

(De)Segregation: The impact of de-facto and de-jure segregation on African American English in the New Southⁱ

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Abstract

Neighborhood and school segregation varies across time and place in the US and likely influences how language change spreads across communities. Yet, few studies investigate the role segregation plays in local patterns of sound change. The cultural shifts that shaped the New South provide a unique opportunity to examine how changes to community and school demographics impact the spread of language change. This analysis takes a two-pronged approach to analyzing segregation and African American English (AAE) in the New South: First, I use data from the Frank Porter Graham (FPG) project to compare twenty nine participants born in 1990 who attended schools ranging from 14 percent to 96 percent African American enrollment. Second, I consider apparent-time data from participants in the Southeast Raleigh (SR) project comparing the speech of eleven participants who attended de-jure segregated schools to nine who attended post-segregation schools. I use multiple regressions to compare the front lax vowels for both analyses as front lax vowels have undergone lowering in the local European American variety during the cultural transitions that characterize the New South. The contemporary analysis reveals a correlation between segregation levels and front lax vowel raising so that African American participants who attend majority African American schools are less likely to participate in local European American sound changes than those who attend majority European American schools. However, the apparent time analysis reveals only minor differences in the front lax vowels of pre-integration and post-integration participants. These findings suggest that community segregation patterns are an important factor in whether African Americans participate in regional European American sound changes. Additionally, such variables may elucidate the conditions

under which African Americans do not participate in regional sound changes outside the New South, including the more highly segregated urban North.

Introduction

Scholars have assumed that segregation plays some role in promoting the distinctiveness of African American English (AAE) in the context of other regional varieties. As noted by Yaeger-Dror and Thomas (2010, 8):

The degree to which a given AAE [speaker] accommodates to the local PVE [Predominant Vernacular English] norms is theoretically also influenced by the degree of actual face-to-face contact that occurs between members of each group in any given locale. Presumably, the greater the degree of segregation that exists in a given locale, the smaller the opportunity for assimilation or accommodation in either direction.

Yet, despite theoretical justifications for considering the importance of segregation in linguistic ecologies, segregation itself has rarely been incorporated as a metric in analyses of AAE. This gap exists despite the availability of demographic metrics at the community and school level, perhaps due to the early focus on highly segregated communities in the urban North (Wolfram, 2007). Because there have been few studies of AAE from more integrated communities, the role of segregation in shaping AAE remains theoretical.

In this paper, I ask what the relationship is between segregation and historical/contemporary patterns of language variation in AAE in the urban and suburban South utilizing the North Carolina Research Triangle as a test case. The dramatic demographic shifts associated with the transition to a New South economy affected various communities in the Triangle in distinct ways. The unique histories of Chapel Hill, Durham, and Raleigh, the three corners of the Research Triangle, provide a platform to analyze the relationship between school segregation and language change in the contemporary South. I

additionally zoom in on a historically middle-class African American community in Raleigh, North Carolina, to explore the influence of school desegregation through an apparent-time analysis.

Schools are loci of contact that have been shown to influence language during a time when speech is particularly malleable (Dodsworth, 2015; Kerswill & Williams, 2000, 2005). However, as this analysis reveals, the link between school and community segregation is currently so tightly connected that even on a theoretical level it becomes irrelevant to disambiguate their individual contributions to community language patterns. Despite the interrelatedness of school and community segregation metrics, these variables are valuable as they may reveal the extent to which interethnic contact is necessary for language change to spread across communities.

I. A brief history of segregation in the South

Neighborhood and community segregation

While the Research Triangle is currently geographically and economically intertwined, qualifying as a Combined Statistical Area (CSA) for US census purposes, individual communities in the CSA emerged from localized histories that leave their imprint on neighborhood and school structures today. Below, I provide a brief profile of the three corners of the Research Triangle to contextualize the subsequent analyses.

Even as school segregation predominated in the early part of the 20th century, many Southern communities were more integrated than the urban North as both African Americans and European Americans resided close to city centers. Prior to World War I, Raleigh, NC, fit into this pattern as historical African American neighborhoods such as South Park existed in close proximity to European American neighborhoods near the city center (Benjamin, 2012). Similarly, Chapel Hill's historic African American neighborhoods were centrally located and in close proximity with downtown European American neighborhoods, limiting physical segregation.ⁱⁱ This pattern contrasts with newer Southern

communities which frequently have higher levels of segregation. Durham, NC, follows this pattern as its incorporation, and subsequent population boom, mainly occurred after the Civil War. During post-war industrialization, Durham developed distinct African American neighborhoods that surrounded one of the most prominent African American business districts in the nation, known as “Black Wall Street” (Anderson, 2011). This centralization of African American business and housing led to higher levels of historical neighborhood segregation compared to Raleigh or Chapel Hill, NC.

Community segregation is not stable over time, however. Suburbanization after World War 1 brought the rise of planned communities and subsequent suburban white flight in Raleigh, NC. Along with strategic planning from school boards, this led to increased segregation in Raleigh so that today Durham and Raleigh are both considered moderately segregated cities, although neither city meets the definition of hypersegregation employed by Massey & Denton (1989) and frequently observed in the urban North. Chapel Hill, on the other hand, is considered highly integrated according to US census segregation metrics (United States Census Bureau, 2010), as a result of an exodus of African Americans from smaller towns in the South at the turn of the 20th century (Waugh, 2012). Subsequent student housing patterns (“Northside Neighborhood,” 2015) have furthered this trend, an issue that has sparked concern about preserving African American culture and history in the town. More recent waves of immigration connected to the tech boom of the 1960s and 70s have variably affected the region as well, with newer suburban communities emerging to meet the demands of immigrants attracted by companies such as IBM. These predominantly European American communities can be found throughout the triangle, rapidly expanding on the outskirts of the urban hubs (Wei & Knox, 2015).

School segregation

In contrast to the local influences that shaped Southern neighborhoods, Southern public school segregation became directly affected by national interventions during the middle of 20th century. As a

result, by the 1980s Southern schools were more integrated than the rest of the nation (Clotfelter, Ladd, & Vigdor, 2013). Still, integration was not immediate or consistent, nor did it take effect in all locations at the same time. Even though *Brown v. Board of Education of Topeka* (1954) set a legal precedent for declaring separate but equal policies unconstitutional, desegregation did not begin to take effect in the Research Triangle until the late 1960s and early 1970s as a result of sustained activism and court-ordered bussing (Waugh, 2012).

Chapel Hill, Raleigh, and Durham, NC, each took different paths toward desegregation, resulting in distinct patterns of school segregation today. Chapel Hill proved to be the most progressive of the three communities during the Civil Rights era, becoming one of the first southern cities to desegregate without federal intervention (Waugh, 2012). The school board in Durham, on the other hand, relied on stalling tactics to maintain the status quo for most of the 1960s. When integration became unavoidable, the school district experienced white flight to county and private schools. By 1970, the city school system was over 85 percent African American, even as the county schools were 72 percent European American. The city and county districts remained separate until 1992 (Anderson, 2011). Even after consolidation, large disparities continue to exist across the high schools in the district, reflecting neighborhood segregation patterns.ⁱⁱⁱ To protect downtown communities from white flight, Raleigh leaders chose to merge city and county schools early, only three years after court-ordered bussing began, overriding a popular vote which was in favor of retaining separate systems (Benjamin, 2012).

Progress on integration efforts has not been a straight path. A second wave of national legislation in the 90s, along with joint rulings in 2007, *Meredith v. Jefferson County Board of Education* and *Parents involved in Community Schools v. Seattle School District*, further stymied integration efforts by releasing many districts from federal oversight and limiting the use of race in school assignment (Reardon & Yun, 2011). Districts took individualized approaches towards school assignment following these court decisions, leading to variable levels of segregation in the South (Clotfelter, et al. 2013). Some

districts continued to promote integration efforts. Raleigh, NC, for example, implemented a program of school assignment based on free lunch eligibility that has limited economic, and by proxy, racial segregation in the school district (Benjamin, 2012).

Today, the three cornerstone cities of the triangle each present different patterns of community and school segregation related to their own unique histories. Durham schools reflect longstanding community segregation patterns as well as a certain degree of white flight from city schools, leading to many predominantly African American schools. The Raleigh School Board's current program to avoid high poverty schools also helps address racial segregation to some extent, making it a model of contemporary integration efforts. This does not suggest that residential segregation has been alleviated, as segregation metrics for neighborhoods closely match Durham, NC (US Census, 2010). Chapel Hill, NC, is both highly integrated at the school and neighborhood level. However, the population of African Americans in Chapel Hill remains small after the turn of the century exodus. As these three cities have distinct patterns of school segregation, even as they are part of the same geographic and economic hub, their schools serve as an ideal test site for the influence of segregation on the spread of European-American sound changes.

II. Linguistic Context

The linguistic context of the Research Triangle is notable for a wide-spread reversal of the Southern Vowel Shift (SVS) among European Americans. In the SVS, the nucleus of /ɛ/ and, to a lesser extent, /ɪ/ raise along a peripheral path towards /e/ and /i/. In addition, /æ/ raises and becomes diphthongal in some communities. Rapid immigration to the Research Triangle in the 1960s reversed this trend so that front lax vowels among European Americans in the Research Triangle are now lowered and monophthongal (See Dodsworth & Kohn, 2012; Dodsworth, 2015). Even as this sound change has spread rapidly among European Americans in communities affected by immigration, a distinct vowel system appears to resist this change. The African American Vowel System (AAVS) differs from

contemporary Southern European American patterns in that the front lax vowels are raised and monophthongal, with the midpoint of /ɛ/ and /ɪ/ approaching /e/ and /i/, and with /æ/ raising and fronting as well. This pattern is found among older and younger African Americans alike, despite the rapid reversal of front lax vowel raising among European Americans in the region (Kohn, 2014). Yet, just as with all aspects of AAE, not all African Americans participate to the same extent in front lax vowel raising. In the following studies, I explore the extent to which African Americans from different communities and different generations retain raised front lax vowels to identify the influence of segregation on participation in local European American sound changes that correspond to the dramatic social and economic shifts characteristic of the New South.

III. Study 1: Does school segregation correlate with participation in the AAVS

In the first half of this analysis, I focus on twenty nine^{iv} participants from the Frank Porter Graham (FPG) Project. While the corpus is longitudinal, I focus on a single time point, the post-high school interview, collected in 2011-2012 when participants were around twenty years old.^v Interviews were conducted with at least one African American fieldworker, generally in the home of the participant. These participants attended fifteen different high schools from across the Research Triangle, with African American student populations ranging from 14 percent to 96 percent of the student body. For this analysis, 2,953 stressed tokens of front lax vowels were measured using Forced Alignment and Vowel Extraction (FAVE) (Rosenfeld, Fruehwald, Evanini, & Yuan, 2011). I focus on midpoints as previous analysis indicates that the front lax vowels are monophthongal for this population (Risdal & Kohn, 2014). Tokens were normalized using the method outlined in Lobanov (1971).

Figure 1 displays the F1 midpoint for tokens produced by the twenty nine participants. Each participant is represented by a distinct shade of grey and each dot represents an individual vowel token. The x-axis represents the proportion of African American students in the high school attended by each

participant. The zero measure on the y-axis represents the middle of the vowel space so that tokens above zero are in the upper half of the vowel space while those below zero are in the lower half of the vowel space. Visual inspection indicates that participants who attend schools with fewer African American students have lower front lax vowels with wider ranges. The effect is large enough that students who attended schools that have a predominantly African American student body have /æ/ ranges that are almost identical to the range of /ɛ/ ranges found among the students who attended schools where less than 25 percent of the students identify as African American.

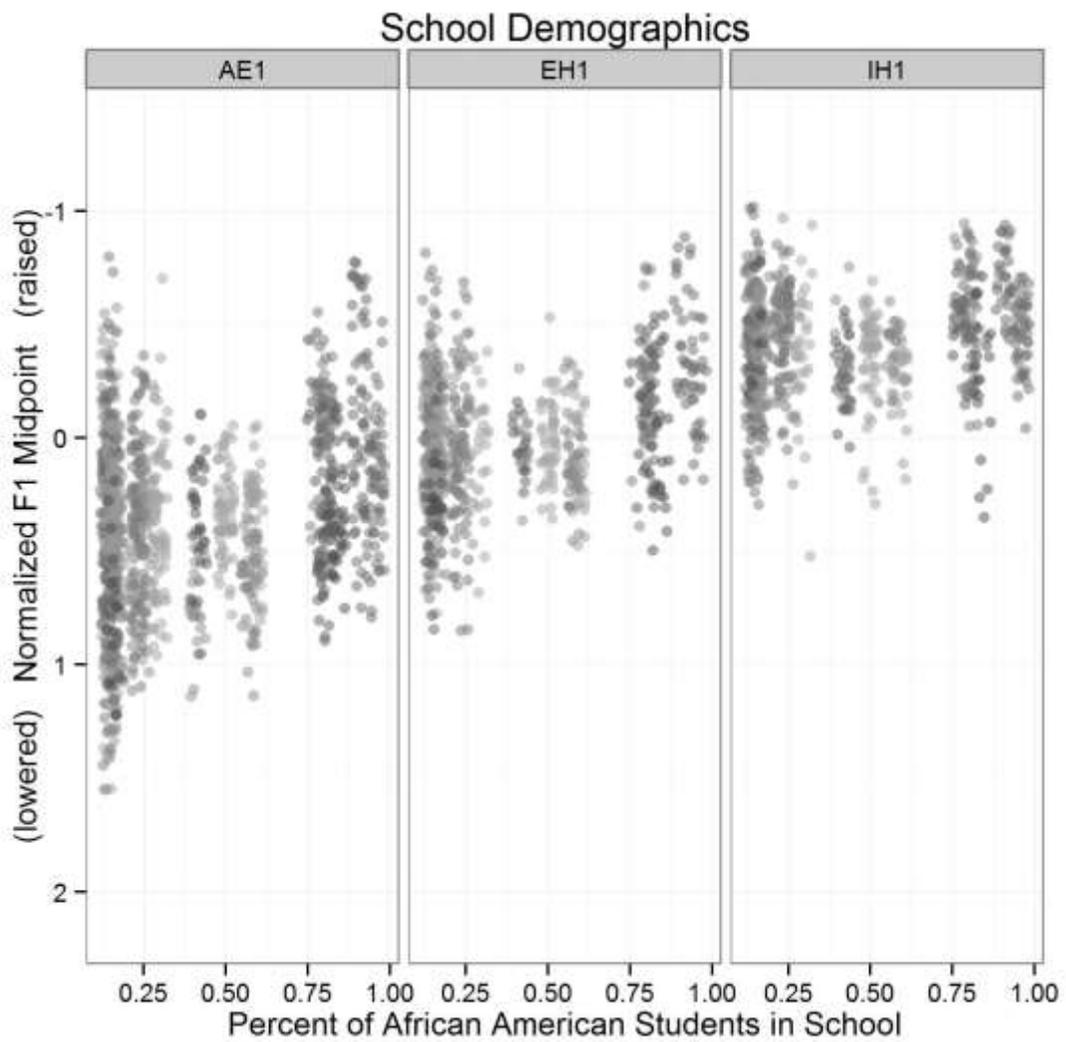


Figure 1: F1 midpoint of front lax vowels as correlated with the percentage of African American students within the high school

Regression analysis supports the observation that pronunciation of /æ/ and /ɛ/ correlates with school segregation, measured in this analysis as the percentage of African-American students in the school (/æ/: -0.42, $t = -3.96$, $p = 0.0007$, /ɛ/: -0.31, $t = -3.8$, $p = 0.001$).^{vi} The correlation between /ɪ/ and school segregation is not significant; however, this vowel class was never substantially shifted in the region, and has not been as rigorous a part of the ongoing sound change among European Americans.

Figure 2 plots normalized midpoint /æ/ F1 values for each speaker arranged from those who attended predominantly European American schools on the left to those who attended predominantly African American schools on the right.^{vii} Schools are represented by shape and the figure is faceted by community.^{viii} Notably, the participants from Chapel Hill come from two high schools: Chapel Hill High and East Chapel Hill High. Both schools have low proportions of African American students, with African American students composing about 15 percent of the student body.

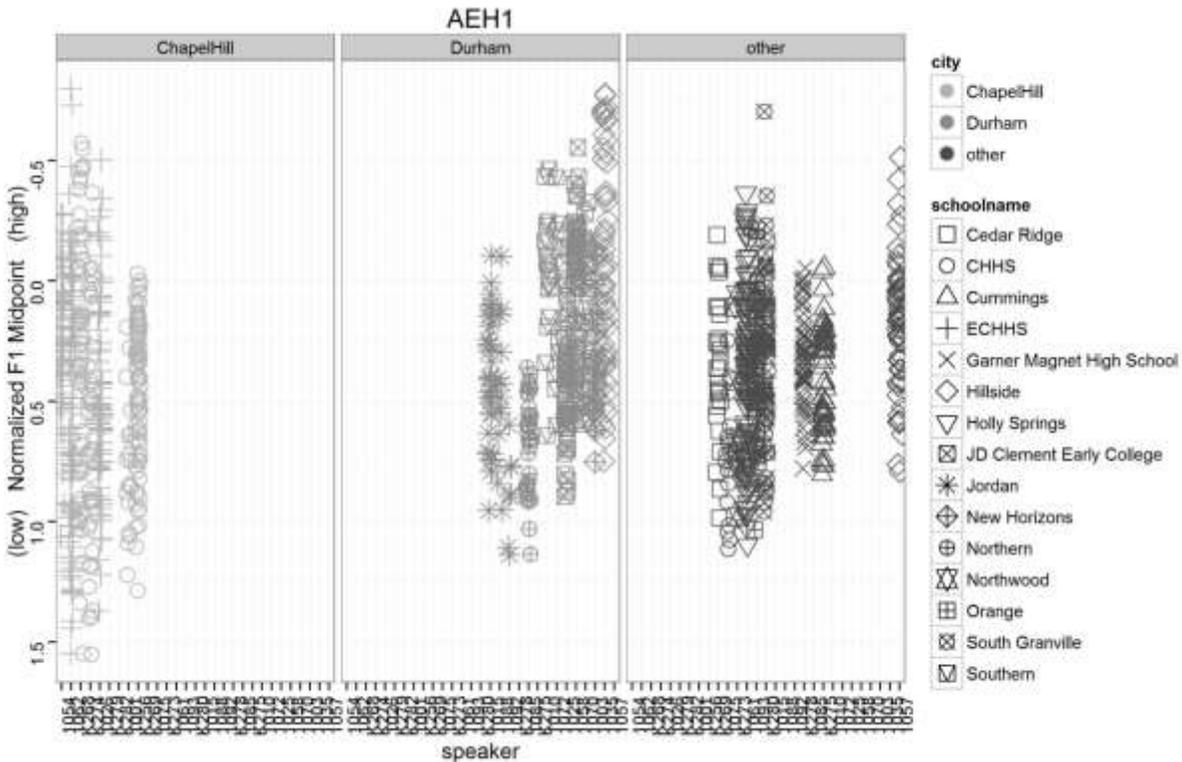


Figure 2: Pronunciation of /æ/by school and community. Participants are arranged from those who attended predominantly European American schools on the left to those who attended predominantly African American schools on the right. Each school is represented by a different symbol. The figure is faceted by community.^{ix}

It appears that the earlier school effect reflects to some extent community demographics. Chapel Hill participants are much more likely than their Durham cohorts to attend a predominantly European American school. Further, the community itself has low segregation indices, according to the 2010 US census, with a dissimilarity index of .19. There also appears to be minimal school imbalance as the demographics of Chapel Hill schools reflect the overall makeup of the community.^x These factors lead to a situation in which contact between African American students and European American cohorts is high, facilitating the spread of regional variants across groups. One of our participants described the situation as follows:

I: East [East Chapel Hill High] prepared you well for college?

1062: Yes. Academically. Academically - Well, yes, and socially because, um, although it's like predominately Asian and White you still- you still has different races. But East will make you become out of your- out of your comfort zone where you do have to socialize with other students or- Since I took like APs and Honors classes sometimes I would be the only Black student in class so I would- I would socialize with others.

This kind of social contact is likely to facilitate the spread of language change across ethnic groups; yet, the experience of students like 1062 is rarely documented in linguistics research. Within our sample, participants at Orange (26.5 percent African American), Holly Springs (23.6 percent African American), Northwood (23.1 percent African American), Cedar Ridge (17.2 percent African American), and South Granville (30 percent African American)^{xi} are all likely to have similar experiences, with subsequent accommodation reflected in their lower front lax vowel classes.

Most of these majority-European American schools are also located in communities that are predominantly European American. For example, Cedar Ridge, Orange High School, and the Chapel Hill high schools are located in Orange County where only 12 percent of the population identifies as African American (US Census, 2010). School demographics in these communities recapitulate community demographics. Yet, even as Orange County students, attending high schools with similar demographics, cluster together, the Durham participants appear spread apart (see Figure 3). Notably, students who attend Jordan High (speakers 1015, 1088, and 1092) and Northern (speaker 1085) generally do not have /æ/ ranges that extend above the middle of the vowel space while their cohorts at the predominantly African American high schools Hillside, JD Clement Early College, New Horizons, and Southern all have /æ/ ranges that cross the middle of the vowel space (see Figure 3).

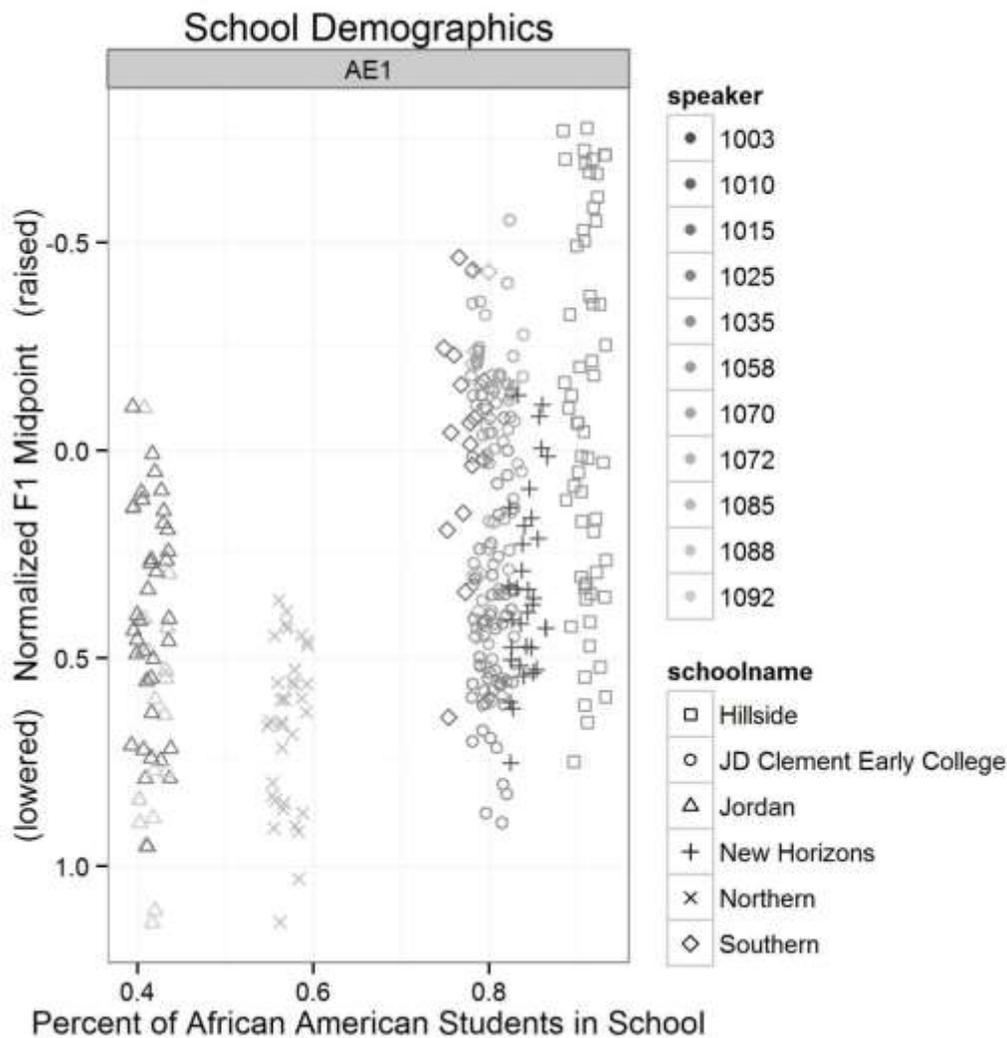


Figure 3: /æ/ tokens for Durham participants arranged by school segregation levels

Closer examination reveals that Jordan differs from Southern, Hillside, and the Early College in that it is located on the west side of town closer to Chapel Hill. In this setting, Jordan is surrounded by relatively diverse neighborhoods. Similarly, Northern is located off of Highway 501, a dividing line between predominantly European American and African American neighborhoods. The predominantly African American high schools, on the other hand, are located near NC Central, an HBCU, and older historically African American neighborhoods. In Durham, NC, just as in Chapel Hill, NC, school segregation patterns reflect community demographics. A student living on the Southwest side of Durham, NC, an area that

often houses European American commuters to UNC Chapel Hill and the Research Triangle, is likely to have extensive contact with European Americans both at Jordan High and in her home neighborhood. Students attending the Historically African American Hillside High, on the other hand, are much less likely to have contact with European Americans in either their 96 percent African American school or in one of the many historically African American neighborhoods that attends the high school. The contemporary analysis reveals that there is a strong correlation between school segregation and participation in the AAVS but school segregation largely reflects or intensifies community patterns.

IV. Study 2: Is there evidence that court-ordered school integration impacted the AAVS?

It was 70 or 71 when they merged and that's when they integrated the schools. Now THAT was different.... Now, that was an experience because they bussed us from inner city out.... Now we went from predominantly Black schools to predominantly White schools.

-Clara, South East Raleigh

Currently, there is evidence of a correlation between segregation at the community and school level and participation in the AAVS. But did court-ordered desegregation influence language patterns among African Americans in the urban South? If so, what might such evidence indicate about the potentially distinct influences of community and school segregation on language variation? The second analysis explores this question through an apparent-time comparison of African American participants from Raleigh, NC, who attended schools prior to court-ordered desegregation and after desegregation occurred.

1971 was a landmark year in Raleigh, NC, as the historically African American High School, Ligon, closed its door with the introduction of desegregation via bussing. Prior to this moment all European American schools were located in communities that were at least 97 percent European American, while

all African American schools were located in census tracts to the Southeast that were at least 95 percent African American. Schools reflected community demographics at that time due to the pervasive community segregation that grew out of post-World War I suburbanization (Benjamin, 2012). Eleven of our participants from the Southeast Raleigh (SR) Project, born between 1917 and 1947, grew up attending Ligon High under these segregated conditions. As illustrated by Clara's quote above, African-American students in Raleigh born after 1963 faced a dramatically different landscape, attending a range of newly integrated high schools in the region. As a comparison to participants who attended segregated schools, I include nine participants born between 1963 and 1991, seven from the SR Project and two from the FPG project who attended schools in the Wake County district after court-ordered desegregation. All SR interviews were conducted by African American fieldworkers in 2009-10. For this analysis, 1,466 tokens of front lax vowels were semi-automatically measured in Praat and normalized using techniques described in Lobanov (1971).

As detailed in Section III, during the early part of the 1970s the Research Triangle was not only experiencing social change associated with the Civil Rights era, but economic change associated with the New South also led to the rapid immigration that triggered the reversal of the SVS in Raleigh, NC. Do African Americans who began attending newly integrated schools at this time demonstrate linguistic changes associated with these monumental social shifts?

Figure 4 illustrates normalized F1 and F2 values from Raleigh participants for /æ/ and /ɛ/. Raised and fronted front lax tokens align with the AAVS, while retracted tokens are associated with the incoming sound changes associated with European Americans in the region. Tokens from participants who attended segregated schools are shown with circles and tokens for those who attended integrated schools are shown with triangles. Pre-integration participants appear to have more fronted tokens for /æ/ and /ɛ/. However, the most apparent trend is the large amount of overlap between the two groups.

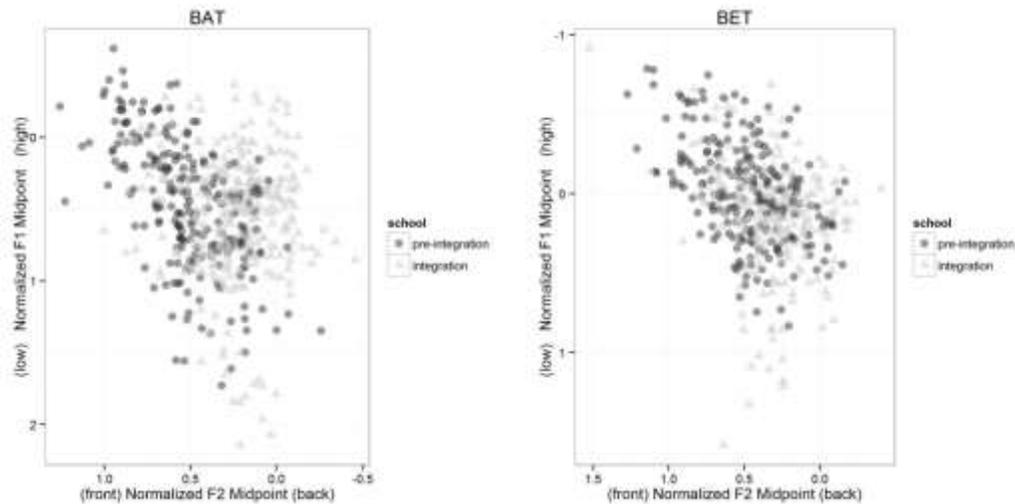


Figure 4: Normalized F1 and F2 values for /æ/ and /ɛ/ for pre- and post-integration participants in Raleigh, NC

While mixed model regressions indicate that these groups significantly differ on the F2 dimension of /æ/ (-.18, $t = -2.59$, $p = .018$) and /ɛ/ (-.12, $t = -2.37$, $p = .029$),^{xii} effect sizes are much smaller than either phonetic factors or the effect of school segregation observed in Study 1. Further, there is no apparent-time pattern of lowering as would be expected given the strong correlation between F1 /æ/ and /ɛ/ values and school demographics observed in Study 1.

However, the results of the apparent time analysis may be weak because so few students experienced demographic changes as a result of integration efforts. Three of the participants attend schools that clearly do not match the demographic profile of their home community, allowing for a closer look at the distinct influences of community and neighborhood segregation: Dora, Clara, and Daniel. Figure 5 displays boxplots of normalized F1 /æ/ values for pre- and post-integration speakers. Notably, Dora, who was born in 1987, appears as an outlier. She has a lowered front lax vowel system consistent with the incoming urban European American sound change. Dora attended Southeast Raleigh High, a predominantly African American school (76 percent African American). However, Dora chose to attend this school because of its prestigious magnet program. Rather than residing in Southeast Raleigh, the residential district for the school and a historically African American neighborhood, Dora grew up on

the border of Cary, in Morrisville, the epicenter of 1960s' immigration that triggered the reversal of the SVS. Dora's community experience is likely to encourage contact with European Americans participating in the reversal of the SVS, leading to her participation in this sound change.

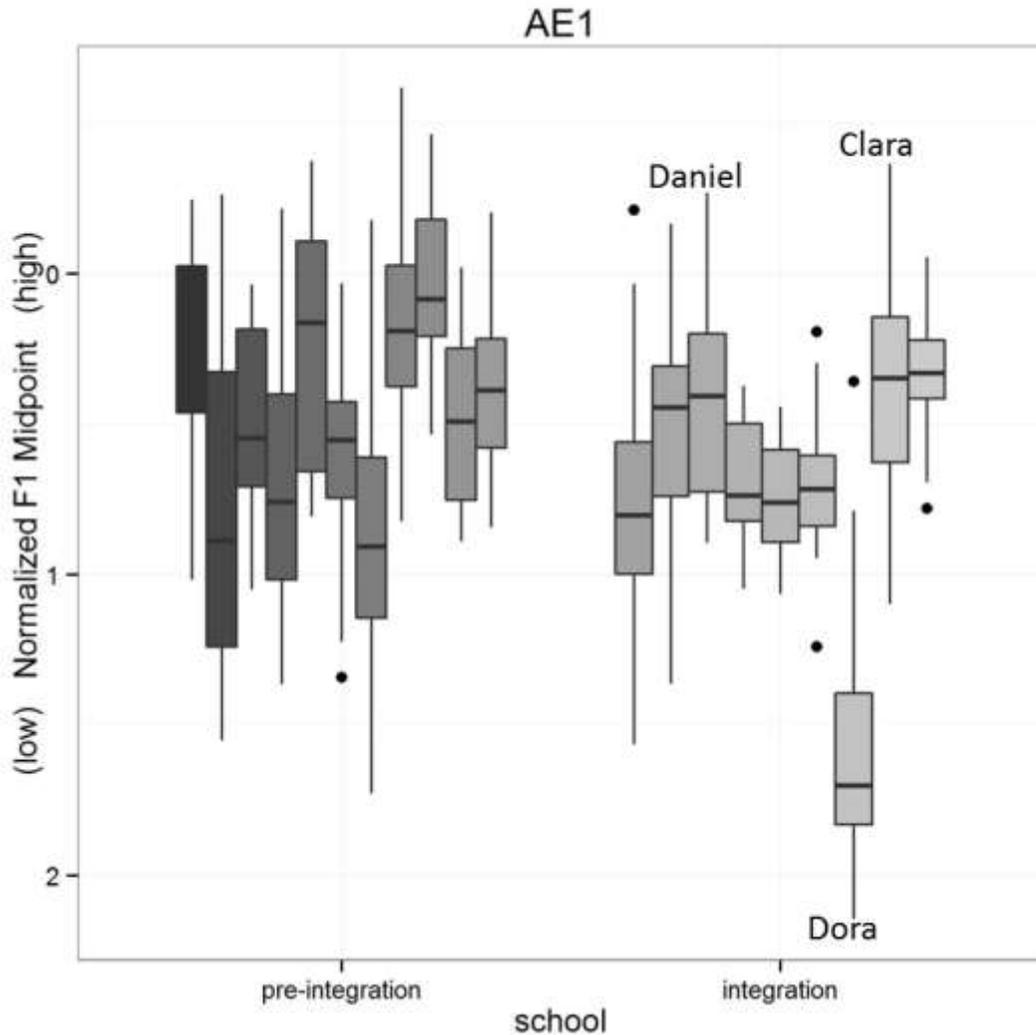


Figure 5: /æ/ normalized F1 by speaker

Clara and Daniel, on the other hand, serve as a point of contrast to Dora. Clara, born in 1963, lives in South Park, the hub of the downtown African American community. She attended segregated schools until the third grade, but was bussed to Cary High, a predominantly European-American school, for high school. Even though she experienced contact at school with European Americans, her vowel system

aligns with the AAVS as /æ/ is raised in the vowel space. Similarly, Daniel, born in 1972, grew up and continues to live in the same community as Clara. He also attended a predominantly European American High School, Broughton High. Yet, he clearly aligns with the AAVS. For these two speakers, integration at the high school level appears to have had a minimal effect on production. Our few clear examples of students whose communities do not match the demographic makeup of their school indicate that community norms may trump school norms. Still, this result must be taken with caution as it is based on a limited number of case studies. Further, high school may be too late a time point for evaluation. It is possible that Clara, Daniel, and Dora were more influenced by earlier educational institutions such as their elementary schools. Additional investigation is necessary to disentangle the effects of community and school demographics on participation in sound changes. More ethnographic approaches also are necessary to elucidate the influence of school-internal patterns of segregation related to various structures such as educational tracts or magnet programs, for example.

V. School or Community?

Study 1 suggests that school and community demographics influence participation in incoming European American sound changes. Yet, surprisingly, the apparent-time analysis in Study 2 shows few differences between individuals who attended schools before and after segregation. These preliminary results suggest that community segregation levels may be a more powerful predictor of participation in European American sound changes than school demographics. Yet, these results must be approached with caution. The contemporary analysis offers little perspective on the independent role of schools and communities precisely because community and school demographics have been tightly intertwined for in New South communities. Benjamin (2012) describes the impact of changing neighborhood structures on schools as Raleigh, NC, transitioned to a New South economy:

The boundaries between the races had become geographic rather than social, and that legacy of physical separation remains a fixture of urban and suburban America. Actions in Raleigh, as elsewhere, clearly demonstrate that school policy and housing markets shaped each other so extensively that a line cannot be drawn between them. (Benjamin 2012: 227)

Simply speaking, the situation that Clara, Dora, and Daniel found themselves in is an uncommon one. Within the New South, the majority of children attend schools that mostly reflect their community demographics as school district planning became intertwined with neighborhood planning during the population growth of the last 60 years. Additionally, community and school demographics are likely to become increasingly intertwined as the Supreme Court backs away from any intervention in school assignment (Clotfelter, et al. 2013). Just as it may be difficult to tease apart the individual impacts of school policy and housing markets in spatial segregation, the linguistic impact of these combined forces are likely to be so intertwined that they must be considered in-tandem.

While the individual contribution of school and community segregation is difficult to disentangle, there is clear evidence that spatial segregation to some degree influences African American participation in European American sound changes. Although this study focuses on New South communities, these findings may provide a unifying explanation for African American communities that show evidence of participating in European American sound changes (see, for example, selected studies in (Yaeger-Dror & Thomas, 2010)) and those that do not (e.g. (Labov & Harris, 1986)) as such differences could reflect the extent to which community members experience spatial segregation.

Although this current analysis focuses on the impact of broad demographic patterns as well as larger school policies within the context of the New South, linguists may also wish to consider the impact of such variables as academic tracks and the establishment of social networks within the school. These factors may intensify patterns of segregation that exist at broader levels such as school district

demographics or county-wide demographics. Yet, even in the absence of these more ethnographically-informed investigations, the patterns identified in this study demonstrate the real linguistic impact of segregation in the New South.

VI. References

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ⁱⁱ Northside Neighborhood (www.townofchapelhill.org) and Pine Knolls are two historically African American neighborhoods in Chapel Hill, NC, with Northside dating back to the post-reconstruction era (www.jacksoncenter.info).

ⁱⁱⁱ About 1/5 of Durham public school students would need to change schools to have all schools reflect the demographic makeup of the county (Clotfelter, et al. 2013).

^{iv} Originally 30 participants were included in the analysis. However, one speaker, 1078, moved from a school with a low African American population to a school with a high African American population. The participant's speech did not adjust to match peers rendering 1078 an outlier. As such, this participant was excluded from the analysis.

^v Correlations between school segregation and front lax vowel raising at different time points are available for 20 of the speakers in Kohn (2014). I focus on the adult interview because interviews are longer and of better quality at this time point, and because no consistent pattern of change in front lax vowel raising was apparent between age 16 and 20 for the initial 20 participants included in the analysis.

^{vi} Regression models included speaker as a random effect, and preceding place of articulation, following place of articulation, following voicing, duration, and percentage of African American students in the high school, as fixed effects.

^{vii} Note that due to minor fluctuations in the student body, and due to differences in birthdates, start dates, and failures to matriculate, there are minor differences in the demographic characteristic of a school across the cohort as some participants attended the same school in different years.

^{viii} K280 begins school in Durham, but finishes in the county system. 1057 moves frequently to a number of locations. Both students are included in the “Other” category due to difficulty placing them firmly in the Chapel Hill or Durham category.

^{ix} Note that 1057 is coded as “other” because, although he attended Hillside High in Durham, NC, at the point of his high school interview, he frequently moved around the state in pursuit of a career in basketball.

^x Only 4 percent of the student body would have to be moved to have equal representation in Chapel Hill Schools (Clotfelter, et al. 2013).

^{xi} All school demographic information can be found at (North Carolina Public Schools Statistical Profile, n.d.)

^{xii} Regression analyses included speaker as a random factor, previous place of articulation, following place of articulation, following voicing, and duration as fixed factors in addition to the variable of interest (generation). Results for F1 for both /ɛ/ and /æ/ showed no significant difference between generations and effect sizes were smaller than on the F2 dimension.