International Journal of English Language and Literature Studies
ISSN(e): 2306-0646
ISSN(p): 2306-9910
DOI: 10.18488/journal.23.2017.63.69.77
Vol. 6, No. 3, 69-77

URL: www.aessweb.com

GENDER AS A SOCIAL CONSTRUCT IN THE USE OF DENTAL FRICATIVES /θ/ and /ð/ IN GHANAIAN ENGLISH

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Article History
Received: 3 March 2017
Revised: 22 June 2017
Accepted: 24 August 2017
Published: 9 October 2017

Keywords
Hyper-correction
Transgender
Transsexual
Intersex
Sociolinguistic
Femininity
Posh
Ethnographic
Gender.

ABSTRACT

Studies on linguistic variation between males and females have shown that in general, women tend to use standard speech more than men. Many linguists have associated standard speech with femininity. In Victorian era, for instance, 'speaking properly' was associated with 'female' and with being a 'lady'; you are a lady if you speak 'posh' (Mugglestone, 1995). Some, however, believe that the high preference for standard speech by women is due to their awareness of its social significance; since women are denied social status by the society, they make use of the standard speech to achieve the status they are denied. Unfortunately, this appears not to be universal as it varies in different cultures. According to Romaine (1998) this phenomenon is more of social and culture than biological. In non-western societies, particularly in Africa, women are noted to be the heaviest users of nonstandard language. What this paper sought to do was to find out how men and women in a multilingual society such as Ghana, where English is learned as a second language together with other indigenous languages vary in their use two RP phonemes [θ], [ð]. The study used a face-to-face interview to collect a sample of speech from 60 participants. Using both auditory and acoustic analyses, coupled with a statistical tool, an independent sample test (t-test), it was realised that both gender groups realised the standard [θ] and [ð], and the nonstandard [th], [t], [f], [d] and [d̪] variants of the two RP phonemes. And although both groups recorded different scores for each variant, the differences were statistically insignificant, suggesting that both genders are likely to use the two variants equally.

Contribution/Originality: This research is one of the few studies that has investigated the use of dental fricatives among non-native English speakers in a multilingual society, Ghana, where English is learned as a second language together with other indigenous languages. The study contributes significantly to the ongoing debate on gender and standardization.

1. INTRODUCTION

Studies on sex, gender and linguistic behaviour have probably been one of the most researched areas in recent times. Although most sociolinguists often make reference to the effects of sex on linguistic behaviour, there are others who believe that 'gender' as a social construct gives a better explanation to this phenomenon than the binary

category of biological sex (see (Eckert, 1989; Foulkes and Docherty, 2000)). Eckert (1989) for example, noted that there exists linguistic variation even within the same gender group. In her ethnographic study of teenagers in Detroit, Suburban high school in US, Eckert noticed that linguistic variations within the girls' group were more than those found between girls and boys across board. She therefore concludes that linguistic variations between men and women do not lie in the differences between males and females across board, but in the differences within the same gender groups; a general constraint against competition across gender lines leads people to compete; hence, evaluate themselves within their gender group.

Some researchers however hold a contrary view. They argue that femininity and standard speech dated back to Victorian era, for example, a woman was considered a 'lady' if she spoke 'properly' (Mugglestone, 1982). Where properly means 'speaking standard'. It was therefore considered as a bad linguistic behaviour for a woman to do, for instance, 'G dropping': that is, to drop the initial /h/ in words such as 'heaven', 'heal', 'heart', etc. Similarly, the Pygmalion by Shaw (1916) and the popular musical made from it, 'My Fair Lady', also indicate the power of accent in the Victorian era. The Cockney Flower Seller 'Eliza Doolittle' was trained by Henry Higgins, a phonetic professor, to speak like a 'lady'. So long as Doolittle pronounced her sounds 'correctly', she did not betray her femininity. There is also a general perception that the high preference for the standard speech by women is due to the fact that women are aware of its social significance, and so make use of it to gain the very status they are denied by the society.

According to Trudgill (1983) the association of women with standard speech is the single most consistent finding to have emerged from social dialect studies over the past twenty years. His study on gender, style and class among women in Norwich, revealed that women, regardless of their social status used the standard form [ŋ] of the 'ing' morpheme more than the men who used the nonstandard form [n] (see also Trudgill (1974)). As he noted, women tend to hypercorrect a lot, especially middle class women. Labov (1966) also reported a similar phenomenon of hyper-correction of postvocalic /r/ by New York females from lower-middle class. And just like Trudgill, Labov believes that this behaviour by the lower-middle class women is their recognition of an exterior standard of correctness' and their 'insecurity' about their own speech. The women tried to identify themselves with the postvocalic /r/, the prestige marker of the highest social group, however, in their attempt to adopt the norm of this group, manifested their aspirations of upward social mobility, but they 'overshoot' the mark (see also Romaine (1998)). These findings appear to support the general concept that women are repository of standard speech.

However, Romaine (1998) and some other linguists think otherwise. Romaine (1998) study on women in the Middle-East and Africa, for instance, has revealed that women from these cultures tend to use standard speech less than their male counterparts. Nichols (1983) study on Gullah Creole, spoken in some parts of the South-Eastern United States confirms Romaine's finding. He reported that older women in these communities were the heaviest users of Gullah Creole. But Nichols's finding seems to suggest that one's exposure to the standard language plays a very significant role as far as the use of standard and nonstandard language is concerned. For instance, the older women in these communities, as he noted, worked mostly in the domestic and agricultural areas, while their older male counterparts worked mostly in the construction. Also, the younger speakers of both sexes used more of the standard variety than the older ones because the younger speakers had more access to white collar jobs and so had contact with the Standard English.

It therefore suggests that standard speech may function differently for men and women in different contexts, and for different reasons and in different cultures. In two villages in Norway, as observed by Larson (1982) women used standard speech to gain respect, and or to influence others. While women's speech was on the whole more standard than that of the men, women produced more features of standard speech only when they were trying to get someone to do something or to persuade someone to believe something which men rarely do. The issue of femininity and standardization thus appears to be controversial. The purpose of this paper was therefore to find out

how the concept of femininity and standard speech works among Akan speakers of English, a non-western society (Ghana in West Africa), by examining two linguistic variables /θ/ and /ð/.

2. GENDER DEFINED

Sex and gender are two different concepts. The distinction between the two was first developed in the 1950s and 60s by the British and American psychiatrists, and the medical personnel working with intersex and transsexual patients (Pan American Health Organization, 1997). The term 'gender' has since been used to describe male and female in relation to their social and cultural roles, while 'sex' is used to describe male and female in relation to their 'biological' features. For them, gender is socially and culturally constructed roles that are assigned to men and women, and the consequence relations that arise out of them. Gender roles are therefore set by conventions and other social, economic, political and cultural forces. Gender roles prescribe a set of qualities and behaviours that a society expects from a female or male. These roles are thus learned, and vary within and among cultures, and can be affected by factors such as education, economic, political and cultural forces. Sex, on the other hand, marks the distinction between men and women as a result of their biological, physical and genetic differences. It is thus fixed and universal, and based on nature while gender roles are fluid and are culture dependent. Many people, however, believe that the sex categories of female and male are neither fixed nor universal as usually thought of, but vary over time and across cultures, and so are seen as social and cultural construct. For example, we have transgenders (people who feel they are neither male nor female, but somewhere in between), hijras (South Asian transgender population), transsexual and intersex who do not fit into biological and social categories of men and women.

3. METHODOLOGY

The study used 60 participants: 30 males and 30 females from 12 predominant Akan speaking communities in Ghana through stratified and snowball sampling methods. To take the sample of the participants, the population was first stratified into two: male and female. After this a snowball sampling technique, also known as social networking, was used to select the sample for each of the two strata. The participants for each stratum were then selected by randomly selecting a male participant in Cape Coast who offered to participate in the interview. This participant after being interviewed, also recommended another participant to me. In this case, I approached the participant as a friend of his friend, not as an outsider. The recommended participant was contacted on phone and then a follow-up was made for the interview. That is, the participants were not known to me prior to the interview; the subjects had been obtained via a friend of a friend contact.

A sociolinguistic interview was then used to collect a quantity of speech data from the participants. The interview was in two parts, the first part was used to collect background information of the participants. The second part involved reading of a list of words highly concentrated with 'th' variables in a range of linguistic environments: word-initial, medial and final positions. There was a total of 46 lists of words; 36 of them with the (th) spelling and 10 distracter items (words without th spellings). Of the 36, 15 of them represented words realised with the voiced dental fricative /ð/; 8 at initial, 6 at medial and 1 at final position. 21 of the 36 represented words realised with the voiceless dental fricative /θ/; 5 at initial, 6 at medial and 8 at word final positions respectively. The participants were asked to read the items with a short pause between each word thus minimising the phonological effects of the preceding and the following words. The recording was done in the rooms of the participants using a Zoom Handy4Next digital voice recorder. The mouth-to-microphone distance was about 20 inches with all the utterances low-pass filtered at 44.8 kHz.

The recordings were analysed using a computer-based acoustic analysis system (Kay Elemetrics, CLS-4500). The signals were fed into a computer interfaced with a Computerized Speech Lab (CSL-4500) at a sampling rate of 5000Hz. The Computerized Speech Lab (CSL) produces a graphic display of speech sample which is conventionally

called a spectrogram. The spectrograph provides a spectral analysis (spectrogram) of the energy present at each frequency or band of frequencies within a complex acoustic signal (normally for vowels). The variables realised in the target words were then identified through visual inspection of the spectrogram. The identification of the variables was done in relation to their acoustic cues; voicing, place and manner.

That is, the coding was done according to the articulatory strictures: open and narrow approximation, and complete closure. A stricture was coded as complete closure if the spectrogram displayed a release-like burst, lack of energy or low intensity at a low frequency region, and those that displayed a complete frication or irregular spectrum at high frequency region were coded as Constricted or narrow approximation. Thus, two strictures, complete closure and stricture with narrow approximation were identified. The tokens that displayed strictures with complete closure were coded as stops, while those with intermittent or close approximation were coded as fricatives. The stops were thus identified by the acoustic cues: release burst, stop gap, formant transition of preceding and following vowels, while the fricatives were identified by their high fricative energy, and irregular spectrum. The stops were further distinguished from one another through place cues such as F2 & F3 transitions of preceding and following vowels. For voicing distinction, voice onset time (VOT), which distinguishes voiced fricatives from voiceless fricatives was used. The fricatives were however distinguished from one another in relation to their spectral shape and frequency peak which varies according to size and length of the vocal cavity. For voicing distinction, the overall intensity of frication and amplitude in the frequency region were used.

Tokens displaying qualities similar to those of fricatives were coded [θ], [ð] and [f] and those with qualities similar to those of stops were coded [t, t^h, d, ɖ]. In all, five variables: [θ], [f], [t], t^h] and [ɖ] were identified as variants of /θ/ pronunciation and six [θ], [ð], [f], [t], t^h] and [d] as variants of /ð/ pronunciation. Numerical values were then assigned to the variables, e.g. 1 to 3 were assigned to the fricatives [θ], [ð] and [f], while 4 to 7 were assigned to the stops. The table below shows the scores for each of the variants.

Table-1. Definition of the Variant Scores for /ð/, /θ/ Articulation

Variant Score	Definition
1-θ	voiceless dental fricative
2-ð	voiced dental fricative
3-f	voiceless labiodental fricative
4-t	voiceless unaspirated alveolar stop
5-t^h	voiceless aspirated alveolar stop
6-d	voiced alveolar stop
7-ɖ	voiced dental stop

Source: Field Data, 2013

4. DISCUSSION OF RESULTS

4.1. Gender Variation in the Realisations of /θ/ and / ð/

To determine the linguistic variation between both gender groups, an independent sample test (t-test) was conducted. As said earlier, numerical values were assigned to the qualitative data to transform them into a quantitative one. With the help of a Test Analytics for Surveys (TAfS), a tool for Predictive Analytic Software (PASW) Version 18, tables were produced directly for the variables realised by the two gender groups. The results are presented in Tables 2 and 3 below.

Table-3. Gender variation in the realisations of the six variables realised for /ð/

Variables	Gender	N	Mean	SD.	t-value	p-value	η^2
Voiceless dental fricative 1-θ	Male	30	.178	.197	-1.080	.284	
	Female	30	.241	.251			
Voiced dental fricative 2-ð	Male	30	.419	.535	.653	.517	
	Female	30	.337	.426			
Voiceless labiodental fricative 3-f	Male	30	.056	.081	.183	.856	
	Female	30	.052	.076			
Voiceless unaspirated alveolar stop 4-t	Male	30	.196	.172	-.489	.627	
	Female	30	.215	.116			
Voiceless aspirated alveolar stop 5-t^h	Male	30	.904	.509	2.584*	.013	.103
	Female	30	.615	.341			
Voiced alveolar stop 6-d	Male	30	1.370	.173	-.252	.802	

Source: Field Data, 2013. *P<0.05 Where N = sample size, SD = standard deviation and η^2 = eta square.

As shown in Table 2, six discrete variables were identified as the variants of the English voiced dental fricative /ð/ used by both groups. This means that both genders realised all the six variables, nonetheless, their mean scores varied considerably. The female speakers, for instance, scored higher mean value (Mean = .241, Std. Dev. = .251) for [θ] variant than their male counterparts who recorded a mean score of (Mean = .178, Std. Dev. = .197). The male speakers however scored higher mean value (Mean = .419, Std. Dev. = .535) for [ð] and (Mean = .056, Std. Dev. = .081) for [f] variants than the female speakers with mean values of (Mean = .337, Std. Dev. = .426) and (Mean = .052, Std. Dev. = .076). For [t] and [d] realisations, the female speakers recorded higher mean scores (Mean = .215, Std. Dev. = .116) for [t] and (Mean = 1.385, Std. Dev. = .272) for [d] than the male speakers with lower mean scores (Mean = .196, Std. Dev. = .172) and (Mean = 1.370, Std. Dev. = .173) respectively.

The independent sample test conducted, however showed that the difference between the two genders was statistically insignificant for all the variants, except for the voiceless aspirated alveolar stop [t^h] with a significance difference of (η^2=2.584, df: .103, p<.013). The male speakers scored a higher mean value (Mean = .904, Std. Dev. = .509) than the female speakers with a lower mean value of (Mean = .616, Std. Dev. = .341). Meaning that the male speakers are likely to realise [t^h] more than the female speakers. Based on Cohen (1988) guidelines on the interpretation of eta square, the magnitude of difference in the mean scores for the two groups of speakers is moderate (eta square (η^2 = .103), meaning that only 10.3 percent of the variants in the speakers' realisation is explained by gender. The mean scores and the standard deviation for each of the five variables realised as variants for the voiceless dental fricative [θ] are illustrated in Table 3 below.

Table-3. Gender Variation in the Realisations of the five variables realised for /θ/

Variables	Gender	N	Mean	SD	t-value	p-value	η^2
Voiceless Dental Fricative 1-θ	Male	30	.844	.872	-.966	.338	
	Female	30	1.040	.691			
Voiceless Labiodental Fricative 3-f	Male	30	.329	.188	2.814**	.007	.120
	Female	30	.204	.157			
Voiceless Unaspirated Alveolar Stop 4-t	Male	30	.963	.607	-1.363	.178	
	Female	30	1.148	.434			
Voiceless Aspirated Alveolar Stop 5-t^h	Male	30	.889	.544	2.351*	.023	.087
	Female	30	.611	.351			
Voiced Alveolar Dental 7-ɖ	Male	30	.082	.049	-1.680	.099	
	Female	30	.100	.034			

Source: Field Data, 2013. **p<0.01, *p<0.05 (n = 60) Where N = sample size, SD = standard deviation and η^2 = eta square.

Table 3 illustrates the five discrete variables realised as the variants of the voiceless dental fricative /θ/. From the table, it is clear that the difference between the two gender groups in the realisations of three of the variables [θ], [t] and [d̪] is statistically insignificant. Nevertheless, the mean scores for the variables are relatively different across the two gender groups. For example, the female speakers recorded higher mean scores (Mean = 1.040, Std. Dev. = .691) and (Mean = 1.148, Std. Dev. = .434) for both [θ] and [t] than the male speakers' (Mean = .844, Std. Dev. = .872) and (Mean = .963, Std. Dev. = .607). Similarly, the female speakers recorded higher score (Mean = .100, Std. Dev. = .034) for [d̪] than the male speakers (Mean = .082, Std. Dev. = .049). In contrast, the two genders differ significantly in their use of [f] and [t^h]. The independent sample test performed to examine whether gender was a variable affecting the realisation of the five variants of /θ/ pronunciation has shown a statistically significant effect for the use of [f] and [t^h] by both genders. The observed mean scores for the realisations of [f] and [t^h] by both gender groups vary at a significance of $p<0.007$, (η^2= 2.814, df: .120 $p<0.007$) for [f] and (η^2= 2.351, df: 087, $p<0.023$) for [t^h]. The male speakers scored higher (Mean = .329, Std. Dev. = .188) for [f] than the female speakers (Mean = .204, Std. Dev. = .157), and also higher (Mean = .889, Std. Dev. = .544) for [t^h] than the female speakers (Mean = .611, Std. Dev. = .351). This implies that the male speakers are more likely to use [f] and [t^h] variants than the female speakers. The fact that the two genders do not vary significantly in their use of the standard and nonstandard variants suggests that both are likely to use the standard variants equally, and therefore contradicts the general impression that women use more standard or prestige variety of a language than men. The result, nevertheless confirms Romaine (1998) and Larson (1982) and thus indicates that the linguistic differences between males and females are highly social and cultural dependent. That is, standard speech works differently for different people in different cultures.

5. CONCLUSION

The study has shown that Akan speakers of English in Ghana have seven variants of the two RP dental fricatives; the voiceless dental fricative /θ/, for example, has five variants [θ], [t^h], [t], [f] and [d̪], while its voiced counterpart /ð/, has six variants [θ], [ð], [t], [t^h], [d] and [f]. This means that both the RP standard [θ] and [ð], and the nonstandard [f], [t^h], [t], [d̪] and [d] variants of both phonemes /θ/ and /ð/exist among Akan speakers of English in Ghana. One other significant observation made was that, although the two gender groups recorded different mean scores for all the seven variables, the differences in the index scores were generally statistically insignificant, except for [f] and [t^h] realisations. Meaning that male and female speakers of English in Akan communities when given the two dental fricatives to pronounce, they are likely to realise both the RP standard and the nonstandard variants equally. The results therefore contradict some of the previous findings on gender and standardization and, therefore forces one to question the general assumption that overt prestige speech is a repository of women. The results thus indicate that differences in the speech of men and women often reported in variation studies are more of social and cultural dependent than biological. That is, it is not universal and it appears African women do not follow the trend of western women. Again, they suggest that the differences may not necessarily be the results of one being a male or of a female, for example, the specific requirements of the type of talk in which speakers are engaged could also motivate the use of a particular feature and not the other. It is also important, however, to note that although the men generally recorded a higher index score for [ð] than women, this could be perhaps due to the fact that the men were able to apply more energy in their speech, and so were able to sustain a high velocity of air in the vocal tract, which is a recipe for voiced fricative articulation. Production of voiced fricatives generally requires a continuous supply of air in the vocal tract, and at the same time a high velocity of air in the vocal folds to keep voicing going. This mostly tends to be incompatible with voiced fricatives. Hence, voiced fricatives are sometimes perceived as voiceless fricatives since they most of the times have very weak energy at higher frequency regions (Wells, 1982). Devoicing of /ð/ to [θ], [t], [t^h] and [f], is however unusual. This, according to Adjaye (2005) is anticipatory assimilation; however, I am of the view that this kind of pronunciation is

merely accidental or mispronunciation. Nonetheless, this conclusion can only be ascertained through a thorough investigation.

Funding: This study received no specific financial support.
Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

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Appendix

A. Word-list

These, thrifty, through, path, Thames, Anathalesthetic, they, python, the, Arthur, that, Mouth-Death, Macbeth, Macbeth, tooth, thrashed, Dither, together, with, Northern, breathed, breath, **Th**ompson, **Th**omas, Thoth, birthdays, their, brother, three, thirty-three, that, they, though, brother, tithe, them

B. Spectrograms

Below are spectrograms of seven participants saying the words: breath, dither, python, breathed, thrifty, thereof, tithe, the, path, them, booth, three, they, though, thrashed, them, brother, Arthur, they, northern, the, therefore, that, dither, together, python, tooth, these, though, northern.

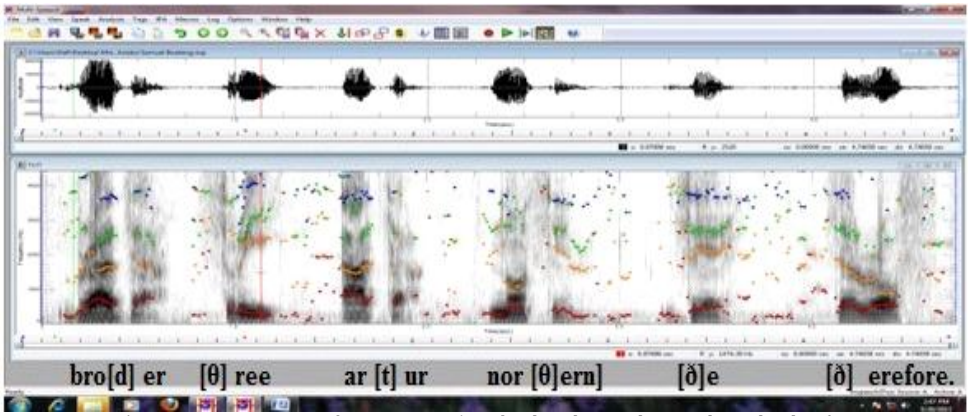

Figure-1. Spectrogram of FA pronouncing: *brother, three Arthur, northern, the, therefore.*
Source: Field Data, 2013

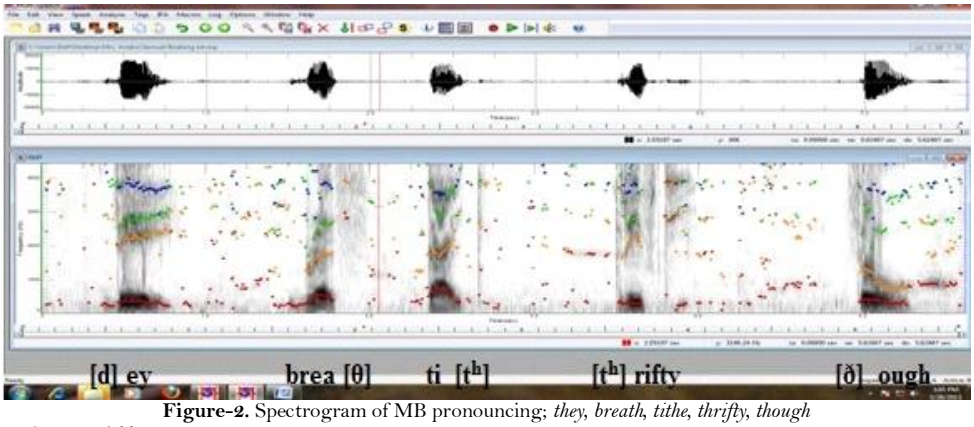

Figure-2. Spectrogram of MB pronouncing; *they, breath, tithe, thrifty, though*
Source: Field Data, 2013

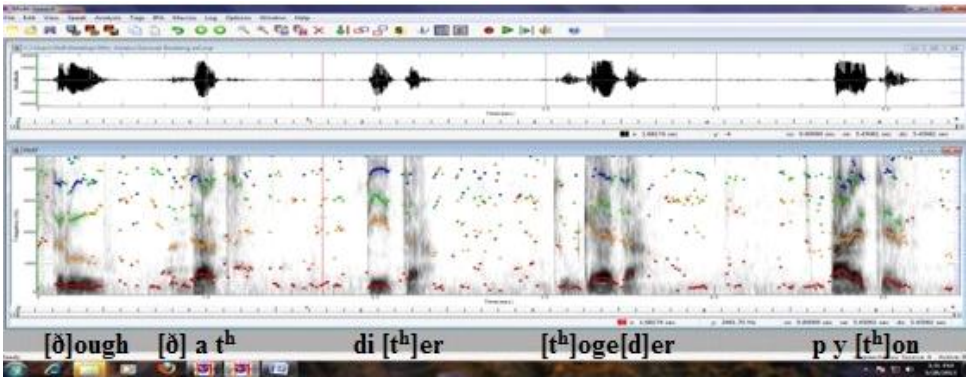

Figure-3. Spectrogram of BA pronouncing: though, that, dither, together, python
Source: Field Data, 2013

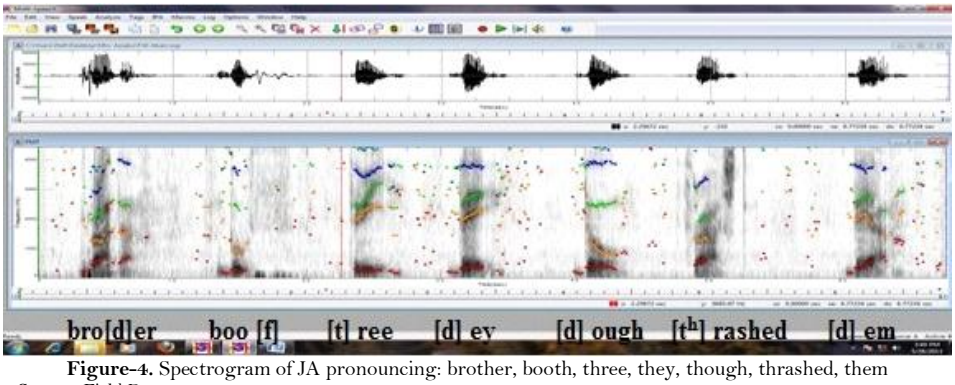

Figure-4. Spectrogram of JA pronouncing: brother, booth, three, they, though, thrashed, them
Source: Field Data, 2013

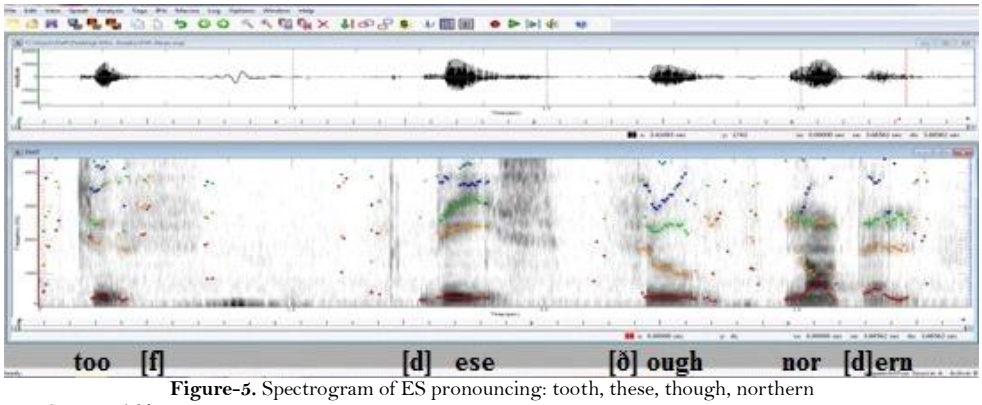

Figure-5. Spectrogram of ES pronouncing: tooth, these, though, northern
Source: Field Data, 2013

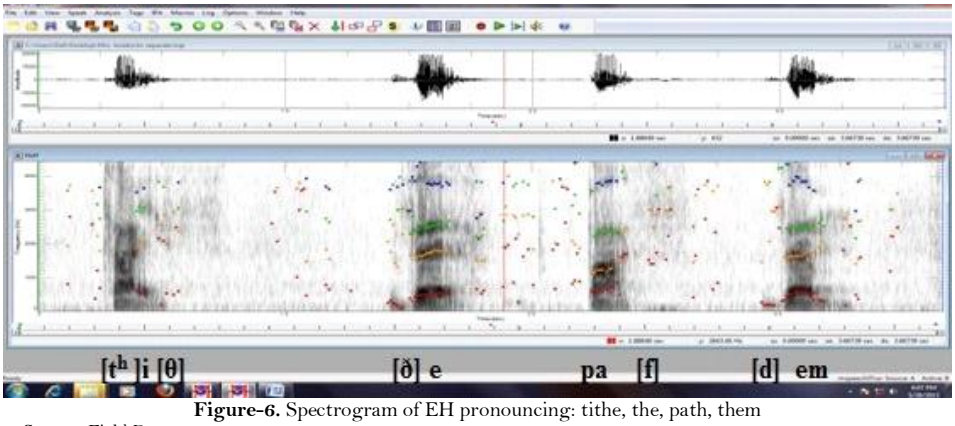

Figure-6. Spectrogram of EH pronouncing: tithe, the, path, them
Source: Field Data, 2013

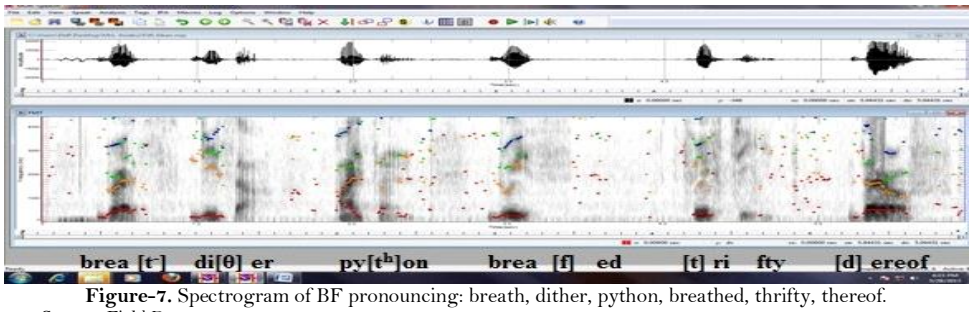

Figure-7. Spectrogram of BF pronouncing: breath, dither, python, breathed, thrifty, thereof.
Source: Field Data, 2013