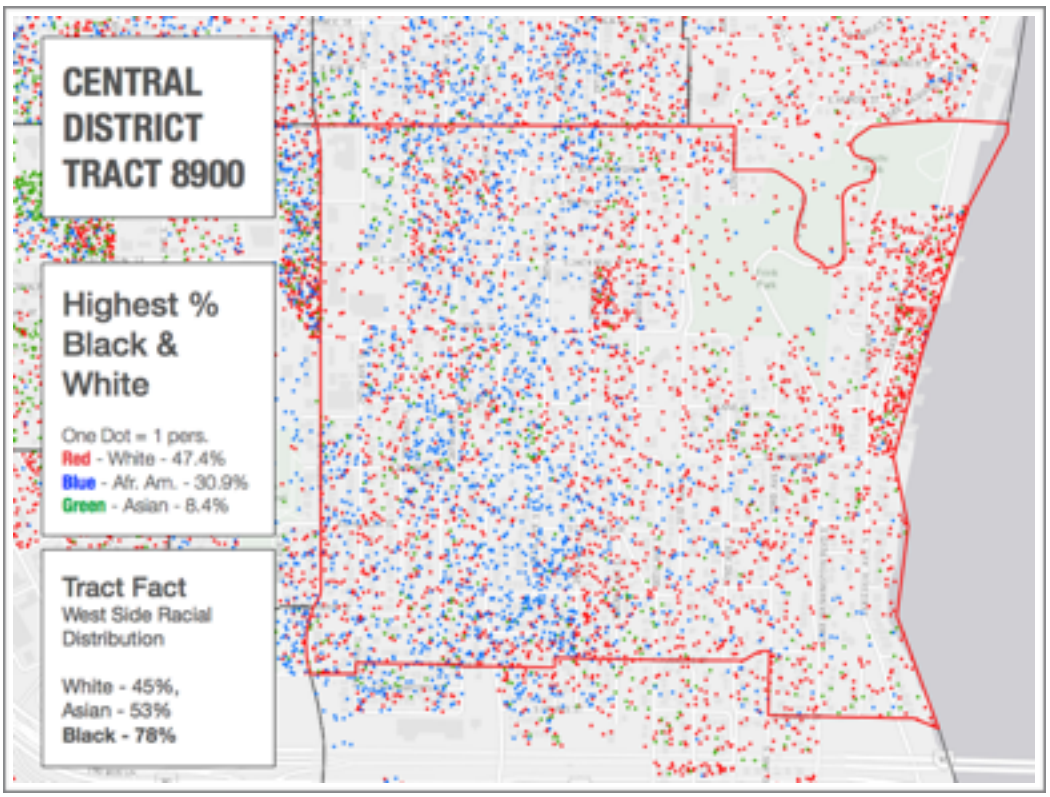

Figure 6: Tract 8900 (Central District) Photo Collage

Figure 7: Tract 10300 (Columbia City) Dot Map

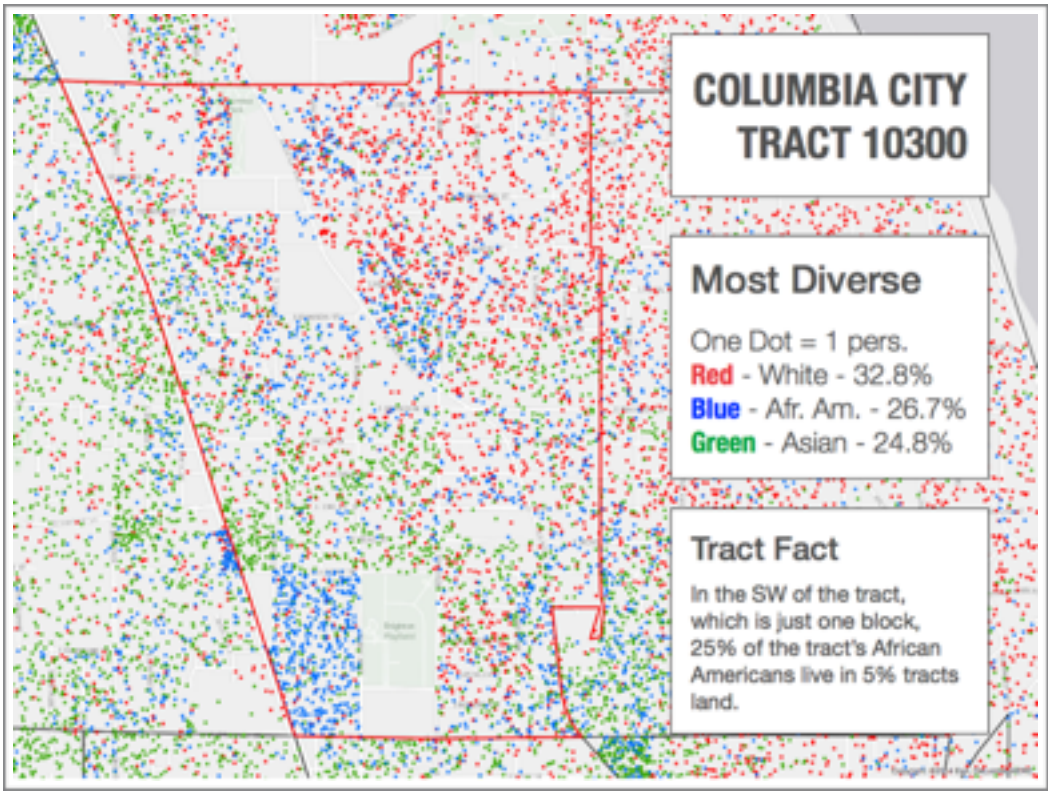

Figure 8: Tract 10300 (Columbia City) Photo Collage

Figure 9: Transition of Black Population in Seattle: 1980-2010