Back upgliding vowels in earlier Baltimore English

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Abstract. What spoken-language features characterize speakers from Baltimore, Maryland, and how have they changed in apparent time? Situated in the Mid-Atlantic dialect region, Baltimore is argued to lack substantial differences with Philadelphia, though its lexical isoglosses stretch west, and it also shows Southern influences. We reveal local distinctness among Baltimoreans living in predominantly Black East Baltimore and White working-class Hampden. We phonetically analyze three back upgliding vowels /aʊ oʊ u/, which are all synchronically (though differently) fronted by these groups. Our data come from the Baltimore Neighborhood Heritage Project, which contains 232 oral history interviews with Baltimoreans born 1879–1951.

Keywords. sociophonetics; dialect; Baltimore; oral history; corpus linguistics

1. Introduction. In this paper, we investigate variation in the back upgliding vowels GOOSE, GOAT, and MOUTH in Baltimore, Maryland. Culturally, historically, and linguistically, Baltimore straddles the line between the North and South. While Baltimore English displays some features that are considered "Northern," such as raised THOUGHT and a split short-a system with raised BATH[1], it also displays characteristically "Southern" features, such as fronted back upgliding vowels and monophthongized PRICE and CHOICE. The *Atlas of North American English* (Labov et al. 2006; henceforth ANAE) classifies the dialect of (White) Baltimoreans as part of the Mid-Atlantic dialect region, which also includes Philadelphia, PA. Indeed, the ANAE does not find "any substantial differences between Philadelphia and... Baltimore" (ANAE: 238), with the cities sharing a split short-a system; a raised THOUGHT vowel; the back upglide chain shift before /r/; and fronting of the back upgliding vowels GOOSE, GOAT, and MOUTH. In these cities, GOOSE and GOAT front in both post-coronal and non-post-coronal environments, but not before /l/. Despite the similarities between Philadelphia and Baltimore, the ANAE does identify features that distinguish them: Philadelphians but not Baltimoreans are found to demonstrate *merry-Murray* near merger and FACE-raising in non-final position. Conversely, White speakers in Baltimore but not Philadelphia demonstrate CHOICE-monophthongization (Malanoski 2024-01-07) and (th)-fronting (authors' research).[2]

The earlier data from the Linguistic Atlas Project (LAP), as represented by *The Pronunciation of English in the Atlantic States* (Kurath & McDavid 1961; henceforth PEAS) present a different picture of Baltimore's regional affiliation. Though transitional in character, PEAS includes Baltimore in the Virginia Piedmont subregion of the South. Indeed, Baltimore is reported to be much more similar to Richmond, VA than to Philadelphia with respect to the back upgliding vowels. In Baltimore, PEAS reports that GOOSE is fronted to central position; GOAT is unfronted;

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[1] The short-a split is largely limited to White speakers in Baltimore.

[2] (th)-fronting is found among White speakers in one Philadelphia neighborhood, where it was apparently borrowed from Black speakers (Sneller 2020).

and MOUTH may raise before voiceless consonants but is fronted elsewhere. All of these characteristics are shared with Richmond but not Philadelphia, though with the two caveats that GOAT is reported to be "more or less fronted" among "cultivated" speakers in Maryland (PEAS: 21) and pre-voiceless MOUTH-raising is less common in Baltimore than in Richmond.

The preceding discussion primarily concerns White speakers: most of the Maryland speakers in PEAS are White, and the ANAE is explicitly focused on White speakers. Unfortunately, the literature on African American English (AAE) in Baltimore is even more scant than the already limited body of research on White Baltimoreans' English. Jeremiah (2000) reports fronted GOOSE but back GOAT among Black Baltimoreans. In a national survey of AAE, Jones (2020) likewise reports fronted GOOSE in Baltimore, but finds that GOAT is fronter among Black speakers in Baltimore (as well as neighboring Washington, DC and Philadelphia) than elsewhere in the United States (though this does not mean that it is as front as it is for White Baltimoreans). He does not explicitly discuss MOUTH in Baltimore in the text, but his Figure 4.10 suggests that the vowel is not particularly fronted in Baltimore relative to other regions.

In short, PEAS and the ANAE present different pictures of back upgliding vowels in Baltimore. In both, GOOSE and MOUTH and found to be fronted. However, the ANAE shows the robust presence of GOAT-fronting and the absence of pre-voiceless MOUTH-raising, in contrast to the reports in PEAS. Recent work on AAE in Baltimore suggests that GOOSE-fronting and, to a lesser extent, GOAT-fronting are also present among Black Baltimoreans. The differences between PEAS and the ANAE presumably represent changes in the dialect that occurred between the two projects. However, these projects are limited by their small sample sizes and their focus on White speakers, and PEAS is further limited by its lack of instrumental measurements. We build on prior reports by analyzing the acoustics of back upgliding vowels in a larger sample of Black and White Baltimoreans born in the late 19th and early 20th centuries.

2. Data and Methods.

2.1. BALTIMORE NEIGHBORHOOD HERITAGE PROJECT. Our data are drawn from the Baltimore Neighborhood Heritage Project (BNHP), a large collection of community-based oral histories gathered across Baltimore from 1978 to 1981. The goal of this project, following an era of social upheaval culminating in the riots of 1968 and significant depopulation of the city center, was to recover and present the history of seven working-class and ethnic neighborhoods in Baltimore City, thus democratizing the historical record (Shopes 1981). Locally-trained interviewers recruited neighborhood residents for detailed demographic surveys and oral history interviews, typically in speakers' homes or at local community centers. Officially, 232 speakers took part, though additional voices are captured on many recordings. Birth years range from 1879 to 1951, with a median of 1909. Interviews lasted between 30 minutes and 12 hours, and were recorded to cassette tape in 30-minute increments. Many interviews were orthographically transcribed, beginning in the 1980s. Audio and text were digitized by Aiden Faust, at the University of Baltimore's Special Collections & Archives (2011), where they remain publicly available.

The BNHP includes the following neighborhoods and collections; for each we indicate the predominant ethnicity and religion, as these are known predictors of local social behavior and potentially of linguistic variation (e.g., Fought 2006; Yaeger-Dror 2014): Highlandtown (mostly white, mostly Catholic); Hampden (white, largely Protestant); Park Heights (mostly white, mostly Jewish); Little Italy (white, largely Catholic); South Baltimore (Black and white, various religions); Old West Baltimore (Black, largely Protestant); East Baltimore (Black, largely Protes-

tant); and "Working Baltimore" (Black and White men, various religions).

2.2. TWO BALTIMORE NEIGHBORHOODS. Our analysis compares the East Baltimore and Hampden neighborhoods, which are approximately three miles apart by road. East Baltimore is close to downtown and the Johns Hopkins Hospital. Its primary housing stock was built in the mid-19th century for German and Irish immigrants. The neighborhood developed a large Jewish presence, but later transitioned from a Jewish to a Black neighborhood in a process of demographic shift that recurs throughout Baltimore's history (Pietila 2010). The BNHP histories suggest that this transition was underway in East Baltimore by the early 1900s, when many BNHP speakers were growing up. By the mid-1970s, many blocks of subsidized row houses were entirely inhabited by African Americans, and many of the neighborhood's residents attended nearby Paul Lawrence Dunbar (Junior) High School. In subsequent decades, the once-bustling business district along Harford Avenue has disappeared.

To the northwest, Hampden and Woodberry make up a "mill town" that was built beginning in the mid-19th century, along the Jones Falls River. By the late 1800s, this area was a national leader in the production of cotton duck (Bullock 1971). Workers lived within walking distance, often in housing built by the mills; they were overwhelmingly White and many came from surrounding rural areas and states (Rizzo 2008). In our sample, the vast majority of Hampden participants were born in Baltimore, but common places of origin for their parents were Pennsylvania, Virginia, and West Virginia. West 36th Street, which locals called "the Avenue," is the neighborhood's main street and is discussed frequently in the recordings. Since the 1990s Hampden and its mills have undergone gentrification (Puglia 2018), while the Avenue remains a lively district of local businesses.

Table 1 summarizes demographic information of the speakers whose interviews are analyzed here; additional speakers were examined, but audio from their interviews was of insufficient fidelity for formant analysis. Inspection of individuals' vowel plots does not reveal substantive differences between native Baltimoreans and those born elsewhere.[3]

2.3. DATA ANALYSIS PIPELINE. BNHP files were downloaded from the University of Baltimore Archive in stereo WAV (audio) and PDF (transcription) format. Audio was converted to mono, and diarization was conducted with Bleaman & Sprouse's (2023) toolkit to produce .eaf files (ELAN format) indicating which speaker is talking during a particular stretch of audio. We carried out "unification" between audio and transcription manually. The diarization output was opened in ELAN (2022), and the corresponding orthographic transcription was added at the utterance level; utterance boundaries were adjusted as needed in either ELAN or subsequently in Praat (Boersma & Weenink 2025). Following unification, the modified .eaf files were exported to TextGrid format, including speech for the interviewee only, and were checked for accuracy.

We conducted forced alignment with MFA (McAuliffe et al. 2017), followed by formant extraction with DARLA (Reddy & Stanford 2015) with no filtering of its output according to stop word status or formant bandwidth. DARLA provides acoustic measures including F1, F2, and F3 at the nucleus and F1 and F2 at 20%, 35%, 50%, 65%, 80% of vowel duration. Data were further processed according to Stanley's (2022) order of operations, meaning that first, tokens lacking

[3] A minority of speakers was born outside Baltimore. The East Baltimore speakers born elsewhere moved to Baltimore City in adulthood, at ages 35, 40, 21, and 40, respectively. The relevant Hampden speakers moved to Baltimore City at ages 15 and 1. When they were interviewed, all speakers had lived in Baltimore since at least 1945 (if not their entire lives). They were regarded as members of their community, leading to their participation in the BNHP.

East Baltimore: Black speakers, interviewed 1979						
Name	Gender	Birth year	Age	Education	Birthplace	Religion
Mary Tunstall	female	1893	85	11-12 years	Baltimore County	Baptist
Bessie Queen	female	1900	78	0-7 years	Baltimore	Catholic
Mattie Spencer	female	1900	78	13-16+ years	Virginia	Christian
Margaret Proctor	female	1904	74	0-7 years	North Carolina	Baptist
Inez Royster	female	1905	73	11-12 years	Virginia	Baptist
Myrtle Smith	female	1907	71	11-12 years	Baltimore	Methodist
Odessa Thomas	female	1911	67	11-12 years	Baltimore	Baptist
Anita Horne	female	1918	60	11-12 years	Baltimore	Methodist
Harry Queen	male	1901	77	0-7 years	Baltimore	Catholic
Hampden: White speakers, interviewed 1978						
Name	Gender	Birth year	Age	Education	Birthplace	Religion
Elmira Deitrich	female	1896	83	13-16+ years	Baltimore	Methodist
Mary Proctor	female	1902	77	0-7 years	Virginia	Christian
Hester Worden	female	1903	76	0-7 years	Baltimore	Methodist
Beatrice Reigle	female	1907	72	11-12 years	Baltimore	Methodist
Helen Lindsey	female	1914	65	11-12 years	Baltimore	Methodist
Winfield Lytle	male	1908	71	8-10 years	Baltimore	Methodist
Richard Meads	male	1910	69	0-7 years	Laurel, MD	Episcopal
Albert Arnold	male	1917	62	8-10 years	Baltimore	Methodist
Carl Burke	male	1935	44	13-16+ years	Baltimore	Presbyterian

Table 1. Demographics of speakers analyzed

incomplete trajectory data were removed; outliers were identified using the Mahalanobis distance (Labov et al. 2013; Mahalanobis 1936) function in the `joeyr` package (Stanley 2025) and subsequently removed; data were normalized, in this case according to the log-means method (Barreda & Nearey 2018) using only F1 and F2 values, via the formula's implementation in `tidynorm` (Fruehwald 2025); and a custom list of high-frequency stop words was removed.

Table 2 summarizes the token counts remaining after data processing for each lexical set under investigation. In addition, our plots include point vowels serving as visual reference points toward the peripheral corners of the vowel space. These are: /i/ preceding non-liquid consonants, or BEET; low-front /æ/, or BAT (excluding words having a tense vowel in the Baltimore/Philadelphia split short-a system); /ɑ/ before voiceless consonants, or LOT; and pre-lateral /u/, or POOL (which is also analyzed within GOOSE).

3. Results. We present a descriptive acoustic analysis of the three back upgliding vowels /aʊ/, /oʊ/ and /u/. Each lexical set is further divided into contextual allophones, according to phonological environments that commonly condition predictable variation. We divide /u/ GOOSE and /oʊ/ GOAT and into pre-lateral environments (POOL, POLL), which are expected to trigger coarticulatory backing; (non-pre-lateral) post-coronal environments (TOOT, TOE), where coarticulatory fronting is expected; and an elsewhere environment (BOOT, BOAT). We divide /aʊ/ MOUTH

Lexical set	East Baltimore	Hampden
GOOSE	849	1612
GOAT	1374	2770
MOUTH	556	1319
Total tokens	2779	5701

Table 2. Token counts per lexical set and neighborhood

into pre-voiceless environments (HOUSE), which may trigger "Canadian" raising (PEAS); pre-nasal environments (HOUND), which may favor fronting (ANAE); and an elsewhere environment (HOW).

Previous dialectal descriptions of /aʊ/, /oʊ/ and /u/ have emphasized these vowels' horizontal displacement in Baltimore English, that is, their propensity toward fronting. Such patterns are holistically captured here in plots summarizing F1 and F2 values at the vowel nucleus, typically drawn from 35% or 50% of vowel duration, taking into account the range of variation in measurements via ellipses representing one standard deviation around the mean. It is observed that certain lexical items either deviate substantially from these means or exemplify them, and we highlight such words. However, these vowels are also phonological diphthongs, meaning that they may undergo substantial vowel-inherent spectral change over their time course (Morrison & Assmann 2013). Since these formant dynamics cannot be captured by single-point measurements, we additionally plot vowel trajectories as a connected sequence of measurements from five equally-spaced time points, measured between 20% and 80% of the vowel's duration and summarized across tokens.

3.1. GOOSE AND ITS ALLOPHONES. The high, phonologically back vowel anchors the top-right periphery of the vowel space in its prelateral context, in both East Baltimore and Hampden, as shown in Figure 1 and Figure 2. Among speakers from Hampden, particularly men, postcoronal TOOT is heavily fronted, passing BAT though remaining retracted from BEET. Hampden speakers, especially women, show incipient fronting of non-postcoronal BOOT. In East Baltimore, TOOT is substantially fronted, though less than among White speakers, and the remaining two allophones are equally backed. While trajectory data show that BOOT and POOL are relatively monophthongal, TOOT shows greater dynamic change, especially for the East Baltimore male speaker.

3.2. GOAT AND ITS ALLOPHONES. The mid back vowel shows variation in both F1 and F2 according to its phonological context, as seen in Figure 3 and Figure 4. The elsewhere allophone BOAT is raised (illustrated by its ellipses and trajectories); this is primarily driven by the word *go*, which overlaps with POOL for some speakers. Additional data is needed to understand whether the lowered POLL for the East Baltimore male indicates a broader pattern. Also in East Baltimore, BOAT and POLL are fully backed, while the slightly higher F2 of TOE suggests a moderate coarticulatory effect. Besides raised *go*, two lexical patterns hold across both neighborhoods: *know* tends to be fronter than other TOE words, while *home* tends to be backer than other BOAT words. The back quality of *home* is consistent with findings in the ANAE. In Hampden, as is particularly clear in the trajectory data, POLL is backer than BOAT, while TOE approaches the center of the vowel space. These data suggest that GOAT-fronting is incipient among White speakers, driven by coarticulatory fronting, but less advanced than GOOSE-fronting. While Black speakers

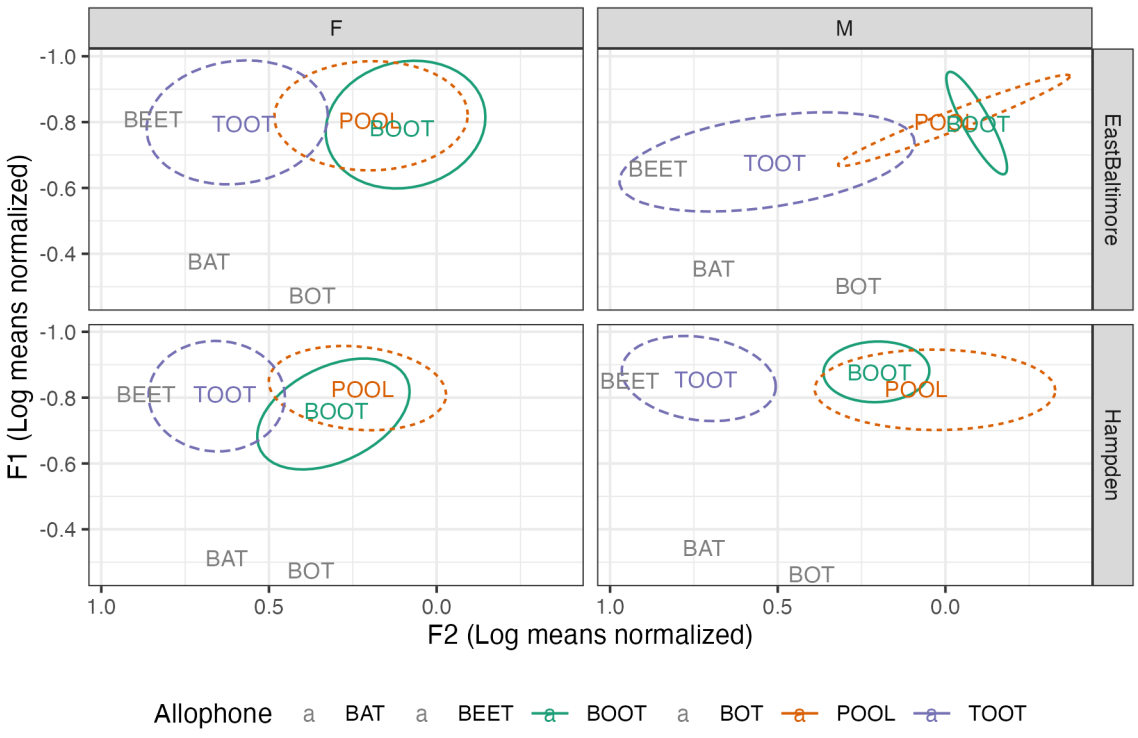

Figure 1. Nuclei of GOOSE by neighborhood and gender

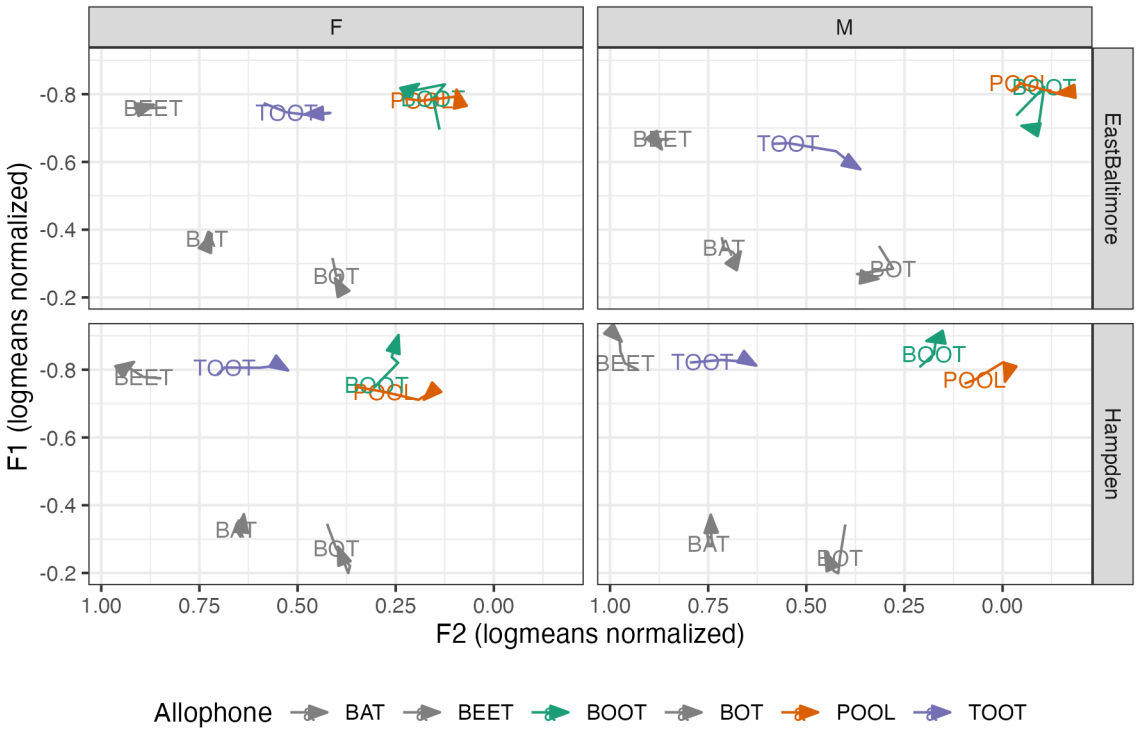

Figure 2. Median trajectories of GOOSE by neighborhood and gender

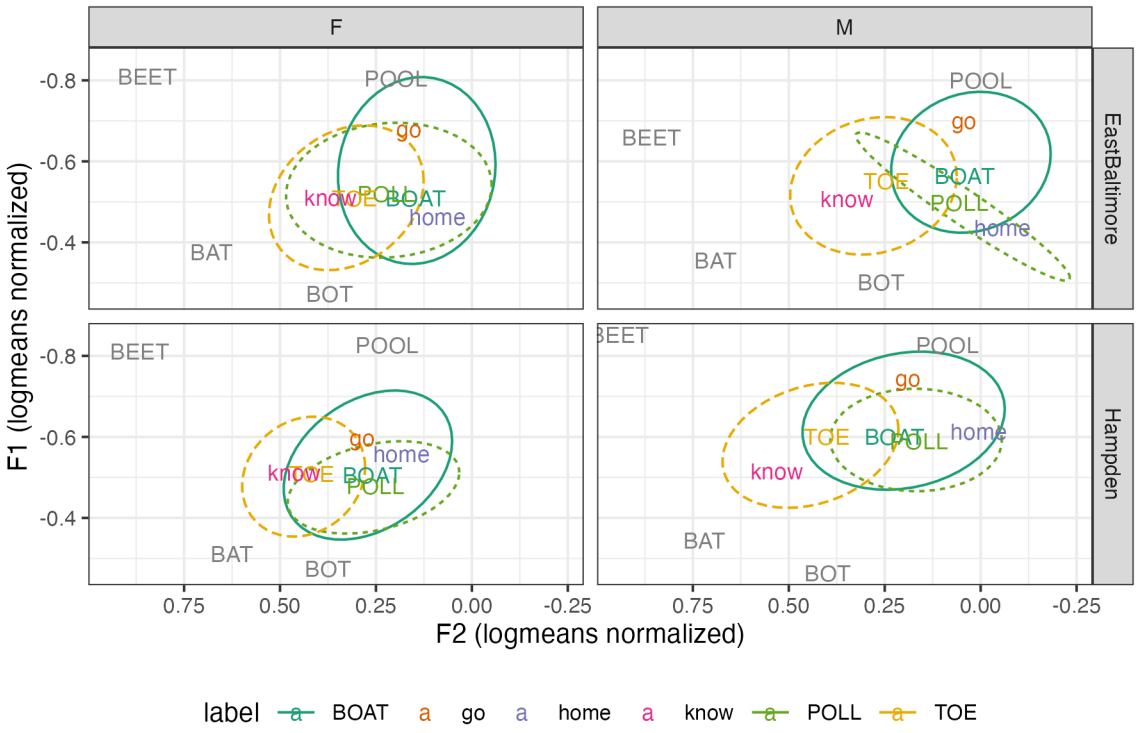

Figure 3. Nuclei of GOAT by neighborhood and gender, with mean values for *go*, *home*, *know*

demonstrate little trajectory movement in GOAT (particularly in F1), White speakers consistently produce GOAT with movement toward the high back periphery across environments.

3.3. MOUTH AND ITS ALLOPHONES. Data for /aʊ/ reveal a striking distinction between patterns for Black and White speakers, in Figure 5 and Figure 6.[4] In both communities, substantial fronting occurs before nasals and in the elsewhere environment: HOW and HOUND approach or even surpass the F2 of low front vowel BAT.[5] Consistent with findings in the ANAE, the pre-nasal environment is most advanced, and as the vowel fronts it also moves up the front diagonal (see also Labov et al. 2013). For the Hampden women, who appear to lead in fronting, mean HOUND is not just fronter but higher than BAT. Although the elsewhere context HOW tends to be less fronted than HOUND, the lexical item *now* shows comparable fronting to pre-nasal items (Fig. 5).

While Black and White speakers pattern similarly for HOW and HOUND, they diverge markedly in their treatment of pre-voiceless HOUSE. In East Baltimore, HOUSE is retracted and variably centralized, phonetically [ɑ̟ʊ] or [ɐʊ]. As can be seen particularly clearly from trajectory data, it overlaps very little with the fronted variants, and instead overlaps heavily with BOT, illustrated with the specific and salient lexical items *about*, which also tends to raise phonetically, and *out*. This pattern, with aural confirmation, indicates that Black Baltimoreans have two phonetically

[4] Mary Proctor (who was born in Virginia and moved to Hampden in 1917, at age 15) exhibits pre-voiceless MOUTH-raising, as PEAS finds in her native state.

[5] In Fig. 5, the East Baltimore male speaker's HOW includes one token, of *nowadays*. A single token of *hours* was excluded from this lexical subset due to its much lower F2 value.

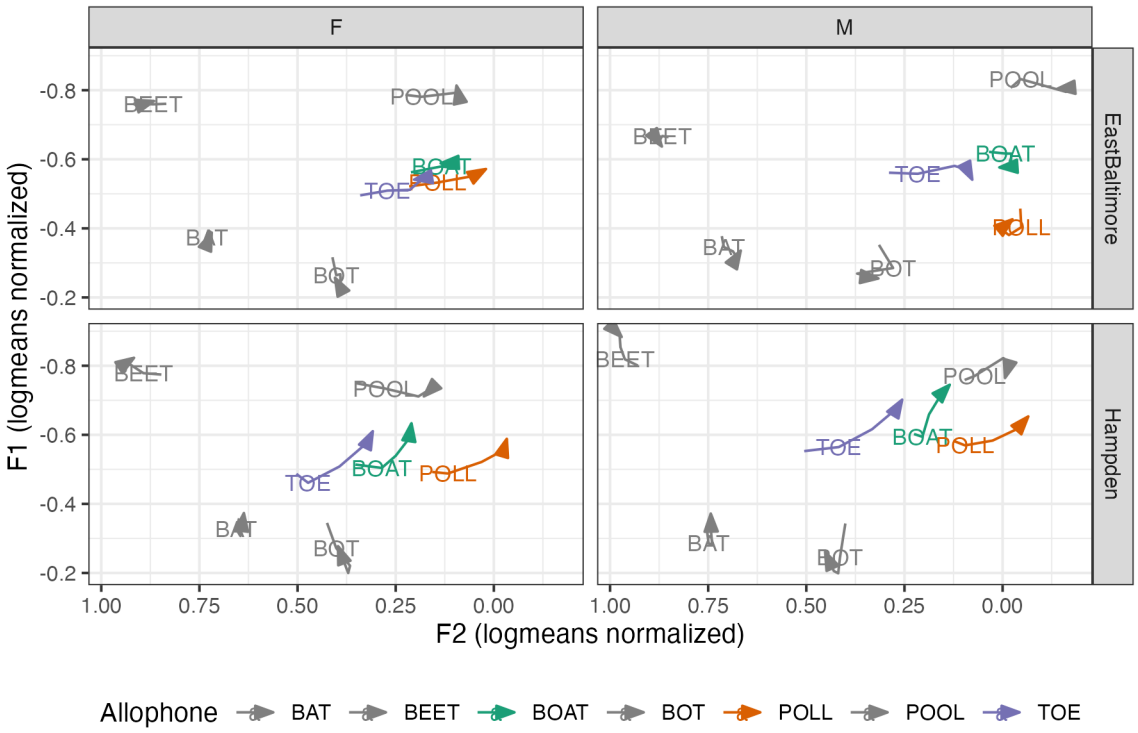

Figure 4. Median trajectories of GOAT by neighborhood and gender

distinct, contextually-dependent variants of MOUTH. In Hampden, there is substantial overlap between HOW, HOUND, and HOUSE, both at their nuclei and throughout their trajectories: these contexts do not appear differentiated in phonetic space. Among White speakers, sub-allophonic differences that do occur (e.g., the lengthened trajectory of HOW compared to HOUSE) can be accounted for by gestural undershoot due to durational shortening in the pre-voiceless context, as is common for American English (Peterson & Lehiste 1960).

4. Summary and Discussion. Our analysis has treated the back upgliding vowels /aʊ/, /oʊ/ and /u/ in a corpus of Baltimore English, representing speakers who reached adulthood in the early twentieth century. Phonetic evidence demonstrates that post-coronal GOOSE has fronted considerably, with a high F2, and post-coronal GOAT is undergoing a similar process; in other phonological contexts, the *back* nature of GOOSE and GOAT is supported. MOUTH is heavily fronted and raised, although in prevoiceless contexts Black speakers retain a distinct backed variant.

Among the vowels examined here, several differences and commonalities appear across the two neighborhoods. Black speakers in East Baltimore use fronted GOAT less commonly, and their MOUTH resists fronting before voiceless consonants, instead displaying variable "Canadian" raising in this environment. For White speakers in Hampden, however, fronted GOAT is more common, MOUTH fronts in all environments, and "Canadian" raising is absent. Nevertheless, across both communities we find variably fronted GOOSE after coronals; fronted GOAT in *know*, alongside a back, raised realization in *go*; and fronted and raised MOUTH before nasals and in the lexical item *now*.

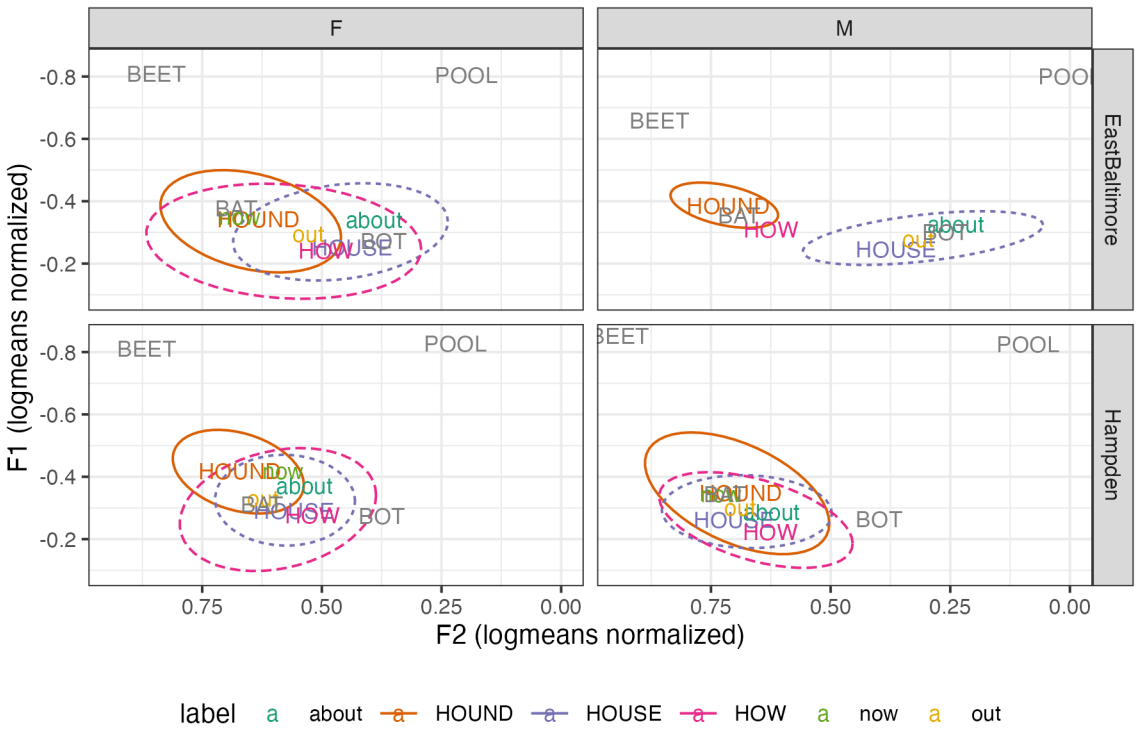

Figure 5. Nuclei of MOUTH by neighborhood and gender, with mean values for *now*, *about*, *out*

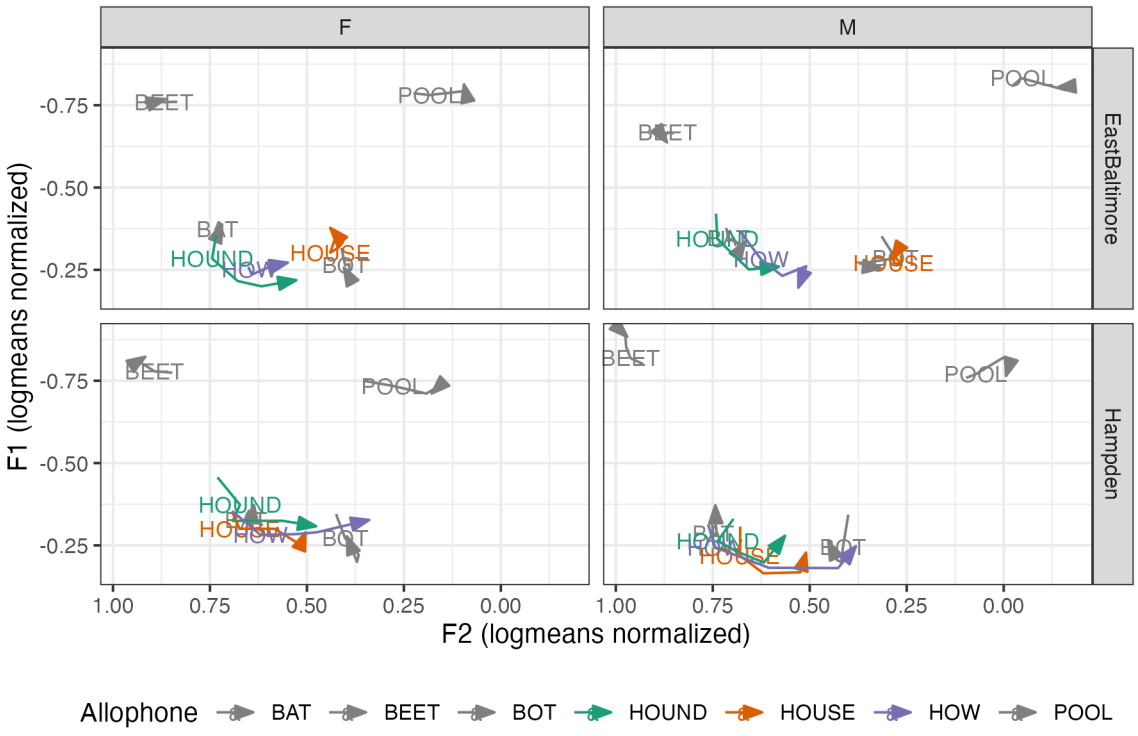

Figure 6. Median trajectories of MOUTH by neighborhood and gender

4.1. CONCLUSIONS. This analysis has demonstrated substantial, systematic variation across communities within a major US metropolitan area. Given the neighborhoods' geographic proximity, a social explanation for these differences presents itself.

First, Baltimore is a highly segregated city. In the early 20th century, when most of the BNHP participants came of age, Baltimore was characterized by de jure racial segregation practices (Pietila 2010), and extensive de facto segregation persists in the Baltimore metropolitan area to this day (Massey & Denton 1989; Massey & Tannen 2015). Until the *Brown v. Board of Education* decision, Baltimore's public schools were racially segregated, and throughout the early and mid 20th century, a combination of city laws, urban planning decisions, and restrictive housing covenants restricted Black Baltimoreans to certain sectors of the city (Pietila 2010; Crenson 2017). While multiple authors (e.g. Arnold 1990; Crenson 2017) have commented on the relative lack of racial tension surrounding desegregation, Hampden, like other Baltimore neighborhoods with a large proportion of Southern migrants (Durr 1996), was an exception to this generalization: Hampden had an extensive Ku Klux Klan presence which violently forced out Black Baltimoreans who tried to move to Hampden or open businesses in the neighborhood (Rizzo 2008, 2010). Finally, Hampden was generally isolated, not just from Black Baltimoreans but from the city as a whole, because of its geographic location and because many Hampdenites worked within the neighborhood, limiting their exposure to other Baltimoreans (Rizzo 2008). These patterns of segregation and isolation would be expected to contribute to linguistic differentiation between the Hampdenites and the East Baltimoreans (Labov 2010; Duncan 2018; Kohn 2018).

Additionally, different patterns of migration affected White and Black neighborhoods in Baltimore. The main migration affecting Black neighborhoods was the Great Migration, which brought Black migrants to Baltimore from the South Atlantic coast. Conversely, the main migrations affecting White neighborhoods were international migrants from Europe and internal migrants from Appalachia. Notably, PEAS reports that pre-voiceless MOUTH raises throughout the South Atlantic Coast in this period (except for coastal North Carolina, where fronting is more common) but fronts in West Virginia and Upland Virginia and North Carolina. These different patterns of migration may be a factor in why pre-voiceless MOUTH-raising is present in East Baltimore but largely absent from Hampden.

However, it should not be forgotten that in spite of these factors favoring differentiation, the Hampden and East Baltimore speakers still demonstrate remarkable linguistic parallels. The conditioning on GOOSE and GOAT appears identical between the neighborhoods, with fronting present in post-coronal environments but largely absent elsewhere. Additionally, both neighborhoods front MOUTH in non-pre-voiceless environments. Finally, the neighborhoods share lexical effects for *know*, *go*, and *now*. These commonalities may be related to the fact that Baltimore has had an extensive Black population throughout its history, though they remained a minority until the 1970s. This contrasts with many Northern cities, which did not have a significant Black population prior to the Great Migration (Thomas & Yaeger-Dror 2010). Consequently, Black Baltimoreans may have been more integrated into Baltimore's linguistic community than Black speakers in cities like New York or Detroit simply by virtue of the fact that Baltimore's Black community had existed for much longer.

We conclude by reflecting on the relevance of these results for our understanding of Baltimore in the broader regional context of the Mid-Atlantic, and potentially points further South. The Black speakers' patterns echo those reported in Washington, DC (Arnson & Farrington 2017), specifically raising of pre-voiceless /aʊ/, which is linked to the Virginia Tidewater and Pied-

mont regions (Thomas 2001). DC speakers in the early twentieth century also exhibit fronted GOOSE, especially postcoronally, although the East Baltimore speakers' BOOT remains more backed. Compared to Black speakers' patterns in Philadelphia, where MOUTH remains back despite robust fronting among White Philadelphians (Labov & Fisher 2015), the presence of fronted MOUTH found in Baltimore is divergent.

In Hampden, the feature of fronted and raised MOUTH by White speakers is shared with Philadelphia (Labov et al. 2006) and Washington, DC (Lee 2016). Overall, the White speakers presented here appear transitional between the speakers in PEAS and those in the ANAE. Contrary to the findings of PEAS, these speakers demonstrate no pre-voiceless raising of MOUTH, and for some White speakers in the sample, MOUTH fronts and raises past TRAP with a counterclockwise trajectory, contrasting with the [æʊ] transcribed in PEAS. In these respects, the Hampdenites' MOUTH vowel is quite similar to the ANAE's reports. On the other hand, GOOSE and GOAT are only fronted post-coronally in these data, whereas ANAE reports fronting in both postcoronal and non-post-coronal environments. Moreover, the degree of fronting for GOAT is significantly less than what would later develop; in later generations, the most advanced speakers have GOAT fronter than TRAP (authors' fieldwork).

To conclude, the BNHP is a rich source of historical and linguistic data, which samples not just Hampden and East Baltimore but six other speaker groups whose analysis will form a basis of comparison for investigating language change in Baltimore during the twentieth century. Because of Baltimore's distinctive history—with a significant Black population as old as the city itself, and with historical patterns of segregation affecting not just Black also Jewish Baltimoreans—the BNHP provides a unique opportunity for investigating (i) regionality in African American Language and (ii) the effects of segregation on language variation and change. The neighborhood-based structure of the corpus also provides the opportunity to investigate neighborhood effects in linguistic variation (see Baranowski 2022), and the natures of the neighborhoods themselves allow for the investigation of the role of religion and ethnicity. Future research will expand the analysis of the BNHP to other neighborhoods and other linguistic features to address these topics.

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