

# Ethnicity and Sound Change: African American English in Charleston, SC

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## 1 Introduction

The main research question in this study concerns the degree to which African Americans have been participating in the sound changes reshaping the dialect of Charleston in the last few decades (see Baranowski 2007). Specifically, is the direction of the changes the same as in the white population? Are they acquiring the innovations at the same rates? Finally, do different kinds of changes, i.e., vowel mergers vs. vowel shifts, show the same patterns of propagation in the two communities or is there interaction between ethnicity and type of change?

The larger context for these questions is the so-called divergence debate, i.e., the question of the divergence or convergence between the two vernaculars. There is sizeable evidence that, at least in large non-Southern cities, such as Philadelphia, Chicago, Detroit, or New York City, African Americans have not been participating in the sound changes defining those major urban dialects, i.e., they usually have a more conservative sound system. As a result, African American English sounds different from the dialects of the white population in each of those cities, and the two ethnic varieties may continue to be diverging further (Labov and Harris 1986, see also Labov 2010:ch. 16). At the same time, African American English has been described as uniform across the non-Southern urban areas of the U.S., forming an ethnic variety with little regional variation. This claim has been challenged recently (e.g., Wolfram 2007, Thomas 2007, see also Yaeger-Dror and Thomas 2010), suggesting that a more in-depth analysis of AAE phonology might reveal that this premise was no longer valid. Since Charleston has been undergoing a number of vigorous sound changes in the last few decades (Baranowski 2007), it is a particularly fitting testing ground for the role of ethnicity in sound change in progress and for the divergence or convergence question.

The evidence will come from two sets of phonological and phonetic changes found earlier in the white population: two mergers in progress, the low-back merger and the *pin-pen* merger (Baranowski 2013a), the unmerging of the vowels in words such as *beer-bear*, *fear-fair*, etc., and the fronting of the back upgliding vowels /uw/ and /ow/, as in *two*, *goose*, and *so*, *goat*, respectively (Baranowski 2008).

## 2 Methods

The study is based on 60 sociolinguistic interviews with African American Charlestonians whose parents were local to the area, 32 females and 28 males, aged 7-88, with most speakers below the age of 30. Seventeen of the interviews were conducted by the author and forty-three interviews were conducted by African American interviewers. Spontaneous speech was supplemented with word list reading and minimal pair tests. The speech of 20 informants has been analysed acoustically in Praat, i.e., their complete vowel systems have been measured in terms of F1 and F2 (Baranowski 2013b); the acoustic measurements have been normalized (Nearey 1977). They are compared with 90 white Charlestonians analyzed acoustically earlier. The vowel plots below are produced with Plotnik 9.3.

In addition, minimal-pair test results for 53 African American speakers are reported. The pairs used for the low-back merger were *cot-caught*, *Don-dawn*, *hawk-hock*, and *collar-caller*; the pairs used for the *pin-pen* merger were *pin-pen* and *him-hem*. The speakers read out each pair and said whether in their speech the two words sounded the same, close but slightly different, or different.

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The speakers' judgments of each pair, i.e., their perception, were scored as 0, 1, or 2, respectively. Their actual production was scored (by the author) in the same way. The scores are compared with minimal-pair results obtained previously for 97 white Charlestonians (Baranowski 2013a). The results of the minimal-pair tests and the acoustic measurements are entered as dependent variables in a series of multiple linear regression analyses in DataDesk 6.2.1; the tables below report the factors that have come out as significant.

### 3 Results

#### 3.1 Low-back Merger

Both minimal pair tests (Fig. 1) and acoustic measurements (Fig. 2) show that African American Charlestonians are acquiring the low-back merger and are moving in the same direction as white Charlestonians. In fact, they may be slightly ahead in losing the distinction, though the most robust evidence comes from speakers below the age of 30, where the two populations match each other's rates closely (Fig. 1).

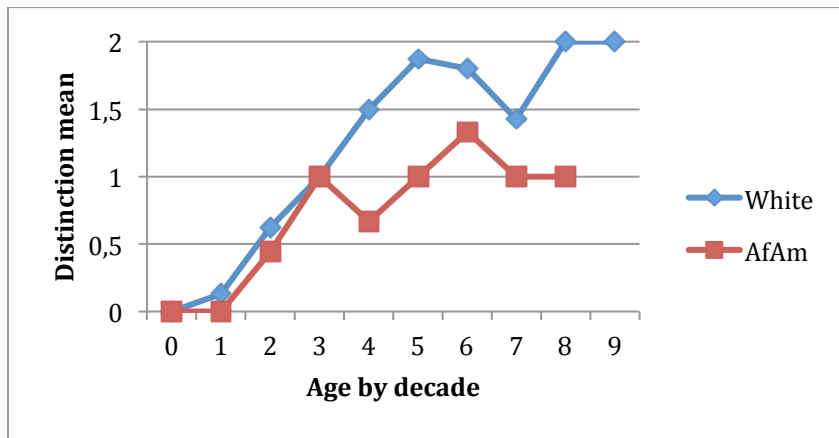


Figure 1: *cot-caught* minimal-pair test by decade (149 speakers); perception; 2=distinct, 0=same.

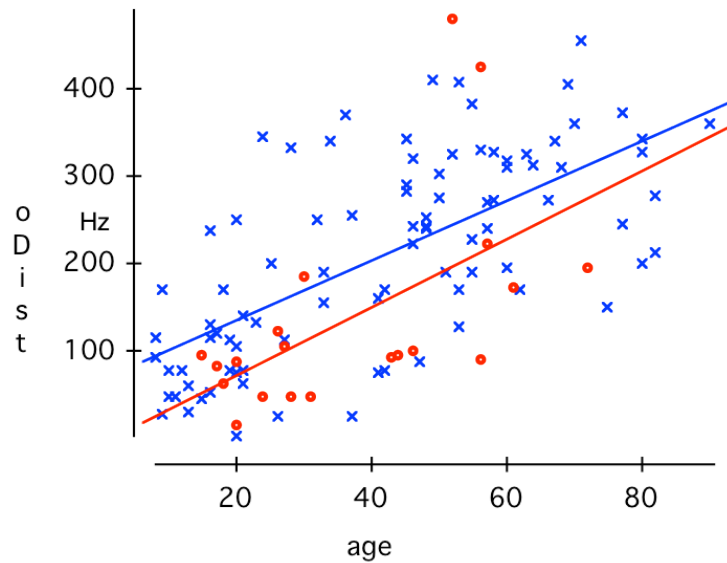


Figure 2: Cartesian distance between /o/ (*cot*) and /oh/ (*caught*) by age (110 speakers); circles: African American, crosses: White.

3.2 *Pin-Pen Merger*

Similarly, the two populations are acquiring the *pin-pen* merger at roughly the same rates (Fig. 3). Acoustically, there is no statistical difference between the two groups; age is the only significant factor in the acoustic approximation between the two vowels in F1 for each ethnicity (Fig. 4).

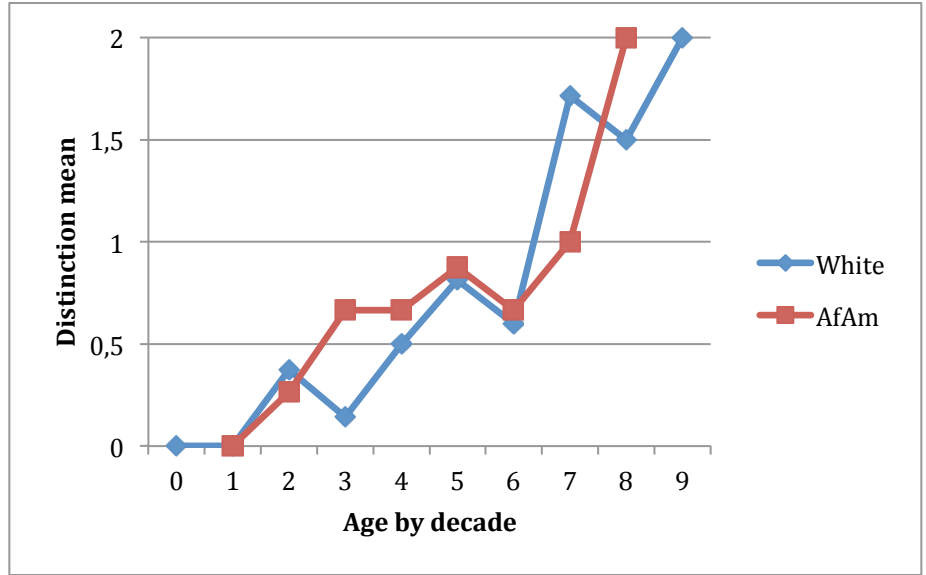


Figure 3: *him-hem* minimal-pair test by decade (146 speakers); production; 2=distinct, 0=same

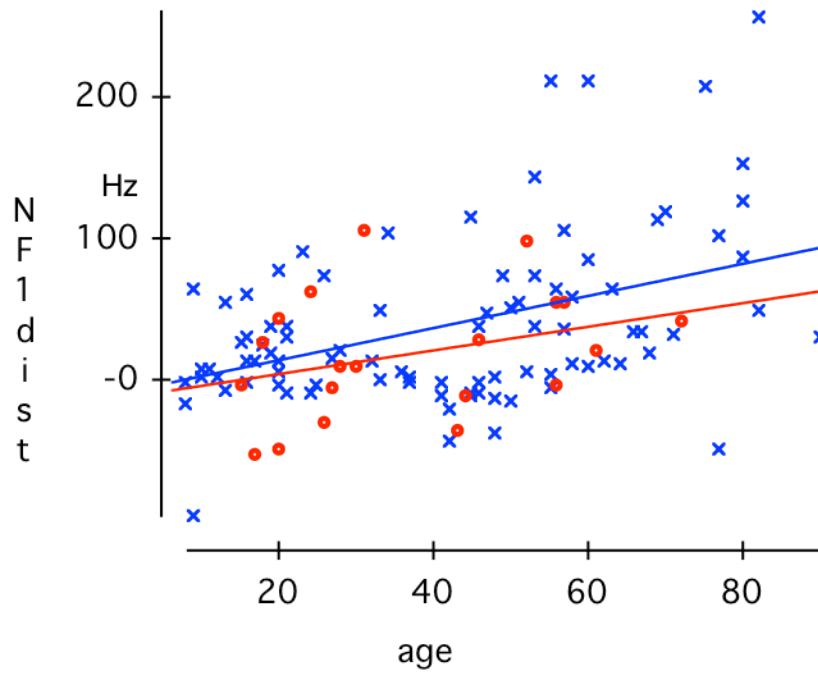


Figure 4: F1(EN)-F1(IN) difference by age (109 speakers); circles: African American, crosses: White.

### 3.3 Unmerging of *Beer-Bear* Merger

On the other hand, African American Charlestonians are more conservative in the unmerging of the *beer-bear* merger, which is still variably present in the community (Fig. 5; Table 2). It is a relic feature of the traditional Charleston accent shared by both groups in the first half of the 20<sup>th</sup> century, likely reflecting its Gullah heritage, where the two sounds are known to be merged.

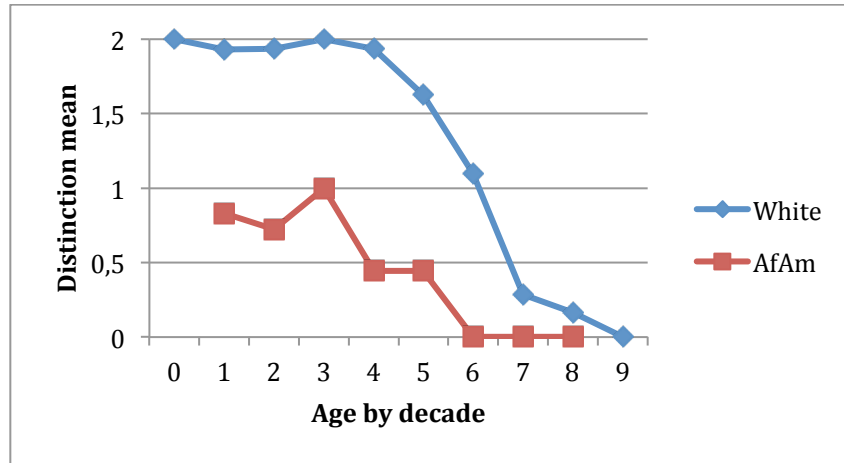


Figure 5: *beer-bear* minimal pair test by decade (150 speakers); production; 2=distinct, 0=same.

Variable	Coefficient	prob
Constant	2.5184	≤ 0.0001
Age	-0.021829	≤ 0.0001
African American	-1.10774	≤ 0.0001

Table 2: Regression analysis of *beer-bear* minimal pair; 150 speakers;  $R^2$  (adjusted) = 49.6%.

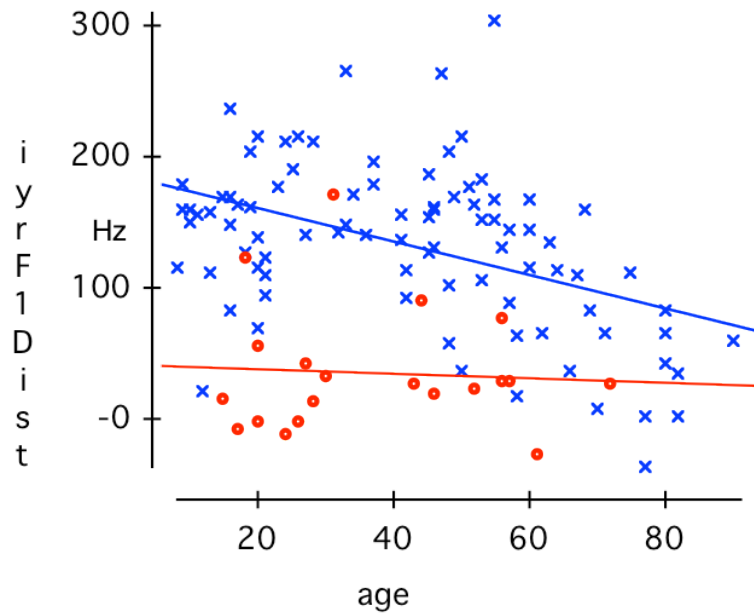


Figure 6:  $F1(\textit{bear, fair, etc.}) - F1(\textit{beer, fear, etc.})$  difference by age (109 speakers); circles: African American, crosses: White.

Variable	Coefficient	prob
Constant	170.478	$\leq 0.0001$
female	16.8173	0.1185
age	-1.10158	$\leq 0.0001$
African American	-101.813	$\leq 0.0001$

Table 3: Regression analysis of F1 distance between /iyɹ/ (*fear, beer*) and /eyɹ/ (*fair, bear*); 109 speakers;  $R^2$  (adjusted) = 39.4%.

Although the apparent time trend based on minimal-pair tests (Fig. 5) is towards increasing distinction in both populations, a large proportion of African American speakers are still merged. Importantly, whereas white speakers in their 30s and younger are almost completely distinct, there are African Americans in the same generation who are completely merged. In fact, the acoustic measurements, i.e., the F1 difference between the two vowels, suggest that whereas for white speakers there is increasing phonetic separation with decreasing age, for African Americans in Charleston, there is no significant change in apparent time away from the merger (Fig. 6; Table 3).

### 3.4 Fronting of Back Upgliding Vowels

Figure 7 plots the position of the back upgliding vowels of Helen J, 72, one of the oldest African American Charlestonians in the sample. Her /iw/, as in *dew* and *students*, is in front position, more fronted than /uw/, as would be expected for a Southern speaker of her generation. There is moderate fronting of /Tuw/ after coronal onsets (*do, two, etc.*), with the mean slightly front of centre. Her /Kuw/ after non-coronal onsets (*food, boot, move, hoot, etc.*), is at the back of the system, overlapping with /uw/ before /l/, as in *fool* or *pool*. This is different from the position of this vowel in most dialects of English today, where /Kuw/, though usually less advanced than /Tuw/, shows some fronting. Her /ow/, as in *both* and *go*, shows little fronting, being close to /ow/ before /l/, as in *goal*, and is often monophthongal. This is therefore a conservative back vowel system. At the same time, it is very similar to that found in the speech of the oldest white Charlestonians, conforming to descriptions of the traditional Charleston accent (see Baranowski 2007). The similarity extends beyond the back vowels and suggests that the two communities were quite close linguistically at the beginning of the 20<sup>th</sup> century.

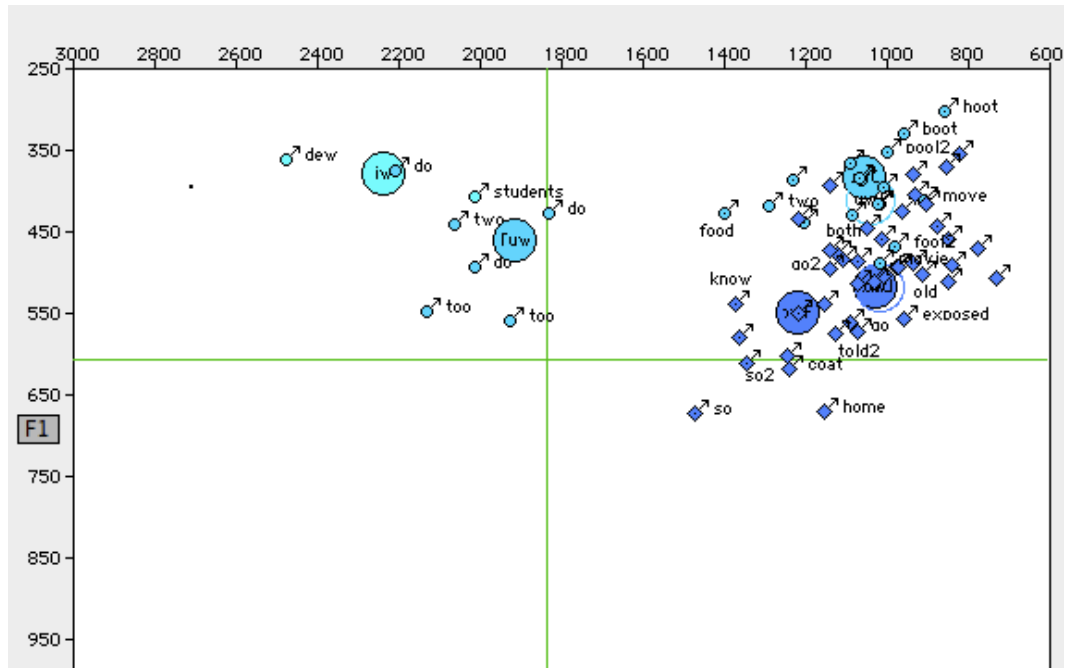


Figure 7: Helen J., 72, African American, Charleston, SC.

However, whereas white Charlestonians in the younger generations show increasingly advanced fronting of the back upgliding vowels, with /Kuw/ overlapping with /Tuw/ in front position, and /ow/ front of centre for the youngest speakers (Baranowski 2008), most African American Charlestonians in the sample regardless of age have a system virtually identical to that of Helen J, 72, above: their /Kuw/ is in back position, close to /uw/ before /l/, and their /ow/ shows very limited fronting (Figures 8-9).

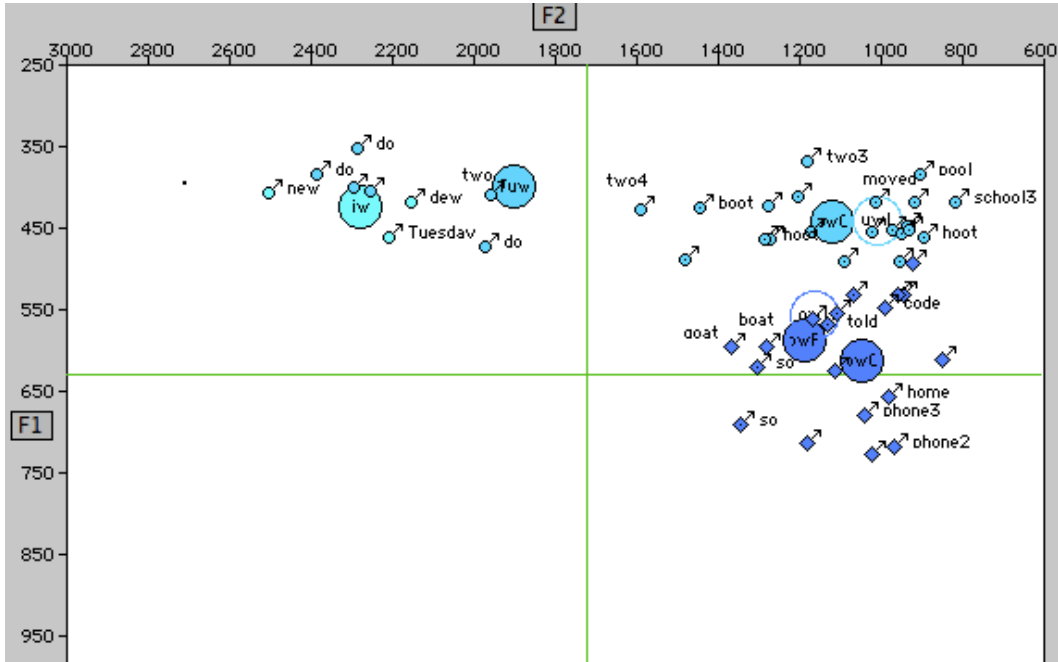


Figure 8: Shanequa, A., 24, African American, Charleston, SC.

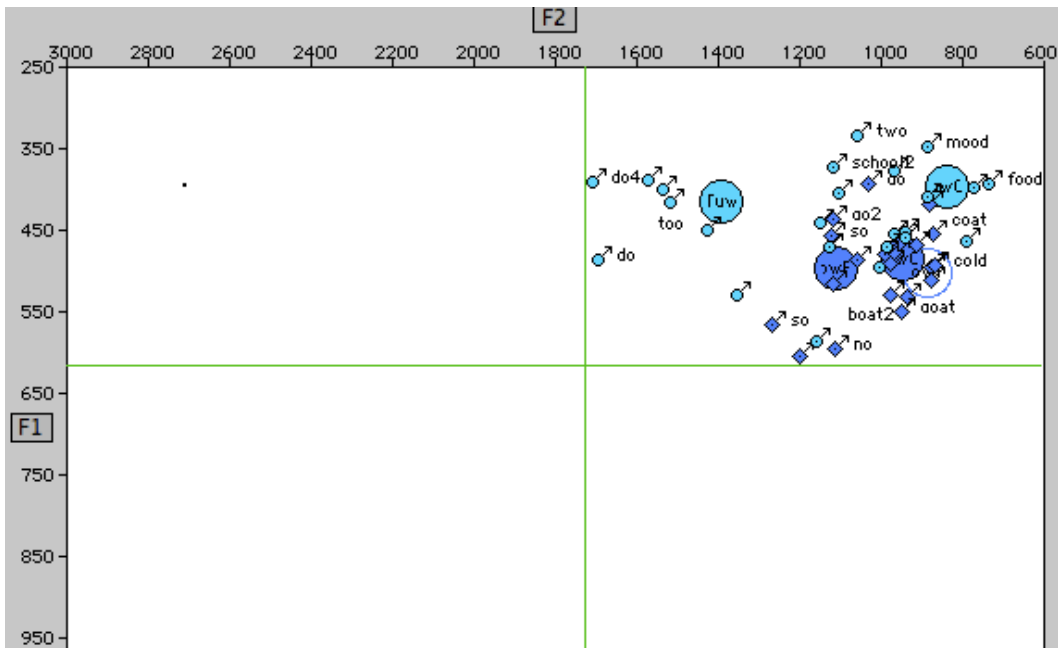


Figure 9: Keisha S., 20, African American, Charleston, SC.

Figures 10 and 11 present the mean F2 of /Kuw/ and /ow/ in checked position, respectively, by age for African American and white Charlestonians. The difference between the two populations is confirmed in multiple linear regressions reported in Tables 4 and 5.

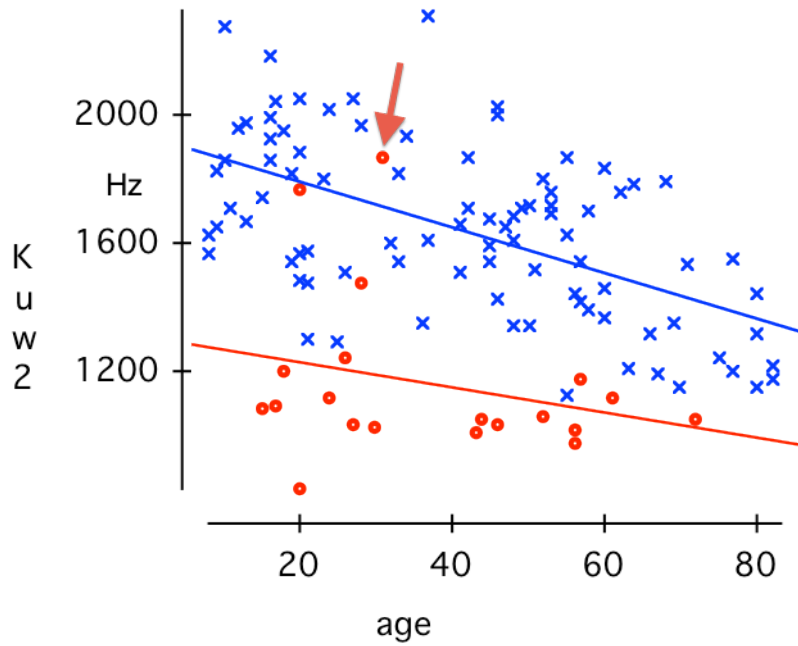


Figure 10: F2 of /Kuw/ (*goose, boot, etc.*) by age (109 speakers); circles: African American, crosses: White.

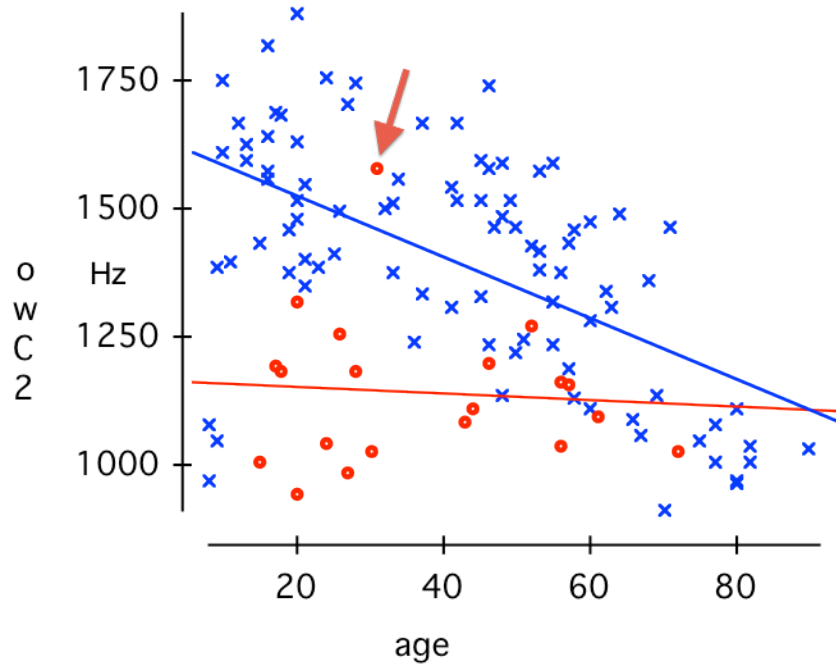


Figure 11: F2 of /owC/ (*goat, soap, etc.*) by age (110 speakers); circles: African American, crosses: White.

Variable	Coefficient	prob
Constant	1831.11	$\leq 0.0001$
Female	126.393	0.0046
Age	-6.19909	$\leq 0.0001$
African American	-503.060	$\leq 0.0001$

Table 4: Regression analysis of F2 of /Kuw/ (*goose, boot, etc.*); 109 speakers;  $R^2$  (adjusted) = 53.0%.

Variable	Coefficient	prob
Constant	1577.72	$\leq 0.0001$
Female	66.1124	0.0648 <sup>1</sup>
Age	-5.12870	$\leq 0.0001$
African American	-277.849	$\leq 0.0001$

Table 5: Regression analysis of F2 of /owC/ (*goat, soap, etc.*); 110 speakers;  $R^2$  (adjusted) = 40.3%.

There are a few outliers, the most extreme of which is 31-year-old Hanna D., indicated with an arrow in Figures 11 and 12. Her back vowels are much more fronted than those of the other African Americans in the sample (Fig. 12), with her F2 matching the values of advanced white speakers of her generation. However, she is a social outlier as well in that she went to schools, both elementary and secondary, which were predominantly white, which was not the case for most of the other African Americans in the sample. The fronted token “mostly” in Fig. 12 is from the phrase “mostly white”, which is her description of the ethnic make-up of her high school. She went to one of two private high schools in Charleston which middle and upper-middle class white children often attend. It is not surprising, therefore, that her back vowels should be as fronted as those of upper-middle class white Charlestonians, who are leading the change in the dialect (Baranowski 2008).

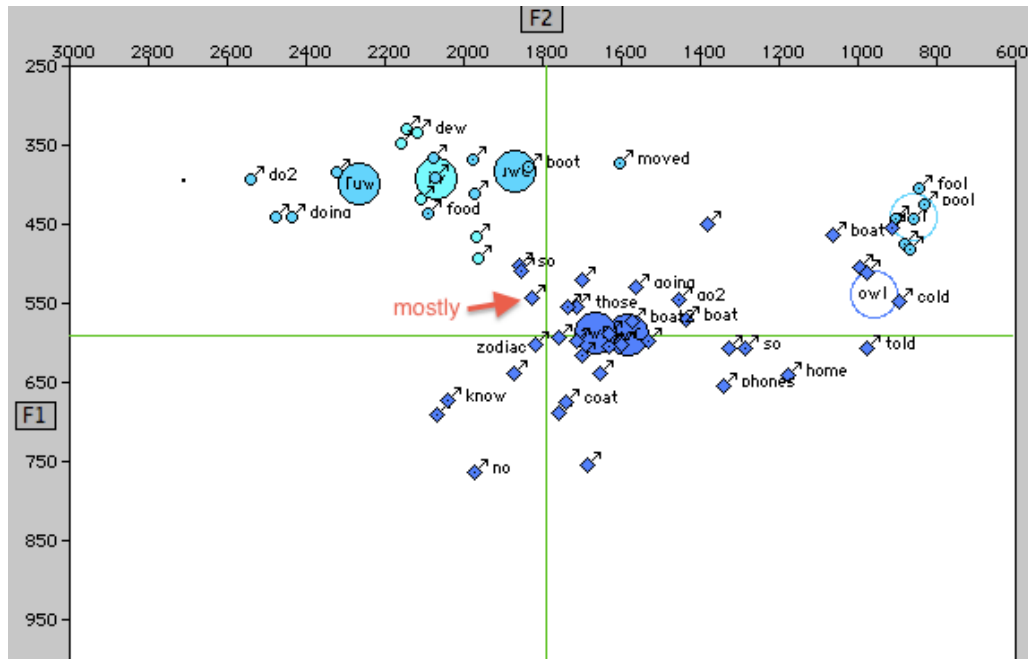


Figure 12: Hanna D, 31, African American, Charleston, SC.

<sup>1</sup> The female coefficient, showing a female advantage, is significant for the white population.



#### 4 Summary and Discussion

In summary, African American Charlestonians participate in the *pin-pen* and *cot-caught* mergers, but they are more conservative in the unmerging of the *beer-bear* merger. They show limited fronting of /uw/ after non-coronal onsets and even less fronting of /ow/; in fact, there is little indication of a change in apparent time for /ow/ with the speakers analysed so far. In terms of the divergence or convergence question then, the evidence seems to point to growing linguistic separation between the two populations in that their sound systems are more different from each other today than they were in the first half of the 20<sup>th</sup> century, not unlike in Philadelphia (Labov and Harris 1986). The increased differentiation is largely due to innovations produced by white Charlestonians transforming the dialect dramatically in the last few decades (see Baranowski 2007). It remains to be seen if African Americans move in the same direction at a later stage and follow these innovations or whether the linguistic separation continues growing, resulting in two distinct ethnic vernaculars in the city.

A more immediate question, however, is why African American Charlestonians should be participating in some of the changes but not others. That is, why should they be acquiring the *pin-pen* merger and the *cot-caught* merger at roughly the same rates as the white population but not be involved in the fronting of the back upgliding vowels? In order to answer this, we need to look at the social distribution of these changes among white Charlestonians.

The two mergers are being acquired by all social classes, with age being by far the most important predictor: young people regardless of socio-economic status are largely merged. The *cot-caught* merger is below the level of awareness and although it shows a curvilinear effect of social class, the class effect, though significant, is relatively subtle. More importantly, the highest- and lowest-status social groups are not behaving differently from each other. The *pin-pen* merger is slightly above the level of conscious awareness, with the highest-status groups lagging behind in formal elicitations, but in spontaneous speech, there is a clear progression towards merger across the social spectrum in the white population (see Baranowski 2013a).

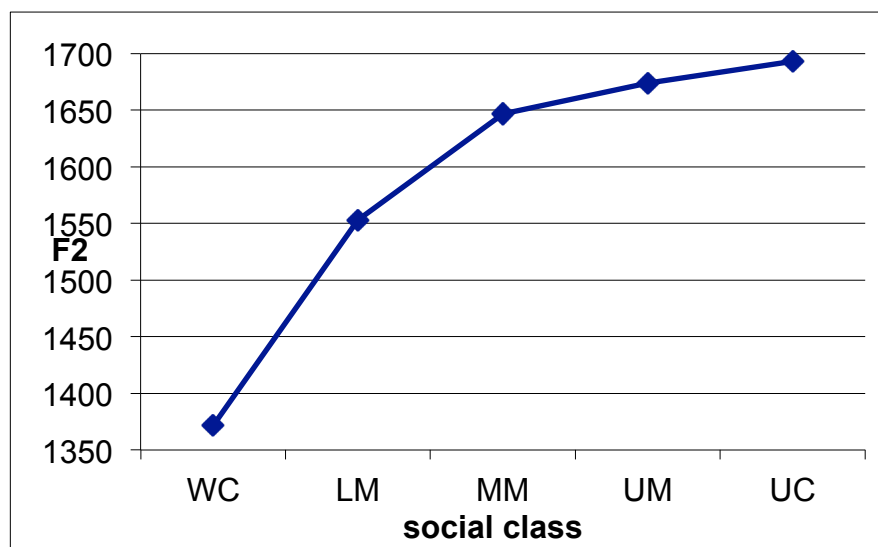


Figure 13: Expected F2 of /owC/ (*goat, soap*) by social class for white Charlestonians (from Baranowski 2008)

The fronting of the back upgliding vowels, on the other hand, displays a rather different kind of social patterning. Social class has a strong effect here: the change is led by the highest-status group (Fig. 13)—it appears to be a change from above, in terms of both the level of awareness and the direction in the socio-economic hierarchy (Baranowski 2008). In other words, it is led by a group from which African American Charlestonians are quite distant socially, and even physically. They certainly do come in contact with each other, but less so than in the past, particularly in the

linguistically formative years of their lives (see Baranowski 2007). For example, African American children and teenagers do not usually attend the same schools as white upper-middle and upper-class Charlestonians do. When that happens, as in the case of Hanna D. above (Fig. 12), they may end up with a linguistic system which matches that of white upper-middle class Charlestonians of the same age closely, with a fronted /owC/ around 1600 Hz. In most cases, however, with an expected F2 of around 1300 Hz, they are linguistically much closer to white working class Charlestonians (1370 Hz), that is, the social group which is arguably closest to them in terms of socio-economic status, and is also the last group to acquire the innovations brought into the dialect by the upper classes (Fig. 13).

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