

Uncovering a focused Lebanese American English ethnolect in Dearborn Michigan

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This study presents findings from a quantitative analysis of inter- and intraspeaker phonetic variability in the realization of /t/ and /d/ from second- and third- generation Lebanese American speakers from Dearborn, Michigan. The realization of /t/ and /d/ as either alveolar or dental (a substrate feature from Lebanese Arabic) is the focus of the analysis. The data, which come from 2006 corpus recordings, are also subject to diagnostics for a focused ethnolect i.e. the retention of distinctive features into the third and later generations of a speech community. These diagnostics are derived from new-dialect formation and ethnolect formation models. Evidence is found for a focused Lebanese American English ethnolect in Dearborn though the findings are tentative due to a small dataset. The results of the study lay the foundation for future work, which will seek to confirm these findings in greater detail.

1. Introduction

The term '*ethnolect*' tends to be reserved for varieties of a majority language that have been modified through a period of bilingualism in an immigrant community (Eckert 2008). Ethnolectal varieties of U.S. English differ from external supralocal varieties of U.S. English in systematic ways. They may include substrate features from non-English L1s that are not present at all in the grammar of other varieties, such as nasalized vowels in Cajun English (Dubois & Horvath 1998, 1999). They may also or alternatively have transfer features that function as sociolinguistic variants alternating with supralocal variants, such as tense Latinx English [in] alternating with supralocal lax [ɪn] and [ɪŋ] in suffixal *-ing* (Kendall & Thomas 2019). In some cases, features of an ethnolect may be borrowed from other varieties, such as the use of AAVE r-lessness by Latinx English speakers (Hartford 1975; Galindo 1987). 'Ethnolect' is used variably in the sociolinguistic literature to refer to the English spoken by first-generation bilinguals from a specific ethnic group, as well as to the English spoken by subsequent generations (who may be monolingual in English). The vagueness of the term is problematic, as will be discussed further in this paper.

The most commonly studied ethnolects in the United States are African American Vernacular English (AAVE) and Latinx English, as well as some dialects of English spoken by European immigrants and Jewish immigrants (Boberg 2012).¹² Outside of these groups, research on U.S. English ethnolects has been relatively sparse (though see e.g. some work on Cajun English by Dubois & Horvath (1998, 1999), Chinese English by Wong (2007) and Zheng (2018) and Native American English by Leap (1993) and Newmark et al. (2016)). As for the English spoken by Arab Americans, research on this topic has been extremely limited, despite the fact that there are over 3.5 million Americans of Arab descent, and over 500,000 in Michigan alone (Arab American Institute 2015). A goal of this paper is to provide some of the first sociolinguistic description of the English spoken by this group, with a focus on Lebanese Americans in Dearborn, MI.

What makes this particular speech community unique within the scope of ethnolect research is the fact that these Lebanese Americans reside in an ethnic enclave – where the minority Arab ethnic group form the majority of a particular neighborhood. This provides the potential context for an ethnic variety to undergo *focusing* (Le Page & Tabouret-Keller 1985) i.e. the retention of distinctive features into the third and later generations. Most researched ethnolects in the United States are not focused: though distinct features are found for an ethnic group, this is usually in the first and second generation. By the third generation, those features dissipate and the dialect converges with the supralocal external variety (as seen in Purnell (2010) and Rankinen (2014)). Therefore, another goal of this study is to test the hypothesis that a focused Lebanese American English ethnolect has formed in Dearborn.

In order to achieve this goal, an initial set of diagnostics for a focused ethnolect must be laid out. Since the large majority of research on ethnolinguistic variation do not discuss the concept of *focusing*, dialects such as AAVE and Latinx English along with any first- or second-generation immigrant English all end up being grouped into the same broad category of ‘ethnolects’. This lack of a clear distinction between focused ethnolects and ethnolects that are not focused greatly restricts our understanding of ethnolinguistic variation, as will be discussed later. Synthesizing across relevant literature on ethnolinguistic variation, new-dialect formation and dialect contact, this paper will identify the major characteristics of focused ethnolects with regard to speech production,

¹ Although ‘immigrant’ is of course not the appropriate term for the slave ancestors of contemporary speakers of AAVE.

² I also acknowledge that AAVE did not develop through second language acquisition, unlike the other immigrant varieties mentioned. The origins of AAVE are complex and still highly debated.

speech perception and social embedding. This is one of the first studies to use focused ethnolect diagnostics and also consider the research benefits of distinguishing between ethnolects that are focused and those that are not.

Data for the present study come from a 2006 corpus of short interviews with nine individuals (Bakos 2012), all from the second and third generation of Lebanese Americans in Dearborn. These data were subjected to a quantitative analysis of intra- and inter-speaker phonetic variability in the realization of /t/ and /d/. While these segments are typically alveolar stops in mainstream U.S. English, all speakers in the Bakos corpus also realize them as dental stops. Results show that this is the case even for third-generation speakers, providing preliminary support for the hypothesis that a focused Lebanese American ethnolect has formed in Dearborn.

2. Background

2.1. Variation and ethnicity in the United States

Research on ethnolects of English in the United States has existed since the birth of modern variationist sociolinguistics. According to Boberg (2012), this research has focused primarily on African American Vernacular English (AAVE), Latinx English and what Boberg broadly refers to as “European-American” Englishes such as Jewish-American English, Italian-American English and more.

The earliest systematic studies of AAVE date back as early as Wolfram (1969), Labov (1972) and Dillard (1972). These studies identified several grammatical and phonological features that distinguished AAVE from other varieties of U.S. English. Since then, AAVE has been investigated extensively (see Ash & Myhill 1986; Edwards 1992; Mufwene et al. 1998; Rickford 1999; Lanehart 2001; Green 2002 and more), becoming the ethnolect with the most scholarly attention.

There has also been a large amount of academic attention devoted to American-born Latinx English speakers. Earlier work examined the distinctive linguistic features of Puerto Rican English in New York City (Wolfram 1974; Poplack 1978) while more recent research has centred on Chicanx English (see Bayley 1994; Carter 2007; Fought 2002, 2006; Mendoza-Denton 2008; Penfield & Ornstein-Galicia 1985; Santa Ana 1996; Thomas 2019). Fought (2002) and Thomas (2019) present comprehensive overviews of the ethnolect in its various forms across the U.S., discussing the features transferred from Spanish (such as dental

realisation of /t/ and /d/ as well as /z/-devoicing) and also the influence of AAVE.

European-American ethnolects have also received significant attention. Labov (1966) explored how Jewish, Italian and Irish groups were (or were not) taking part in the typical Anglo vowel shifts of New York City. Laferriere (1979) looked at phonological change among these same groups in Boston. Carlock & Wölck (1981) and Wölck (2002) report on phonological differences between the German-, Polish- and Italian-origin communities in Buffalo, NY, while Rose (2006) found that distinctive linguistic features for German American speakers of English correlated with various intricate differences in German identity. Of the European-American ethnic groups, Jewish English has had the most scholarly attention. Some of this research has been focused on discourse and morphosyntactic features (Feinstein 1980; Tannen 1981) while others have provided a phonological analysis (Benor 2009, 2010; Laferriere 1979).

However, outside of these three groups, research has been relatively sparse. Though efforts have been made to address this issue (see Dubois & Horvath (1998, 1999) for Cajun English; Wong (2007) and Zheng (2018) for Chinese English; Leap (1993) and Newmark et al. (2016) for Native American English), there remains much to be learned about U.S. ethnolinguistic variation. For example, the social factors that may dictate inter- and intraspeaker variation within the Lebanese American community of Dearborn may differ greatly compared to the social factors affecting inter- and intraspeaker variation within a particular AAVE-speaking community. Without exploring more ethnic groups, we fail to enrich our knowledge of the field as a whole.

This project makes a contribution to the study of ethnolinguistic variation by exploring inter- and intraspeaker phonetic variation in the production of two phonetic/phonological features in the English of second- and third-generation Lebanese Arabic speakers, a community that is underrepresented in the field. However, one must not assume that these speakers will display any signs of an ethnolect. I will now explain what a focused ethnolect is and how it forms, followed by a justification of the hypothesis that a focused ethnolect has formed in Dearborn.

2.2. What is a focused ethnolect?

Focusing (see Le Page & Tabouret-Keller 1985) is the process by which a new variety acquires norms and stability. It is viewed by Trudgill (2004) to be the final process of new-dialect formation. Focusing typically occurs in

the third generation of speakers in a migrant community. It should be noted that the majority of research on new-dialect formation has been for contexts where everyone in the speech community is a migrant to a new (or newly colonized) locality, such as the ‘New Town’ of Milton Keynes, UK, established *de novo* in the 1960s (Kerswill & Williams 1999, 2000, 2002) and the colonial context of New Zealand, beginning with British settlers in the 19th century (Trudgill 2004). Additionally in these cases, all of the migrants to the new locality speak the same language. However, Thomas (2019) presents a model of ethnolect development which is similar to Trudgill’s model, but which allows for the possibility that (i) the locality is already an established speech community and (ii) the in-migrating group does not necessarily speak the same language as the majority in the existing speech community.³

Like Trudgill, Thomas describes focusing as the final stage of dialect – in this case, ethnolect—formation. This stage too is said by Thomas to involve third-plus-generation speakers. In the second generation of the newly-formed speech community (or of migration to the existing speech community), there is what Trudgill describes as “*extreme variability*”. This refers to both inter- and intraspeaker variation. When a dialect/ethnolect focuses, this extreme variability is levelled out (extreme variability is discussed in more detail in the next section).

Not all ethnolects undergo focusing. As mentioned previously, Trudgill’s model of new-dialect formation assumes that when migrants move in, there is no pre-existing community in the area, therefore the dialect contact that leads to levelling and focusing is between members of the in-migrating group(s), as was the case for example in Milton Keynes, UK. This is not the case for most U.S. ethnolects where an immigrant group moves into an already established speech community. As a result of the fact that the immigrants are typically in the minority of a speech community numerically, and that adopting the language of the majority may be key to their economic advancement, focusing does not take place. While first-generation and possibly second-generation speakers of the immigrant group display substrate features from the L1 language, these features dissipate by the third generation and the ethnic dialect converges with the external variety – (as seen in e.g. Mendoza-Denton & Iwai (1993), Purnell (2010) and Rankinen (2014)). For example, Rankinen (2014) found that in a well-established Finnish American community in Marquette County, MI, while

³ I acknowledge that in colonial contexts, there were prior speakers in the locality whose languages and cultures were decimated by colonial languages. The influence of these languages and cultures on the colonial languages is, however, minimal in comparison to the U.S. ethnolect development context.

the second generation displayed a vowel space with substrate effects from Finnish, the third (and subsequent) generations of English-speaking monolinguals were removed from these substrate effects and displayed more local norms. Rankinen suggested that the reasons for this were a shift away from Finnish culture in the third generation, out-migration and high inter-ethnic marriage rate.

However, ethnolects may still undergo focusing under specific circumstances. In areas where U.S. minority ethnic groups form the majority of a particular neighborhood or city such as in the Cajun communities of southern Louisiana (Dubois & Horvath 1998, 1999) or the Chicano-majority areas in California studied by Fought (2002) and the African-American majority Detroit studied by Wolfram (1969), it is likely that a unique and focused contact variety develops (Cheshire et al. 2011). Such areas are known as ethnic enclaves. The reason for unique varieties emerging in ethnic enclaves is because of a combination of a dense ethnic community and close neighborhood and family ties which leads to what Winford (2003) calls ‘group second language acquisition’ where the target language is acquired through unguided informal second-language acquisition in friendship groups. Focused ethnolects form when a large number of linguistically (and ethnically) homogenous speakers are heavily concentrated in a small area, acquiring English together in the same social setting. The second generation tend to be bilingual, speaking their L1 as children and then acquiring English together in their friendship groups, often at school, creating a contact situation and a period of vernacular reorganization and incrementation (Labov 2001). Some of the second generation maintain bilingualism while others do not. Whether the ethnolect persists into the following generations and subsequently focuses depends on social factors such as intra-ethnic ties being stronger than inter-ethnic ties and the mobility of these speakers outside of the neighborhood being relatively low. If this is the case, subsequent generations will acquire the English of the second generation and this is where the focusing happens.

2.3. How to diagnose a focused ethnolect. Why is it important?

Before presenting the diagnostics for a focused ethnolect, I will outline why it is important to diagnose focused ethnolects and why distinguishing between ethnolects that are focused and those that are not is beneficial to sociolinguistics.

Over the decades, the sociolinguistic literature has typically referred to long-established ethnic varieties like African American and Latinx English as ‘ethnolects’, but has also used this term to refer to the English spoken by

first-generation immigrants and second-generation bilinguals. In contrast, research on new-dialect formation with L1s pays a great deal of attention to the distinction between focused and non-focused dialects. Thomas (2019) points out how the distinction also obtains for ethnolects. Attending to it more closely is beneficial to our understanding of ethnolinguistic variation because ethnolects that have focused and those that are not (first/second-generation ethnolects) are fundamentally different with regards to variation.

There is a degree of difference between generations with respect to both inter- and intraspeaker variation. First-generation adult migrants typically show L2 learner features (Thomason & Kaufman 1988; Thomason 2001) and often do not acquire the patterns of sociolinguistic variation found in the target language community. Any inter- and intraspeaker variation found in the first generation is typically random and unsystematic (Hoffman & Walker 2010; Meyerhoff & Schlee 2012; Mougeon et al. 2004). Second-generation speakers often show systematic inter- and intraspeaker variation, however this variability is “extreme” relative to the majority speech community. According to Trudgill, the absence of a stable adult norm or a peer-group dialect within the (im)migrant speech community for second-generation speakers means that children pick features “at will from a kind of supermarket” (Trudgill 2004: 108). Thomas makes a similar point with regard to second-generation variability, stating that the second generation rigorously evaluates the social value of first-generation features, and that these evaluation processes by individuals leads to “considerable diversity in their speech” (Thomas 2019: 301). Consequently, the second generation displays i) extreme inter-speaker variation as each individual utilizes a wide range of variants in varying ways linguistically and socially, and ii) extreme intra-speaker variation due to the wide range of variants available to one individual. From the perspective of new-dialect formation literature, ethnolects that are not focused are not fully formed dialects. They are koinés.

When a dialect/ethnolect focuses in the third generation, this extreme variability is levelled out as i) alternate realizations from the second generation are reduced to one variant for most variables (this levels out intra-speaker variation), and ii) certain variants of a variable are “reallocated” to a specific linguistic or sociolinguistic function (this levels out inter-speaker variation). While the inter- and intraspeaker variation of second-generation speakers is systematic, they do not tend to show more strategic use of variants in their speech such as style-shifting until the third generation when focusing and reallocation occurs – here, the variation is more stable and, from the perspective of new-dialect formation, the variety becomes a dialect. This difference between focused and non-focused ethnolects becomes an issue when studies of ethnolinguistic variation group

the second, third and subsequent generations together in their analysis despite these key differences.

Another reason that it is important to draw a line between ethnolects that are focused and those that are not is that focused ethnolects are more salient to non-linguists – Kerswill and Williams (2002) refer to this as ‘folklinguistic awareness’. According to Kerswill and Williams (and Preston 1996a, 1996b), focused dialects are more recognizable by non-linguists as a variety that belongs to a particular social group. With regard to ethnic groups, this means that a non-linguist can hear particular linguistic features of a focused ethnolect and correctly associate that speech with a particular ethnicity (providing they are sufficiently exposed to it). For example, many U.S. English speaker can associate t/d deletion with African Americans (Casasanto 2010), or /z/-devoicing with Mexican Americans. This is more difficult to do with varieties that are not focused since they often have a wide range of variants for one variable. For example, Hirson and Sohail (2007) find that Punjabi-English bilinguals in London, UK have six possible phonetic realisations of /r/. McKenzie (2015) also demonstrates how British participants have clear conceptions of dialects that are focused such as Indian English, Tyneside English and Scottish English. However, they did not hold categories of ethnic varieties that were not focused such as first/second-generation Thai British English speech. For sociolinguists working on the perception of ethnolects by non-linguists, this is an important point to bear in mind.

2.3.1. The diagnostics of focusing

Given the information above, I propose that in order to diagnose an ethnolect as focused in the U.S., it must meet five main criteria:

1. There must be evidence of linguistic features that are not present in mainstream U.S. English in the third-plus generation.
2. There is less extreme inter-speaker variation in the third generation relative to the second generation – meaning that speakers in the third generation show more similar rates of production of variants compared to the second generation.
3. There is less extreme intra-speaker variation in the third generation relative to the second generation – meaning that the number of variants per variable that an individual produces is reduced in the third generation.

4. There is evidence of reallocation – meaning that for the variables that have more than one variant in the third generation, these variants are assigned specific social or linguistic functions.
5. The variety spoken by the third-plus generation must be identifiable by non-linguists (who have been previously exposed to it) as being associated with the ethnic group.

I propose that criterion 1 is a sufficient condition for diagnosing focusing while the others are necessary conditions. In other words, if criterion 1 is met and there are distinct ethnolectal features found in the third-plus generation, the ethnolect is assumed to be focused and the other four conditions are assumed true as well. Nevertheless, any data collected for is tested against all criteria for the purposes of assurance.

All of the Lebanese American speakers in the Bakos corpus appear to produce phonetic features that are not present at all in the external variety of U.S. English, namely dental realizations of /t/ and /d/. This would support criterion 1 above, but the data must first be carefully explored using acoustic techniques. The corpus is too small for a convincing test of criterion 2, but nonetheless some conclusions can be drawn regarding inter-speaker variation across the generations. Testing criterion 3 will not be possible since I am analysing just two variants per variable in this study and not the potential reduction of multiple variants from the second generation to fewer in the third generation. Some tentative conclusions are possible with regards to reallocation for criterion 4. Criterion 5 is set aside for future work. Given the nature of the Lebanese American community in Dearborn (discussed below in Section 2.4.), I hypothesize the data to pass the criteria for focusing.

2.4. Is there a focused ethnolect in Dearborn?

Data for the present study come from the Lebanese community in Dearborn, Michigan. Dearborn, a southwestern suburb of Detroit, is the city with the largest percentage of Arab Americans in the United States at 40% (U.S. Census Bureau 2010). The majority of these Arab Americans live on the East side of Dearborn (Walbridge 1992). Within Dearborn, Lebanese Americans comprise the largest Arab group (Atlas 2005). This is because in every wave of Arab immigration to Dearborn, starting in the 19th century and continuing today, the Lebanese have been the most recurrent group to immigrate (Rouchdy 2002).

It is likely that a unique contact variety of Dearborn Arabic English has developed and focused here (Cheshire et al. 2011), as has already happened in other areas of the United States with dense ethnic enclaves.⁴ This is because Dearborn has a large number of Arabic speakers heavily concentrated in a small area (Walbridge 1992), acquiring English together in the same social setting. The second generation speak Arabic as children and then acquire English together when they go to schools with majority-Arab populations (Rouchdy 2002; Albirini 2018; Albirini & Chakrani 2017). This contact situation obtains during the crucial period of vernacular reorganization and incrementation (Labov 2001), making it likelier that the English acquired is subject to sociolinguistic peer pressure. Some of the second generation maintain bilingualism while others do not.

Though there is some research on the English of Arab Americans in Dearborn, no research has yet investigated if there is a focused ethnolect here. Bakos (2012) found that a vowel system has developed among American-born Lebanese Arabs in Dearborn that is in many ways unlike the external Anglo English vowel system of Lower Michigan. Samant (2011) found that shifting the vowels /æ/ and /ʌ/ in the direction of the Northern Cities Shift (Labov et al. 1972; Labov 1994; Gordon 2001) had taken on overt social prestige in high schools in Dearborn with the prestigious use led by Lebanese speakers. However, both studies were principally of first- and second-generation speakers. Analysis of third or later generations is necessary to determine whether a focused ethnolect of English obtains in Dearborn. Furthermore, both the Bakos and Samant studies are of vowel variation; there is no sociolinguistic research on consonants in the English spoken by Dearborn Arab-Americans.

3. The current project

3.1. The aim and hypotheses

In this paper, I analyse the speech of second- and third-generation Lebanese American English speakers from Dearborn. The key aims of this project are to provide a quantitative analysis of inter- and intraspeaker variation within the Lebanese speech community and to diagnose if there is potentially a focused ethnic variety. I will do this using the focused ethnolect diagnostics mentioned previously (namely Criterion 1 and tentatively Criterion 2 and

⁴ Whilst I am aware that Lebanese Arabic is not the only dialect of Arabic that exists in Dearborn (Rouchdy 2002) which makes the topic of language contact in Dearborn potentially more complex, I anticipate that Lebanese Arabic is likely the standard of Arabic that other Arabic speakers in the community aim to sound like since they have been settled in Dearborn the longest. This is supported by Samant (2011).

4). This project will lay the foundation for future work, which will be discussed at the end of the paper.

I will be giving a descriptive overview of the realization of two English phonemes: The alveolar stops /t/ and /d/. I will focus on the production of these consonants in syllable-onset position, both word-initially and word-medially. Initial impressionistic listening to a small dataset of Lebanese American speakers confirmed that /t/ and /d/ have dental variants in Dearborn that are not extant in mainstream U.S. English. These constitute substrate features from Arabic, which has dental stops. I hypothesize that the dental variant is a feature of a focused Lebanese Arabic American ethnolect in Dearborn. Justification for the hypothesis that there is a focused ethnolect comes from the fact that the speakers live in an ethnic enclave that has been established in Dearborn for many decades.

3.2. The corpus

The data come from recordings made by Jon Bakos in 2006 while completing his Master's degree in Linguistics at Michigan State University. For his 2008 thesis entitled "An Examination of the Adaptation to the Northern Cities Chain Shift by Lebanese Immigrants in Dearborn, Michigan", supervised by Dennis Preston, Bakos recorded interviews with Lebanese English speakers from Dearborn. Each recording includes a 20-40 minute sociolinguistic interview, a reading passage and a word list. Specific topics were discussed in the interview including immigration history, education history, knowledge of heritage language and questions such as "Do you think you have an accent?" and "Has anyone told you that you have an accent?" In total, 22 speakers were recorded, of whom 13 were first-generation immigrants to the United States and nine were second- and third-generation.

My focus will be on the nine second- and third-generation speakers (Table 1). Marcy, Ann, Paige, Luann, Kara and Susie in the first six rows represent the six baseline second generation, with whom the three post-second-generation speakers – Sally, Oliver and Calvin – will be compared. This group is coded as third-generation. The speakers are aged between 20-60 years old. Seven are female and two are male. Almost all of the six second-generation speakers are bilingual in Arabic and English; none of the three third-generation speakers are bilingual, though Sally is a heritage speaker.⁵

⁵ A heritage speaker is someone who was once bilingual but lost the ability to speak fluent Arabic.

Pseudonym	Age	Sex	Generation	Fluent Bilingual?	Heritage Speaker?
Marcy	24	F	2nd generation	N	Y
Ann	26	F		Y	-
Paige	25	F		Y	-
Luann	26	F		Y	-
Kara	27	F		Y	-
Susie	32	F		Y	-
Sally	21	F	3rd generation	N	Y
Oliver	30	M		N	N
Calvin	60	M		N	N

Table 1. A list of the speakers to be analysed, ordered by generation

3.3. /t/ and /d/

In native U.S. English, realisation of /t/ and /d/ is typically in an alveolar place of articulation [t] and [d] (Rogers 2014). In Lebanese Arabic, these stops are realized as dental [t̪] and [d̪] (Huthaily 2003).⁶ Based on initial impressionistic listening to the recordings, it seemed as if every speaker was almost exclusively using dental realisation of the phoneme in all phonological contexts. Nonetheless, some variability was present.

3.3.1. Circumscribing the variable context

Analysis of /t/ and /d/ was limited to singleton segments in syllable onset position, both word-initially and word-medially. Since the stops in /tɪ/, /tj/, /dɪ/ and /dj/ clusters are prone to becoming affricates in English (Wells 1990), onset clusters were excluded. In intervocalic position in U.S. English, alveolar tap realizations are common in U.S. English (Shockey 2003), so this phonological environment was excluded from the data extraction as well. For tokens in word-initial position but preceding a vowel in the context of an utterance, only alveolar/dental stops were analysed, not taps. No tokens of /t/ or /d/ in syllable coda position were extracted since this context lends itself to a higher chance of weakening or lenition (Bérces & Honeybone 2012).

3.3.2. Token extraction

⁶ There are also velarized versions of these stops which are separate phonemes [t̪ˠ] and [d̪ˠ] (Huthaily 2003).

/t/ and /d/ tokens that conformed with the variable context described above were manually identified and segmented from the interviews and word lists in Praat textgrids (Boersma & Weenink 2019). Both consonants were segmented from the onset of the initial stop burst to the end of the stop burst. Tokens that had too much background noise were omitted from the analysis. All relevant /t/ and /d/ tokens were extracted from each speaker. The resulting final total was 811 tokens across all 9 speakers, of which 504 were /t/ tokens and 307 were /d/ tokens (Table 2).

Pseudonym	N /t/ tokens	N /d/ tokens
Marcy	50	37
Ann	85	47
Paige	14	13
Luann	65	30
Kara	21	13
Susie	32	28
Sally	34	17
Oliver	27	13
Calvin	176	109
Total	504	811

Table 2. Number of /t/ and /d/ tokens analysed for each speaker

3.3.3. Coding

3.3.3.1. Dependent variable /t/ and /d/

Tokens of /t/ and /d/ were coded as either alveolar or dental. There are subtle acoustic differences between alveolar and dental stops that I relied upon for this coding. Dentals cause a greater depression in the onset F2 of following vowels (Fasola et al. 2015) and alveolar bursts are louder than dental bursts on average (Jongman et al. 1985; Sundara 2005). Sundara (2005) also found that the standard deviation of burst frequency is lower for alveolar stops, that the kurtosis of burst frequency is higher for alveolar stops, and that the center of gravity (COG) is, on average, higher for alveolar stops than dental stops. For this analysis, I opted to use Sundara’s findings to help me code the stops as alveolar or dental. Although there is some overlap in the COG between alveolar and dental stops, Sundara found that for /t/, a burst COG below 3000Hz for males and females could reliably be coded as dental, and a kurtosis above 2.5 for males or females could reliably be coded as alveolar. For /d/, a burst COG below 3000Hz for females and below 2500Hz

for males could reliably be coded as dental. I used this information to code the stops in my data. This coding was done within the textgrids.

When coding for /t/, I measured the COG and kurtosis of the stop burst. If the COG was below 3000Hz, it was coded as dental. If it was above 3000Hz, I referred to the kurtosis. If the kurtosis was above 2.5, I coded it as alveolar. If neither parameter gave me a conclusive measurement, I had to rely on impressionistic listening. This was checked for agreement by two other trained phoneticians (inter-rater reliability was 80%). For the first three speakers I coded, I checked to ensure that the acoustic parameters and my own impressions of the stop were in agreement for the first 20 tokens of /t/.

When coding for /d/, I measured the COG of the stop burst. If the COG was below 3000Hz for females or 2500Hz for males, it was coded as dental. If it was above these thresholds, I relied on impressionistic listening which was again checked for agreement by two other trained phoneticians. Similar to /t/, I checked to ensure that the acoustic parameters and my own impressions of the stop were in agreement for the first 20 tokens of /d/ for the first three speakers I coded.

3.3.3.2. Independent variables

All 811 tokens were additionally coded for the following potential predictors of variability: word position (initial vs. medial), preceding segment and following segment (coded phonetically and binned into phonological features), VOT and style (interview vs. word list). Lexical item was also recorded, for potential employment as a random intercept in the subsequent statistical analysis if necessary. /t/ and /d/ were analysed together since there were no theoretical reasons to keep their analysis apart.

3.4. Results and discussion

3.4.1. Criterion 1: Evidence of dentals in the third generation

My first proposed criterion of a focused ethnolect is that there must be evidence of linguistic features in third-generation speakers that are not present in mainstream U.S. English. By observing the number of dental and alveolar tokens for each speaker, in particular the third-generation speakers (Sally, Oliver and Calvin), we can deduce if the data matches criterion 1. If there is evidence of dental tokens for each of these speakers, then criterion

1 for a focused ethnolect is met. Table 3 shows the percentage of alveolar and dental tokens from the interview and word list recordings for /t/ and /d/.

Pseudonym	N tokens	% alveolar	% dental	Chi-square	p-value
Marcy	87	46	54	0.563	0.453
Ann	132	40.2	59.8	5.121	0.024
Paige	27	70.4	29.6	4.481	0.034
Luann	95	4.2	95.8	79.674	<0.001
Kara	34	76.5	23.5	9.529	0.002
Susie	60	21.7	78.3	19.267	<0.001
Sally	51	25.5	74.5	12.225	<0.001
Oliver	40	55	45	0.400	0.527
Calvin	285	53	47	1.014	0.314

Table 3. Percentage of alveolar and dental tokens by speaker

Sally, Oliver and Calvin produce dental tokens 74.5%, 45% and 47% of the time respectively. These results appear to meet criterion 1: Each of the third-generation speakers show evidence of dentals in their speech, providing preliminary support that this ethnolect is focused.

The chi-square and p-value were calculated for each individual to show if a particular speaker had a statistically significant preference for either the alveolar or dental variant. Significant preferences for dental are highlighted in green and significant preferences for alveolar are highlighted in blue. This statistical analysis was conducted using SPSS (IBM Corp 2019). The significance threshold was set at 95% ($p < 0.05$).

3.4.2. Criterion 2: Less extreme inter-speaker variation in the third generation

The second criterion of a focused ethnolect is that there is less extreme inter-speaker variation in the third generation relative to the second generation – meaning that speakers in the third-generation group show more similar rates of variant production compared to the second-generation speakers. Table 3 above shows that five out of six second-generation speakers show a significant preference for either alveolar or dental. Two of these speakers

prefer alveolars while three prefer dentals. The other, Marcy, does not have a significant preference. One of the third-generation speakers, Sally, has a significant preference for dentals (74.5%) while Oliver and Calvin do not show a significant preference either way. There is no uniform pattern across the second-generation speakers with regard to the usage of alveolars and dentals, suggesting extreme variability amongst the second generation. Oliver and Calvin do show a degree of uniformity regarding their proportional usage of alveolars and dentals. Both show an almost 50/50 split. However, Sally's dental preference is problematic. It is possible that this stronger preference for dentals is due to the fact that Sally is a heritage speaker unlike Oliver and Calvin, and that her language is influenced by bilingualism during the critical period. Nevertheless, there is some tentative support here for criterion 2.

3.4.3. Criterion 4: Evidence of reallocation

So far, we have tentative evidence that the data supports criterion 1 and 2 of a focused ethnolect. We cannot observe if the data meets criterion 3 (less extreme intra-speaker variation in the third generation) and criterion 5 is beyond the scope of this paper. This leaves criterion 4: evidence of reallocation – meaning that for the variables that have more than one variant in the third generation, these variants are assigned specific social or linguistic functions. As previously confirmed in Table 3, dental and alveolar realizations of /t/ and /d/ are produced by both second- and third-generation speakers. Out of the predictors of variability discussed, only Style (Interview or Word List) emerged as a likely predictor of variation. This was determined through a series of descriptive analyses and then regression modelling. With this in mind, I conducted generalized linear logistic regression modelling, fitted to the data with the tidyverse, broom and lme4 packages in R (R Core Team 2018). Simple plots were also created to represent the models visually. Before running these models, however, I had to ensure that /t/ and /d/ could be modelled together. Not only are tokens of /t/ more numerous in the dataset overall (62.1%) but they are proportionally more likely to be realized as dentals (61.5%) than is the case for /d/, of which only 52.1% of tokens are realized as dental. The apparently greater likelihood of /t/ being realized as dental requires investigation. There is no good linguistic reason to expect dentals to be more likely to persist in the second and third generation for /t/ than for /d/. A likelier explanation is that dental tokens of /t/ and /d/ are unevenly distributed across the other predictors. However, if /t/ and /d/ are indeed separate sociolinguistic variables for the Bakos speakers, they cannot be combined in the same analysis. Therefore, as a first step, I created models to test whether /t/ and /d/ should be analysed separately or not. It was found that this skew was

indeed due to an uneven distribution across other predictors, specifically Following Vowel Height. There were many more following low vowels for /t/ than /d/, an environment that yields more dentals overall. This finding has no significant effect on how style affects allophone choice. Generation (2nd and 3rd) was also included since the key diagnostic of reallocation is that the third generation shows evidence of a linguistic rule in place for allophone choice while the second generation does not. The significance threshold was set at 95% ($p < 0.05$). Phoneme (/t/ and /d/) was included in the modelling to ensure that /t/ and /d/ were not behaving differently with regards to how Style affected allophone choice. Table 4 summarizes the fixed effects and interactions included in the modelling.

Variable	Type
Phoneme	Categorical (/t/, /d/)
Generation	Categorical (2 nd , 3 rd)
Style	Categorical (Interview, Word List)
Interactions	
Phoneme * Style	
Generation * Style	
Generation * Style	

Table 4. The fixed effects and interactions included in the modelling

3.4.3.1. Results for style

In order for there to be evidence of reallocation with regard to style, there should be a main effect of style on allophone choice (alveolar vs. dental) for the third-generation group that is not present in the second-generation. Firstly though I want to observe if style showed a main effect on allophone choice for the whole group of speakers. Table 5 shows the output of a regression of style over phonetic variant selection. The model shows a significant effect of style ($\beta = 0.44$, $p = 0.042$). The intercept refers to the likelihood of dentals being chosen over alveolars in interview style. The model shows that while dentals are the more likely choice in both styles, the likelihood of dentals in word list style is significantly stronger. Figure 1 illustrates this visually.

	β	SE	z	p
(Intercept)	0.26	0.08	3.46	<0.001***
Style = Word List	0.44	0.22	2.04	0.042*

Table 5. Coefficients of fixed effects from a generalized linear model for the effect of style on allophone choice

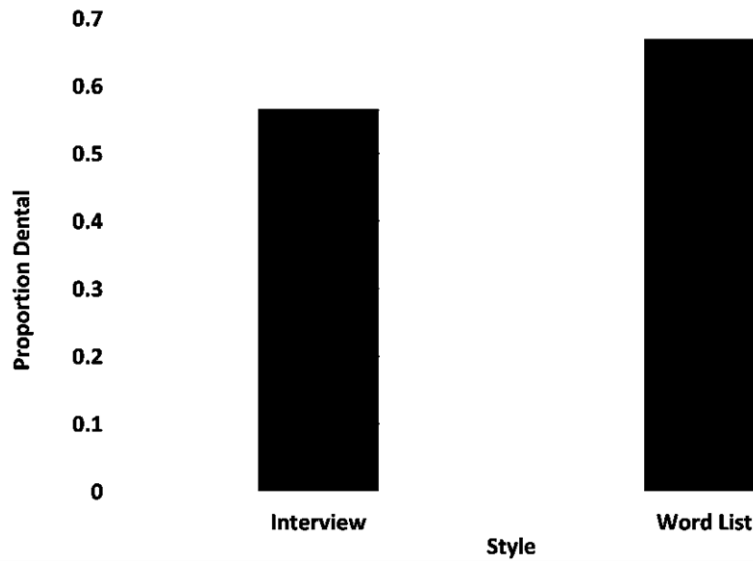


Figure 1. The proportion of dentals across interview and word list style

Table 6 shows the output of a regression that tests for the interaction of style and phoneme on allophone choice. This is to ensure that /t/ and /d/ are not behaving significantly differently with regard to style. The model shows that the phonemes /t/ and /d/ do not act significantly differently with regard to style ($\beta = -0.57, p = 0.196$).

	β	SE	z	p
(Intercept)	-0.04	0.13	-0.31	0.755
Style = Word List	0.79	0.33	2.42	0.016*
Phoneme = /t/	0.48	0.16	3.05	0.002*
Style = Word List * Phoneme = /t/	-0.57	0.44	-1.29	0.196

Table 6. Coefficients of fixed effects from a generalized linear model for the interaction of style and phoneme on allophone choice

The results above show that there is evidence of style influencing the choice of allophone across the dataset, with dentals more likely to occur in word list style than interview style. Yet this is not evidence in support of criterion 4, reallocation. In order to give some tentative support for reallocation, the pattern observed above must be driven by the third generation. In other words, the third generation should be exhibiting this style pattern, while the

second do not. This would give some evidence that the alveolar and dental stop variants are allocated specific sociolinguistic roles in the third generation that are not present in the second generation. Table 7 shows the fixed effects of a regression model that tests for the interaction of style and generation on allophone choice. Figure 2 illustrates the interaction between style and generation visually.

	β	SE	z	p
(Intercept)	0.57	0.11	5.26	<0.001***
Style = Word List	0.12	0.28	0.44	0.664
Generation = 3 rd	-0.63	0.15	-4.10	<0.001***
Style = Word List * Generation = 3 rd	0.67	0.45	1.49	0.137

Table 7. Coefficients of fixed effects from a generalized linear model for the interaction of style and generation on allophone choice

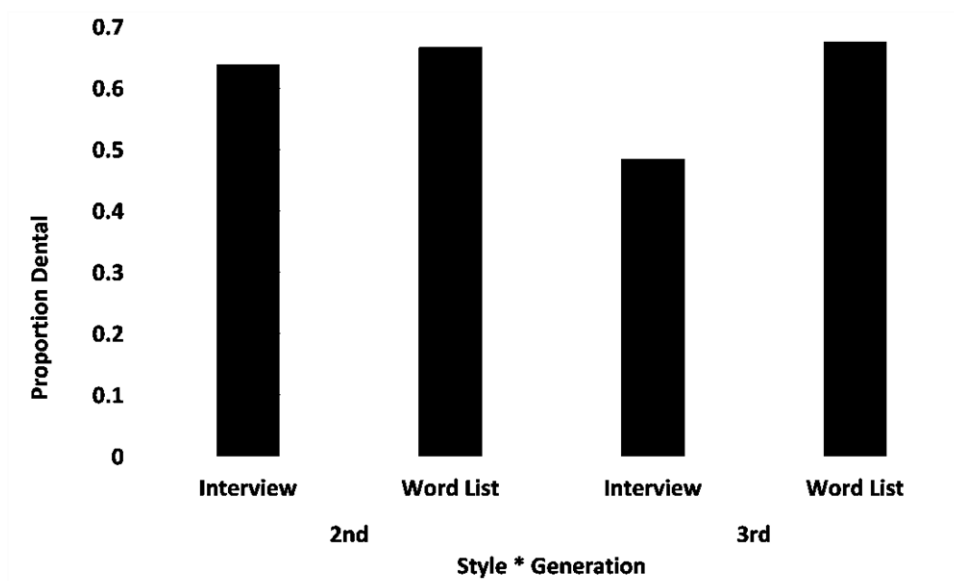


Figure 2. The proportion of dentals across interview and word list style, grouped by generation

Figure 2 shows that the effect of style on allophone choice is stronger for the third generation than the second generation. For the third generation, the likelihood of dentals is below 50% in interview style, rising to almost 70% in word list style. The second generation in contrast appears unaffected in their allophone choice by style. However, Table 7 shows that this interaction between style and generation is not statistically significant ($\beta = 0.67, p = 0.137$). It is possible however that this lack of significance could

be due to a small dataset size reducing statistical power. There is therefore one more way to represent this data – by analysing if style has a significant effect on allophone choice for the second and third generation individually, by splitting up the dataset into the two generations and running individual models on each generation subset. If the second generation shows no significant effect of style on allophone choice while the third generation does, then there is tentative evidence for reallocation. Table 8 shows the output of a regression of style over allophone choice for the second generation. Table 9 shows the output of a regression of style over allophone choice for the third generation.

	β	SE	z	p
(Intercept)	0.57	0.11	5.26	<0.001***
Style = Word List	0.12	0.28	0.44	0.664

Table 8. Coefficients of fixed effects from a generalized linear model for the effect of style on allophone choice for the second generation

	β	SE	z	p
(Intercept)	-0.06	0.11	-0.55	0.585
Style = Word List	0.79	0.36	2.23	0.026*

Table 9. Coefficients of fixed effects from a generalized linear model for the effect of style on allophone choice for the third generation

Tables 8 and 9 show that style has no effect on the allophone choice for the second generation but it does for the third generation. They show evidence that for the third generation, alveolars and dentals have been reallocated, assigned sociolinguistic roles. Specifically, in this case, dentals are more likely to be employed by the third generation in the stylistic context of reading a word list. Without further investigation of the social meaning of dentals in this speech community, we cannot ascertain whether third-generation speakers consider dentals to be the 'formal' or 'prestige' variant. Knowing that Bakos was interested in Arab American speech and identity, they might be deliberately selecting more 'Arab-like' variants in their monitored speech; or there might be other social motivations. This evidence is tentative due to a small dataset and the fact that there is an asymmetry between the interaction model (table 7) and the simpler models (tables 8 and 9), which is a cause to be more cautious about the evidence.

4. Conclusion

The aim of this paper was to attempt to diagnose a focused ethnolect amongst the Lebanese American speech community in Dearborn by first laying out the diagnostics for focusing and then testing the dataset against it, though any findings from the data would be tentative given the small size of the dataset. For this project, it was only possible to test the data against criterion 1, 2 and 4. There is tentative evidence that all three criteria are passed by the data and that the ethnolect is indeed focused, at least for the three third-generation speakers for whom we have data. Criterion 1, a sufficient criterion for focusing, is clearly met as all three third-generation speakers show evidence of dental stops in their speech. There is support for criterion 2 though this is weaker. Overall the third generation shows less extreme inter-speaker variability though the pattern is not as uniform as one would hope as one of the third-generation speakers, Sally, shows a stronger preference for dentals relative to Oliver and Calvin. It is posited here that Sally's bilingualism during the critical period may have led to this stronger preference for dentals.

There is support too for criterion 4: Generalized linear logistic regression modelling gives tentative evidence that the alveolar and dental variants of /t/ and /d/ have been reallocated in the third generation, with style having a significant effect on allophone choice. Alveolars are more likely than dentals in casual speech while dentals are more likely than alveolars in word list style. This effect is not seen in the second generation.

5. Future directions

This project provides tentative evidence that within the Lebanese Arabic community in Dearborn, Michigan, there is a focused ethnolect. Evidence is tentative due to the small sample size with which the analysis for this project was conducted on. Therefore, confirmatory data for the findings of this study is required. More convincing evidence, in particular for criterion 2 and 4, should be found. To do this, I will recruit a much larger sample of Lebanese American second- and third-generation speakers from Dearborn, Michigan to record and analyze speech data. In order to also increase the scope of the ethnolect analysis, I am considering analyzing /u/ and /oo/ which, from impressionistic listening, appear to also vary in pronunciation both in an inter- and intra-speaker manner amongst the second and third generation. Regarding criterion 4, I would like to confirm the tentative findings of this paper that dentals and alveolars take on a sociolinguistic style role in the third generation. I will also code the data for other phonological dependent variables such as syllable stress and social dependent variables such as speaker sex and socioeconomic status.

There is still the task of confirming ethnolect focusing based on criterion 3 and 5. Even for future work, it is not certain that any data will be able to be provided for criterion 3 (less extreme intra-speaker variation in the third generation relative to the second generation) since this is dependent on analyzing variables that have more variants in the second generation compared to the third generation. Criterion 5 (the variety spoken by the third generation must be identifiable by non-linguists as belonging to that particular ethnic group) will be tested by conducting a perception experiment on non-linguists (Arabic and Non-Arabic) from Dearborn.

This paper raises awareness both for an underrepresented community in the United States and of the importance for ethnolinguistic researchers to consider the crucial nuances of generational sociolinguistic patterns in ethnolects, something that is often overlooked. It is also unique regarding the nature of the community being studied. Coming from a dense ethnic enclave, these findings potentially established Lebanese American English as one of only a few ethnic varieties in the United States that has crystallized into a dialect. For this reason, I hope that it is an ethnic variety that will receive significantly more coverage in the future. What is paramount now is a more detailed analysis, both phonetic/phonological and morphosyntactic, of the entire ethnolect.

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