TRABAJO FIN DE GRADO

GRADO EN ESTUDIOS INGLESES: LENGUA, LITERATURA Y CULTURA

The Yorkshire accent and the lack of the foot-strut split

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Abstract

The foot-strut split is a phonological phenomenon where the vowel /u/ divided into different phonemes /ʊ/ (as in foot) and /ʌ/ (as in strut). However, the split did not occur in the North of England, and these vowels have remained a single phoneme for Northern English speakers.

Yorkshire is a county in the North of England where this split is not present and most of its speakers do not differentiate between both phonemes /ʊ/ and /ʌ/.

In this dissertation, a small corpus of Yorkshire accent speakers has been created by asking them to utter 7 minimal pairs. Consequently, the recordings have been analysed using the program Praat.

This work illustrates the lack of the foot-strut split in the Yorkshire accent in most of the speakers recorded, as only 1 out of 8 speakers did have the split present in their accent.

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1. Introduction

For most speakers of British English, pairs of words such as could-cud, put-putt, stood-stud are not homophones, as the vowels are different. The sound in could is a back, half-close rounded vowel, whereas the one in cud, is a central, between half-open and half-close unrounded vowel, as presented in Figure 1.

However, there are some speakers of British English who would say that they are homophones as they pronounce the vowels with the same phoneme. This is due to the fact that the foot-strut split did not happened in certain areas of the United Kingdom (Baranowski and Turton, 2017).

The foot–strut split, described by Wells (1982), is a phenomenon whereby the Middle English short sound /u/ split into two distinct phonemes /ʊ/ (as in foot) and /ʌ/ (as in strut). The presence of a phonemic distinction in the sound /u/ occurred in the south of England and it is believed that it happened sometime between the 15th and 17th centuries, with the first report of it dating from the 1640s (Baranowski and Turton, 2017).

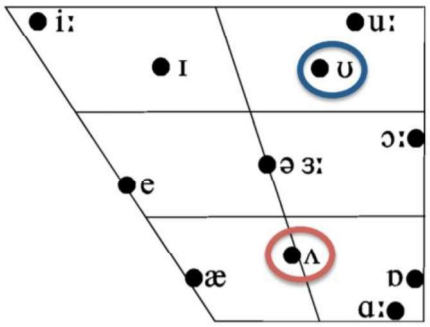

Figure 1: The cardinal vowel chart (Baranowski and Turton, 2017)

This phenomenon occurred in most varieties of English; however, it did not happen in some areas such as the majority of Northern England, the Midlands, and some varieties of Hiberno-English (Wells, 1982). There is an area in Wales (South Pembrokeshire), where this change did not happen because the Welsh language was replaced by English a long time before the transition from Welsh to English happened in the rest of Wales (Trudgill, 2019).

This absence of phonemic contrast between foot and strut vowels is traditionally a major feature to differentiate the South and the North of England as can be observed in Figure 2 (Wales, 2000).

Figure 2: Map of the foot-strut split (Upton et al 2003)

This means that accents such as the Derbyshire and Yorkshire accents, the strut words are still pronounced the same as foot words such as strut, cut, blood due to this split not happening (Baranowski and Turton, 2017). That means that they are pronounced with [ʊ] instead of /ʌ/, however the use of [ə] in the middle classes is quite extended and it tends to make the diphthongs into monophthongs, such as [eɪ] and [əʊ]. Because of the lack of the split, words such as cut and put, and pudding and budding rhyme for the speakers of these accents (Lass, 2000).

The absence of the split is seen by some people as uneducated and is sometimes stigmatized, which leads some speakers of non-splitting accents to use hypercorrections in their speech in an attempt to sound educated. An example of this could be the hypercorrection of butcher /ˈbʌtʃə/ instead of /ˈbʊtʃə/ (Collins and Mees, 2003).

However, several studies have suggested that this phonemic distinction may be spreading in a very slow manner, with more speakers within the Yorkshire and Midlands displaying a distinction between the two phonemes (Orton et al., 1969). A study of 123 speakers from Manchester found that some of the

interviewers had the phonemic distinction between [ʊ] and /ʌ/ like Southern English speakers. Moreover, they found that some speakers that did not have a phonemic contrast, showed some small phonetic differences between foot and strut, mainly as the first formant (F1) lowering for the nasal following the vowel, which is likely to raise the F1 (Baranowski and Turton, 2017).

1.1. Objectives

The objectives of this dissertation are as it follows:

- Record and analyse a small sample of Yorkshire accent speakers.
- Illustrate with this example the lack of the foot-strut split in the Yorkshire accent.
- Determine if any of the speakers from this sample differentiates between the foot-strut phonemes.

1.2. Yorkshire accent

The Yorkshire accent, Yorkshire English or dialect is an English dialect spoken in the county of Yorkshire, in northern England. There is no single Yorkshire dialect but, rather, a variety of speech patterns across the region with very distinctive phonetic changes from southern accents or RP (Yorkshire Dialect Society, 2014).

In order to understand the Yorkshire accent, its demographics should be explained. The area of Yorkshire, known as the County of York, is the largest county in the United Kingdom. It has a surface area of nearly 20 000 km^2 and is nearly 80 kilometres from its most southerly to its most northerly point. It has over 5 million inhabitants, according to the last census in 2011 and it is divided in North, South, West and East Yorkshire. It has a very rich culture with traditional food, drinks, music and famous cricket, footballs teams (Office of National Statistics, 2019)

The Yorkshire English is based on older languages such as Old Norse and Old English. It belongs to the northern accents of English and the foot-strut split did

not happen there which means that words such as cut and blood are pronounced with [ʊ] instead of /ʌ/ (Lass, 2000).

It is believed that Yorkshire is one of the most characteristic northern accents due to the amount of phonetic changes compared to RP, as well as its own vocabulary. Some of the examples are listed below (BBC 2005):

Phonetics:

- Pronounce the vowel "a" as a short "a". Example: apron
- Shorten the suffix -ing endings to -in.
- Drop the “h” at the beginning of words

Vocabulary:

- Drop the words “the” and “to”
- Say “owt” instead of “anything.”
- Say yes to something by saying “aye.”
- Use “allus” instead of “always.
- Ask people “ey up ow do?” instead of “Hey, how are you?”

2. Methodology

The author of this study lives in a village in the South Yorkshire bordering with the north of Derbyshire. Interviewees are friends and work colleagues of the author and they were recorded to create a small corpus of recordings to be analysed afterwards. The interviewees that were native to Yorkshire regardless of whether they still live in this area or not, were included after they accepted to be recorded. They were informed of the purpose of this dissertation; however they were not told about the difference of the split between accents to avoid possible hypercorrections. They gave verbal consent and written consent to be recorded. A copy of the written consent can be found in the annex.

2.1. Participants

In this study, people aged 6 or above could be included but children below 6 were excluded due to the possible lack of appropriate reading skills.

9 people were recorded for this study, 5 males and 4 females with ages ranged from 13 to 56 years old. The participants include a male control speaker who speaks with an accent that presents the foot-strut split of RP English and 8 people who are originally from Yorkshire. All the participants recorded the pairs of words stated in the methodology in isolation. Only 8 people have been recruited to this study due to the limitation of the extension of this dissertation.

A detailed list and a map (Figure 3) locating each participant can be found below with basic demographics and they have been allocated a letter to be able make easier a detailed breakdown of the results.

Subject control: Male, 31 years old, originally from Broadstairs in Kent (South East England) who has been living in Chesterfield, Derbyshire for the last 4 years. He has a master's degree.

Subject A: Female, 37 years old, originally from York but currently living in central London since 2010. She has a master's degree.

Subject B: Male, 56 years old, originally from Redcar but currently living in London since 1990. He has A level qualifications (equivalent to Spanish Bachillerato)

Subject C: Female, 40 years old, born and lives in Rotherham. Works as a teacher and possess a teaching qualification.

Subject D: Male, 13 years old, born and lives with his parents in Kiveton Park (South Yorkshire).

Subject E: Male, 42 years old, born and living in Hull. He has never moved out of the area. He has GCSE qualifications (equivalent of Spanish LOGSE)

Subject F: Female, 36 years old, born and living in Redcar. She has a BA in History and she is working towards a master's degree.

Subject G: Female, 22 years old, born in Bradford but living in Haworth currently. She has GCSE qualifications and a vocational qualification through further education college (equivalent to a Spanish Módulo de Grado Medio).

Subject H: Male, 21 years old, born in Richmond and living in Sheffield. He has GCSE qualifications and undertaking an apprenticeship with Jaguar.

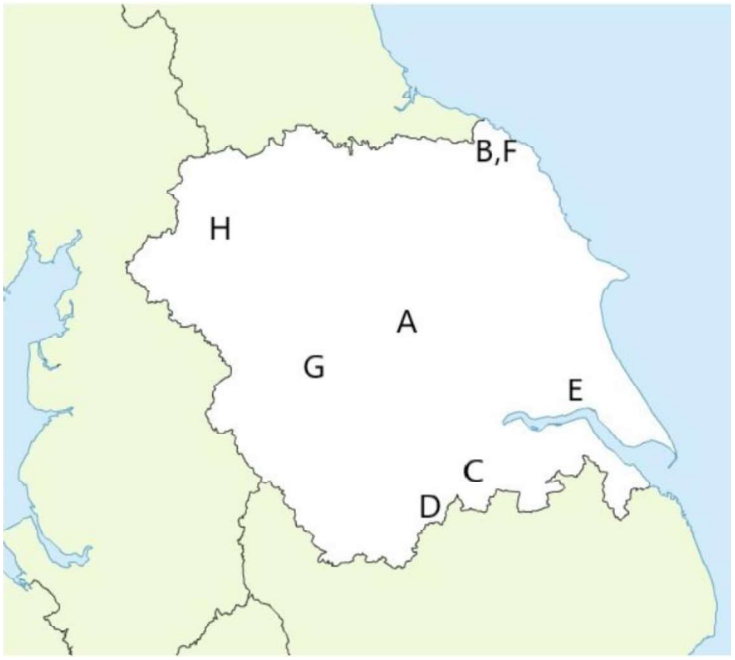

Figure 4: Map of Yorkshire with letters representing where each participant comes from.

2.2. Data

Interviewees were asked to utter 7 minimal pairs in isolation to be analysed. Minimal pairs are pairs of words that only differ in one phonological element and they are usually used to show that two phonemes are two separate phonemes in a language, such as bin /bɪn/ and pin /pɪn/ (Glegerich,1992)

Minimal pairs where the only phoneme that differs is the vowel sound [u] with the realization of the phoneme /ʊ/ in one word and the phoneme /ʌ/ in the other in the RP accent have been chosen because they will highlight the presence or absence of the foot-strut split in the interviewees.

The following pair of words were the chosen one for this study:

- Foot- Strut
- Should- Shut
- Put- Putt
- Stood- Stud
- Book- Buck
- Crooks- Crux
- Look – Luck

2.3. Data recording and analysis

The recordings were sent back to the author of this dissertation and they were analysed using the program Praat (Boersma and Weenink, 2005). This application is a computer-based program used to analyse, synthesize and manipulate sound. A spectrogram for each pair of words will be created and, in this study, only the vowels that create the foot-strut split between the pair of words will be analysed.

In order to understand the spectrograms, the vowel formants will need to be explained. A formant is the representation of the spectral shaping that occurs from the acoustic resonance of the human vocal tract and they could be distinctive components of the acoustic signal (Titze, 1994). Vowels will normally have at least four or more formants and sometimes more than six. The formants are named depending on the frequency and the one with the lowest frequency is called F_1, and the second F_2, and so on. However, the first two

formants are the most important ones as they can determine the vowel quality and they are normally sufficient to identify the vowel (Deterding, 1997).

In this study, the only vowels that will study the back, half-close rounded phoneme /ʊ/, and the central, between half-open and half-close unrounded sound /ʌ/. The first one has the formant F1 at around 380 Hz and the F2 at 940 roughly, whereas the latter has the F1 at around 760 Hz and the second formant at 1320 Hz as seen in Figure 3.

Vowel	F1(Hz)	F2(Hz)	F3(Hz)
iː	280	2620	3380
ɪ	360	2220	2960
e	600	2060	2840
æ	800	1760	2500
ʌ	760	1320	2500
ɑː	740	1180	2640
ɒ	560	920	2560
ɔː	480	760	2620
ʊ	380	940	2300
uː	320	920	2200
ɜː	560	1480	2520

Figure 3: Average adult male formant frequencies represented in Hertz (Wells 1982)

3. Results

The 9 recordings were analysed using the program Praat in order to create one spectrogram per minimal pair and speaker. The realization of the vowel phoneme in each minimal pair will be discussed in separate subsections.

3.1. Foot and strut analysis

The pair of words foot-strut that give the name to the split have been analysed in these recordings. A speaker that comes from an area where the split is absent will utter foot as /fʊt/ and strut as /strʊt/. However, someone who speaks with an accent that presents the split should utter foot as /fʊt/ and strut as /strʌt/, which means that they are not homophones.

As mentioned in the methodology, there is a difference between the F1 and F2 of the two phonemes and this difference can be seen in Figure 5 when both words were uttered by the control subject, that is, the speaker with an RP accent. The F1 in the phoneme /ʊ/ is around 440Hz and the phoneme /ʌ/ is higher at around 750 Hz.

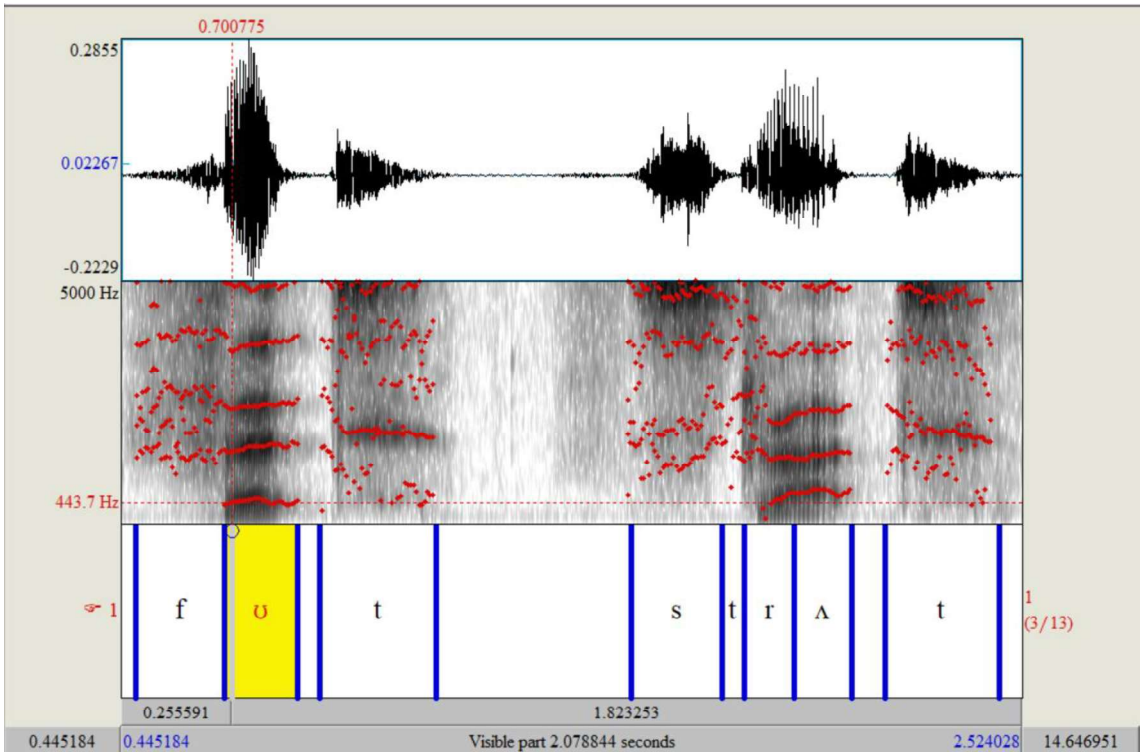

Figure 5: Waveform and spectrographic representation for the words “foot” and “strut” produced by the control speaker with an RP accent.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in foot and strut opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

The formants F1 and F2 of the vowels of speaker A are exactly located in the same frequency area of the spectrogram which show that they are the same vowel. More specifically, the F1 is located at around 450 Hz which is the area where the F1 should be located when a speaker is uttering the phoneme /ʊ/. This can be seen below in Figure 6.

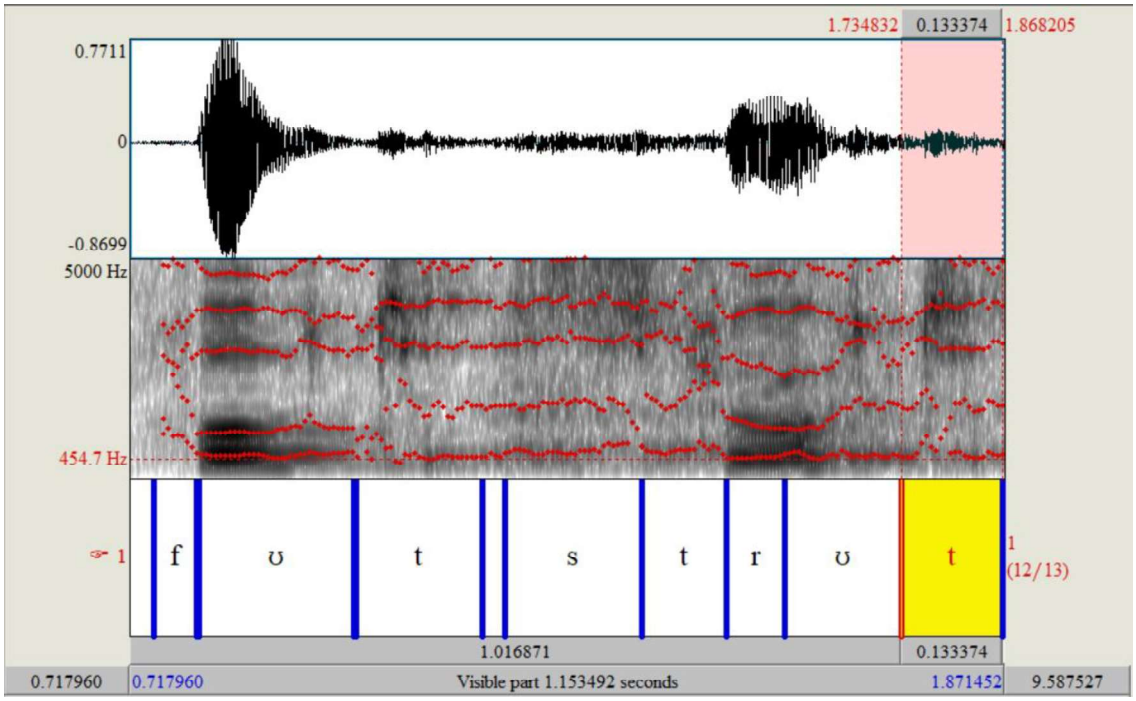

Figure 6: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker A.

The same can be observed in Figure 7, where the speaker C utters the same vowel /ʊ/ as F1 and F2 are located in the same area in the spectrum. However, both formants are located slightly higher in the spectrum compared to speaker A, which will be related to the speaker and not to the vowel quality as in both cases the formants are located in the same area.

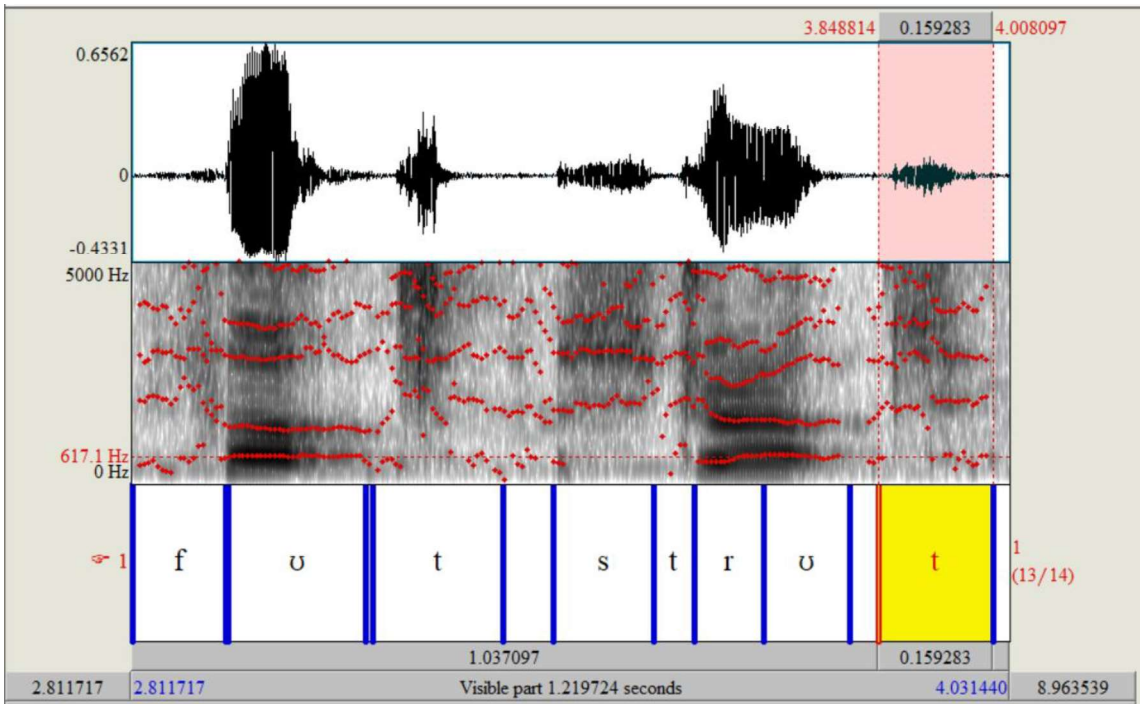

Figure 7: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker C.

However, speaker H does not utter the pair of words foot and strut with the same phoneme, as he makes a difference between them. He utters the word strut with the phoneme /ʌ/ like the control speaker and unlike the rest of the subjects (A to G). This can be seen in Figure 8 as the F1 frequency of the vowel in strut is slightly higher compared to the vowel of foot and the F2 of the word foot is around the 960 Hz compared to the vowel in the word strut which is located higher up around the 1200 Hz. This difference of location of the F1 and F2 between both vowels show that they are different vowels, which means that this speaker utters the word foot as /fʊt/ and the word strut as /strʌt/. One possible explanation could be his socio-economic background as class is a more important factor than region in British accents, where middle- and upper-class individuals tend to speak with an accent resembling RP (Britain and Cheshire, 2003).

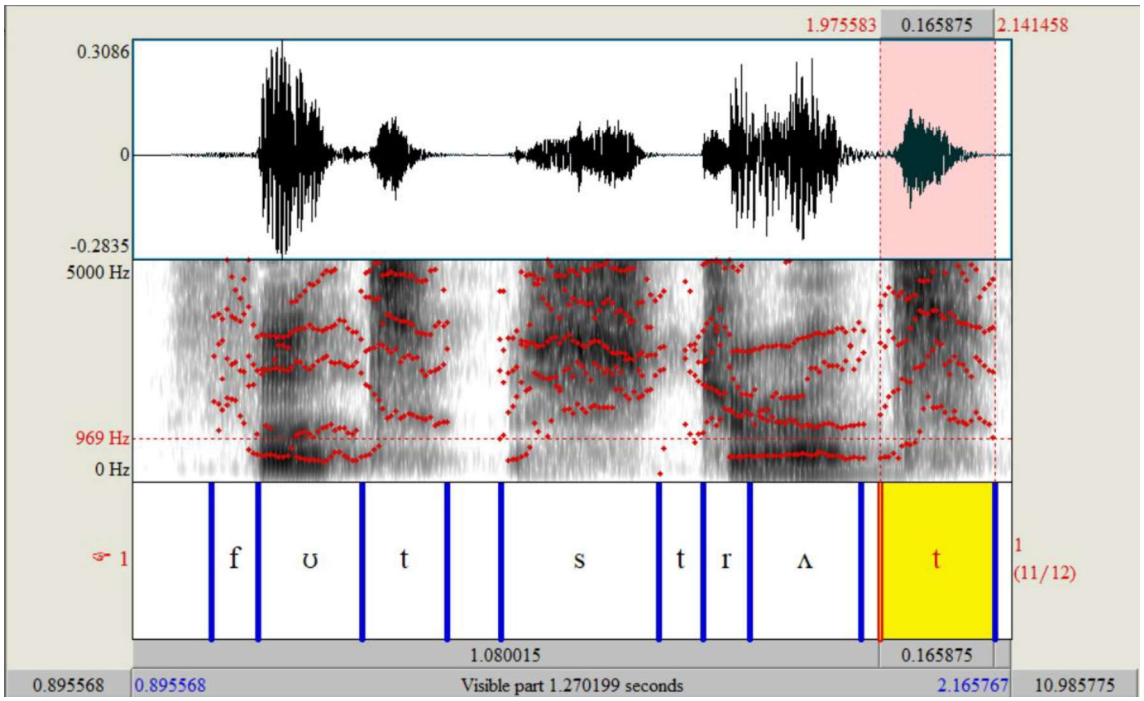

Figure 8: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker H.

3.2. Should and shut analysis

The pair of words should-shut is the second pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter should as /ʃʊd/ and shut as /ʃʊt/. However, someone who speaks with an accent that presents the split should utter foot as /ʃʊd/ and strut as /ʃʌt/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in should has a very low F1 compared to the vowel in shut which highlights the presence of the split in the speaker. The phoneme /ʌ/ has the F1 at around 700 Hz and the F2 at about 1200 Hz located as illustrated in Figure 9.

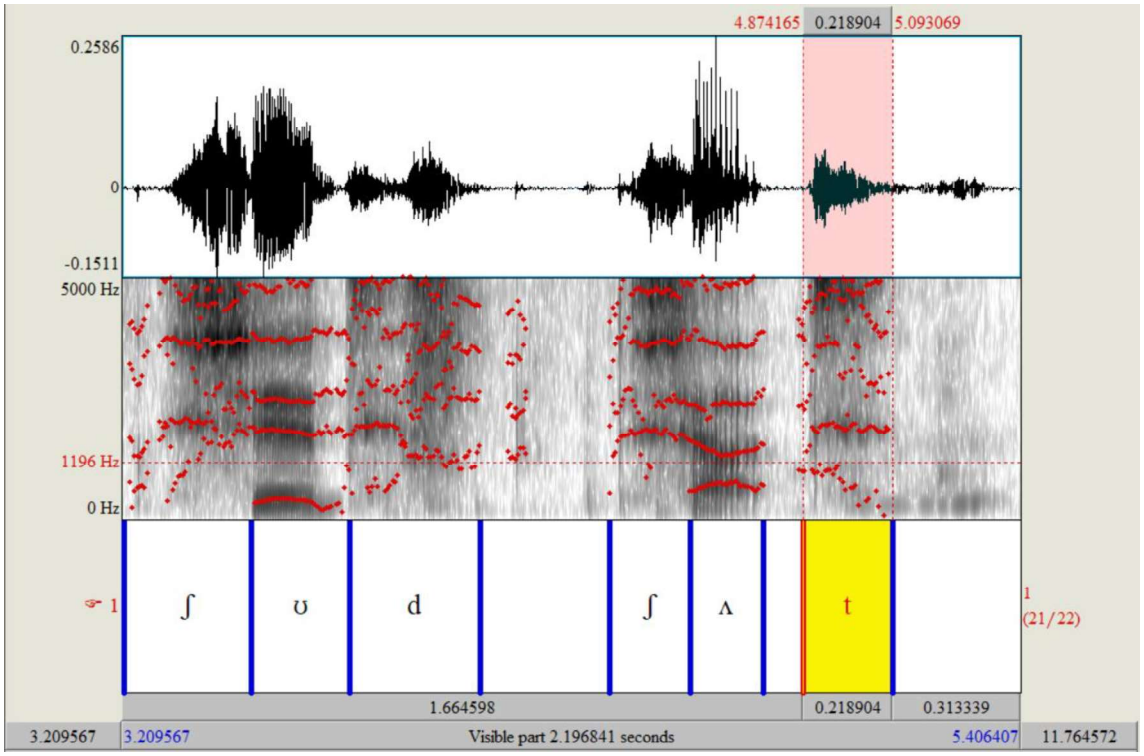

Figure 9: Waveform and spectrographic representation for the words “should” and “shut” produced by control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in should and shut opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

This can be seen in the spectrograms of subjects D and E, for example. These show that the F1 and F2 of the vowels of both words are located exactly in the same area, which highlights that they use the same phoneme. This phoneme, due to its location, will be the phoneme /ʊ/, as expected in subjects who do not have the split present in their accent. (Figure 10 and 11)

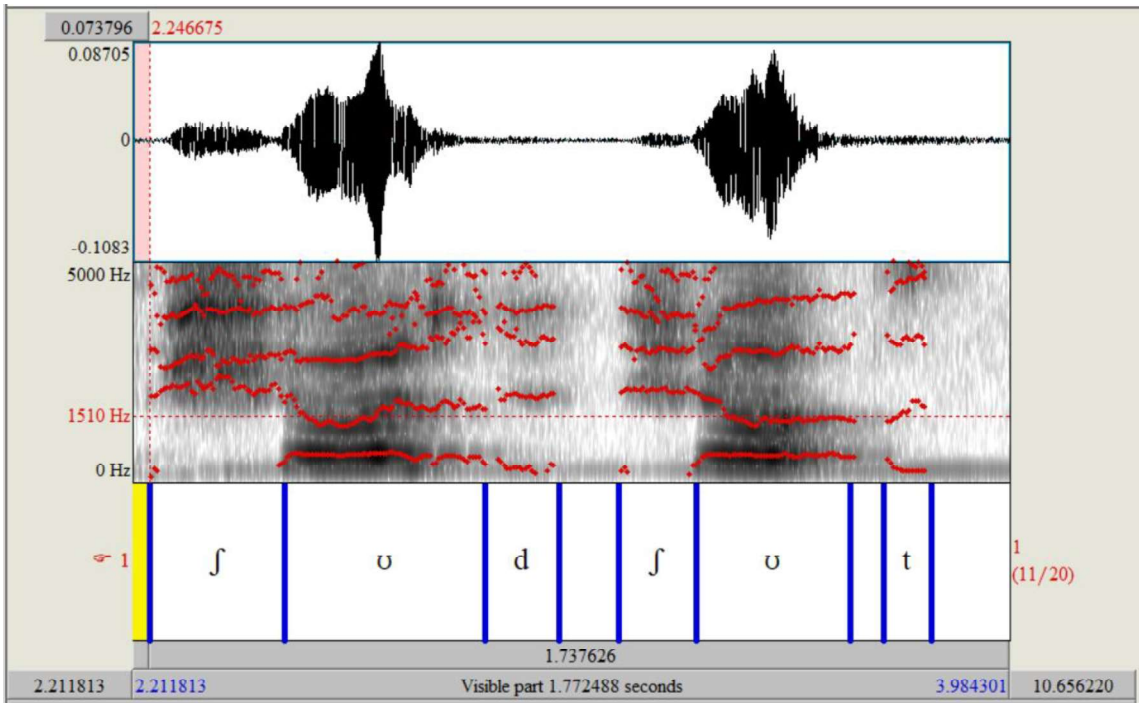

Figure 10: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker D.

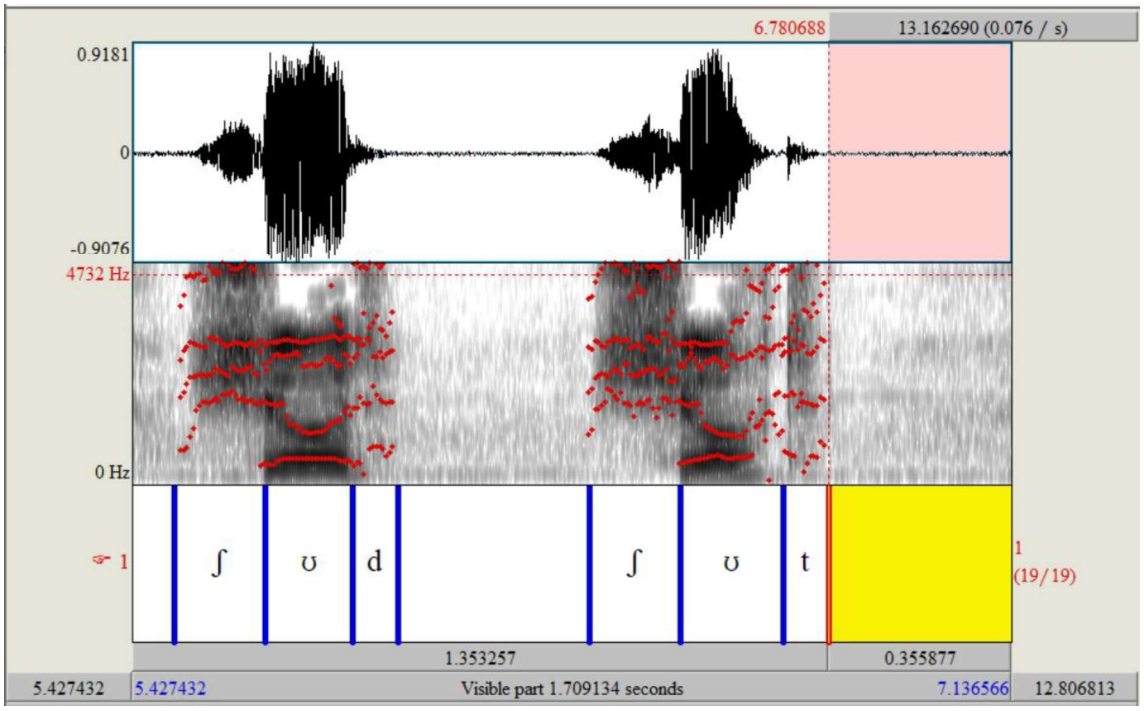

Figure 11: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker E.

However, speaker H utters the word shut with a different phoneme compared to should as the frequencies for F1 and F2 for both vowels are located in different areas of the spectrogram. However, the phoneme uttered differs to the usual frequencies for /ʌ/ as the F1 and F2 are lower than the normal average for that phoneme which could be related to the speaker.

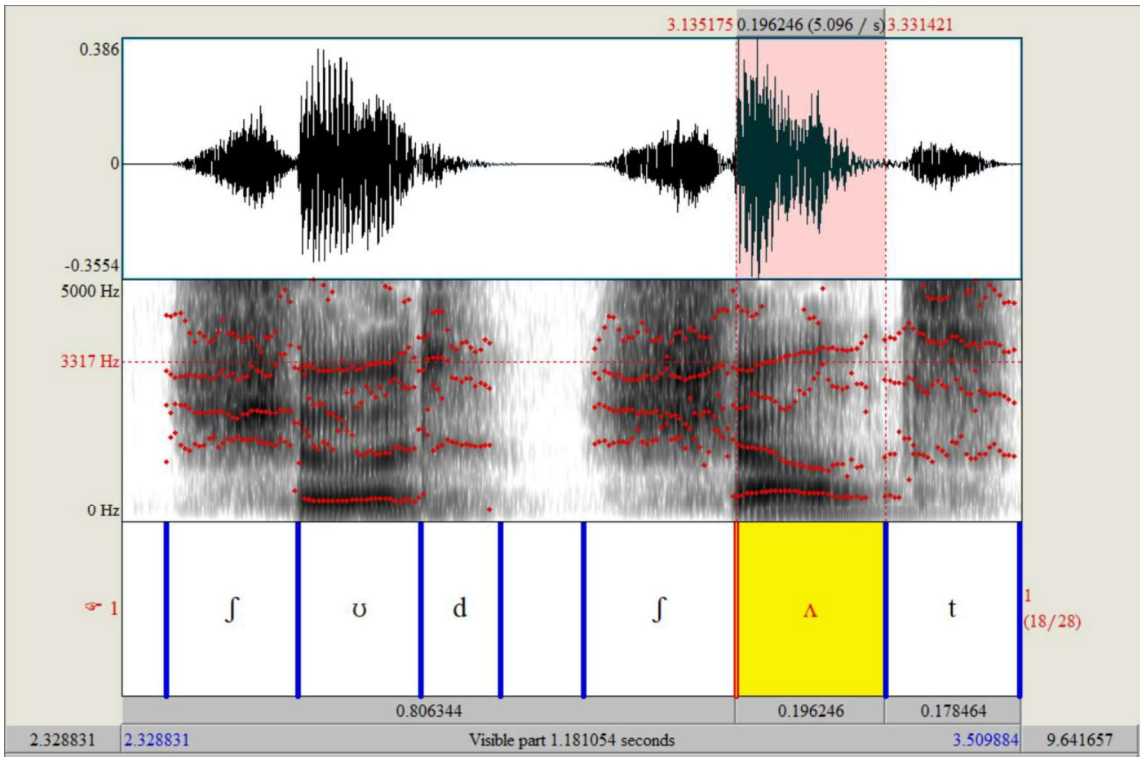

Figure 12: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker H.

3.3. Put and putt analysis

The pair of words put-putt is the third pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter put as /pʊt/ and putt as /pʊt/. However, someone who speaks with an accent that presents the split should utter put as /pʊt/ and putt as /pʌt/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in put has a very low F1 compared to the vowel in putt which highlights the presence of the split in the speaker. The speaker utters the word putt using the phoneme /ʌ/ as the F1 is located at around 800 Hz compared to the low frequency in the word put as it is uttered with the phoneme /ʊ/. as illustrated in Figure 13.

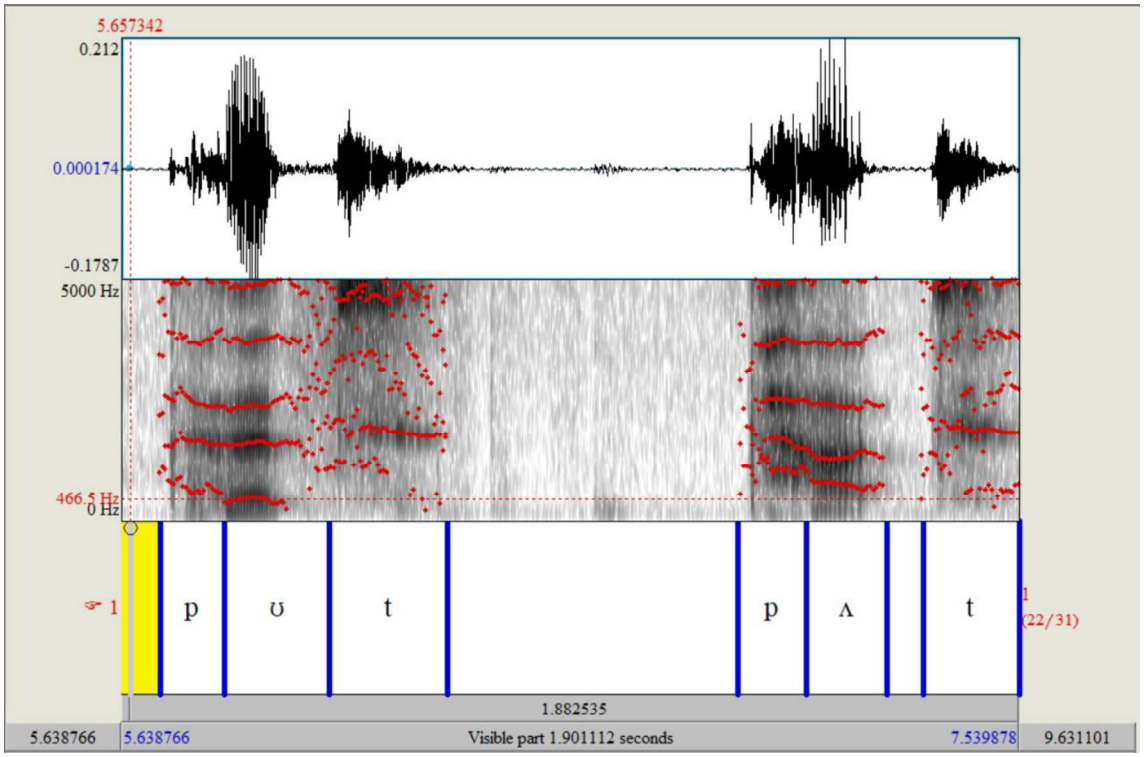

Figure 13: Waveform and spectrographic representation for the words “put” and “putt” produced by control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in put and putt opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

This can be illustrated by the spectrogram of speaker C (Figure 14), where the F1 and F2 of the vowels of both words are located exactly in the same region and the F1 is located between 500 to 600 Hz and the F2 is just above 1000 Hz in both vowels.

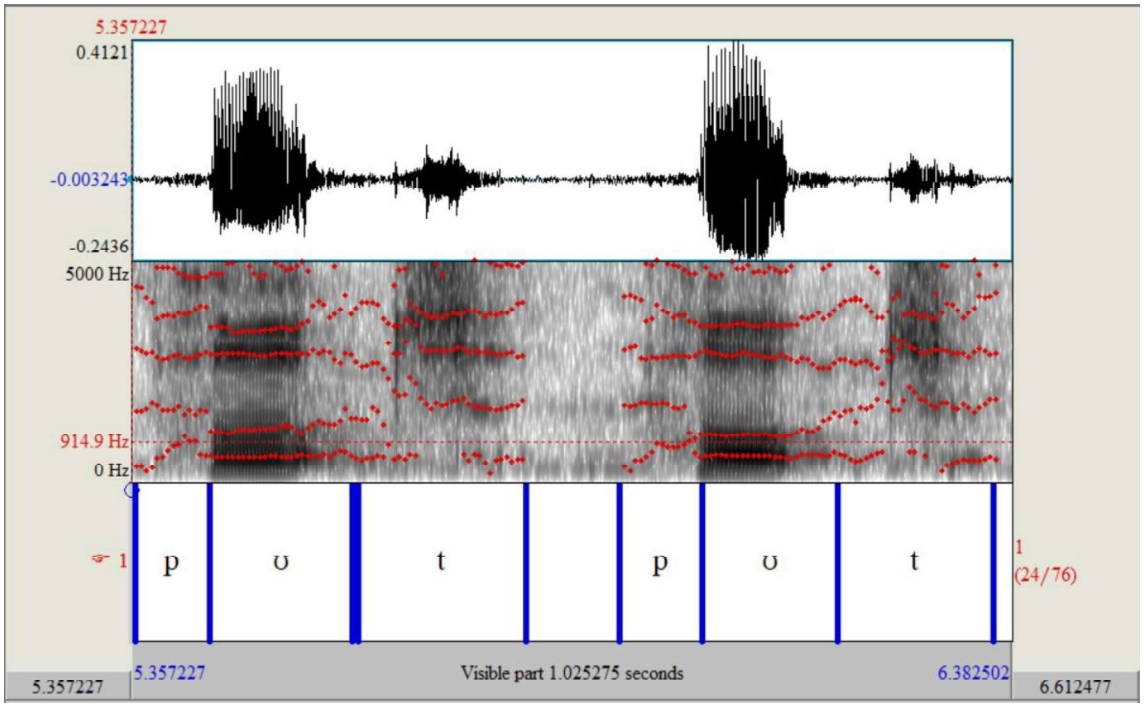

Figure 14: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker C.

However, speaker H utters the word put with a different phoneme compared to putt as the frequencies for F1 and F2 for both vowels are located in different areas of the spectrogram. However, the phoneme uttered differs to the usual frequencies for /ʌ/ as the F1 and F2 are lower than the normal average for that phoneme which could be related to the speaker.

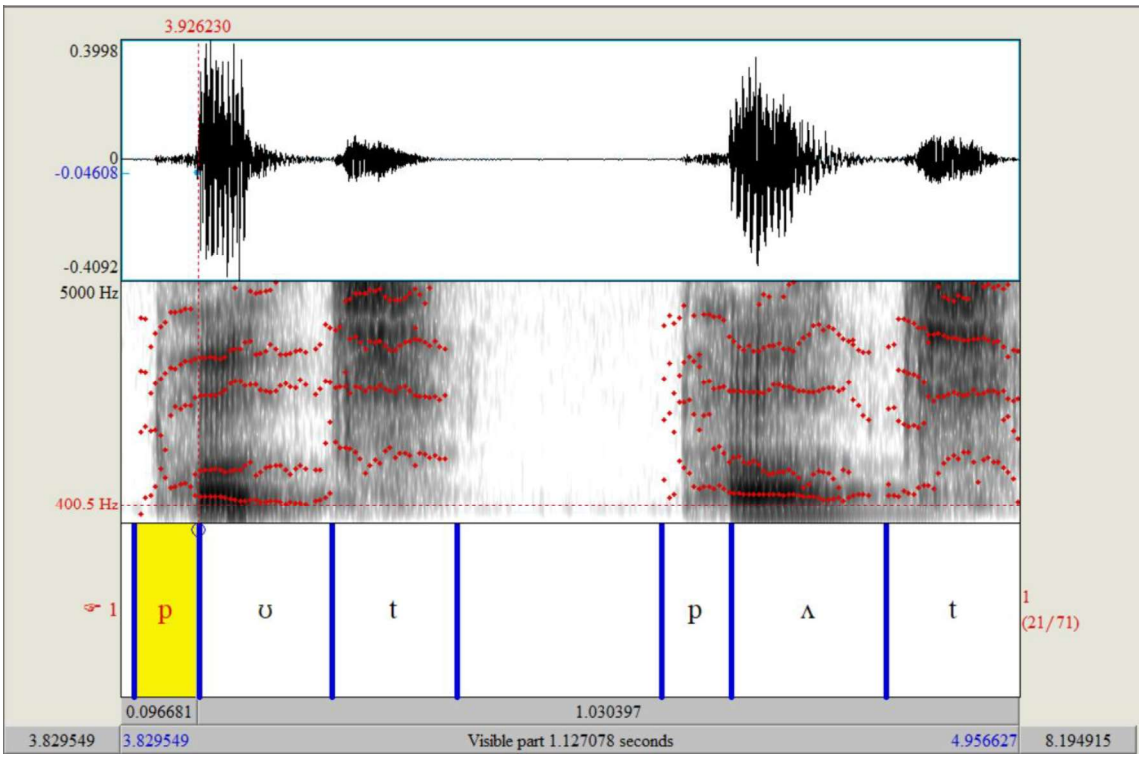

Figure 15: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker H

3.4. Stood and stud analysis

The pair of words stood-stud is the fourth pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter stood as /stʊd/ and stud as /stʊd/. However, someone who speaks with an accent that presents the split should utter stood as /stʊd/ and stud as /stʌd/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in stood has a very low F1 compared to the vowel in stud which highlights the presence of the split in the speaker. The speaker utters the word stud using the phoneme /ʌ/ as the F1 is located above 700 Hz compared to the low frequency in the word stood as it is uttered with the phoneme /ʊ/, as illustrated in Figure 16.

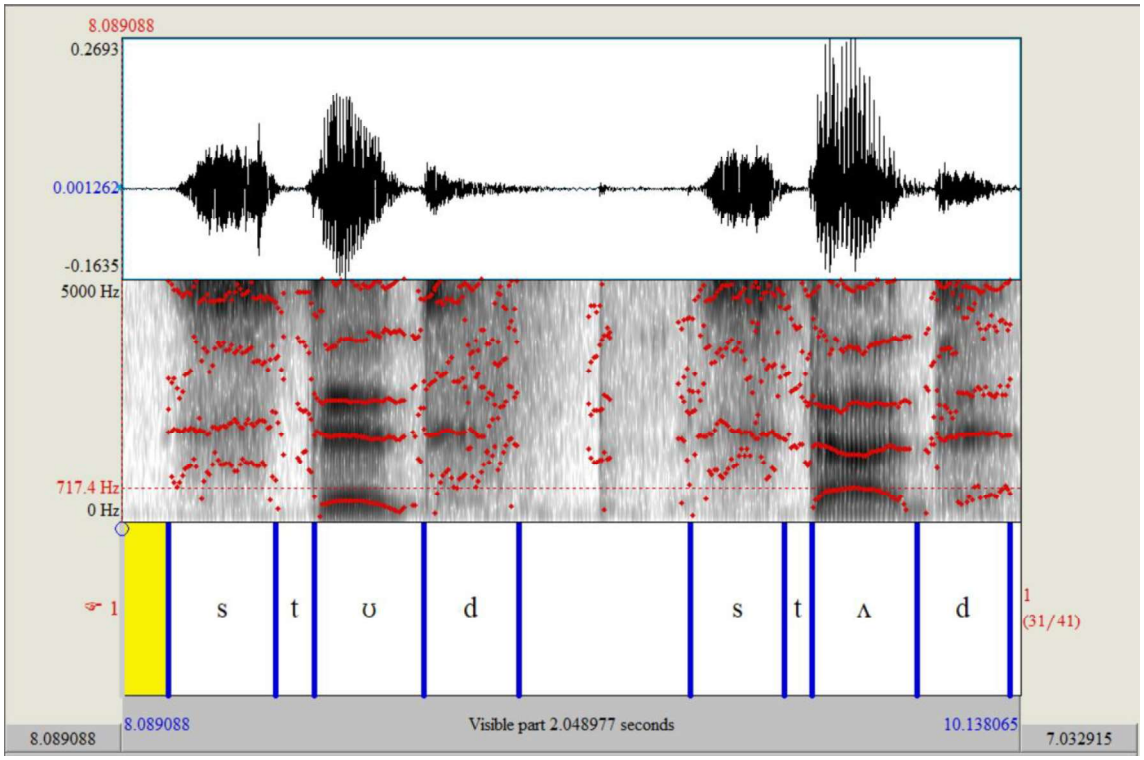

Figure 16: Waveform and spectrographic representation for the words “stood” and “stud” produced by control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in stood and stud opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

The spectrogram of speaker B illustrates this (Figure 17), where the F1 and F2 of the vowels of both words are located exactly in the same region.

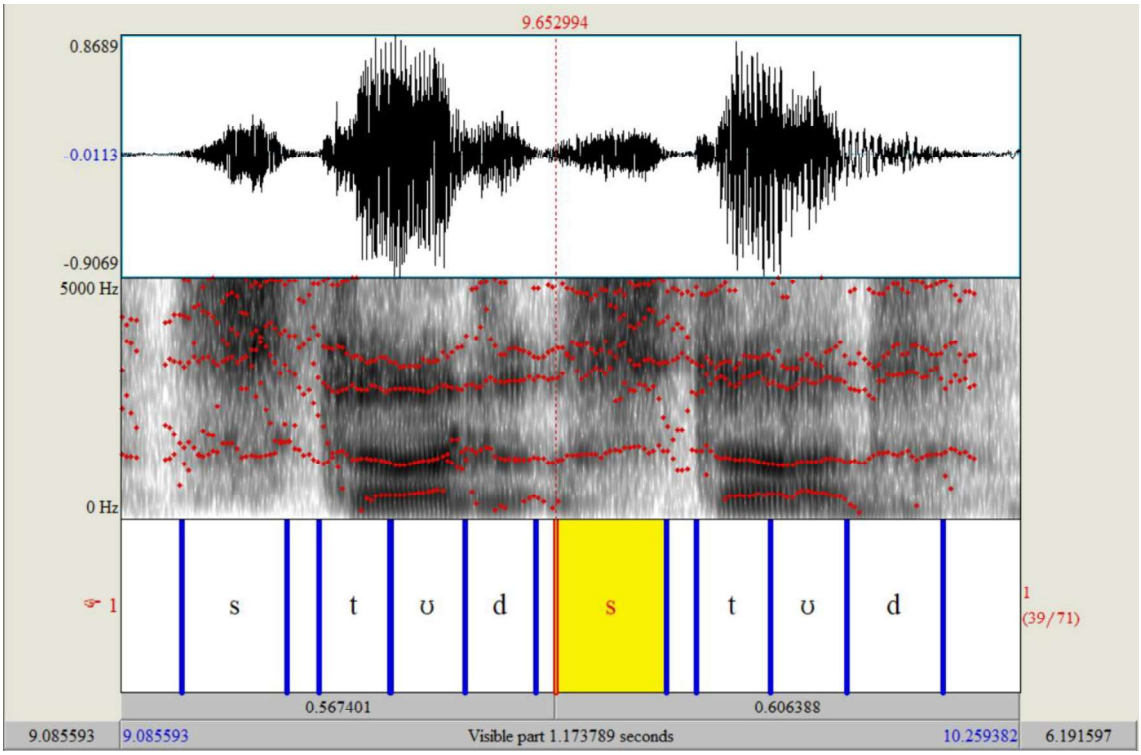

Figure 17: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker B.

However, speaker H utters the word stood with a different phoneme compared to stud as the frequencies for F1 and F2 for both vowels are located in different areas of the spectrogram. However, the phoneme uttered differs to the usual frequencies for /ʌ/ as the F1 and F2 are lower than the normal average for that phoneme which could be related to the speaker as illustrated in Figure 18.

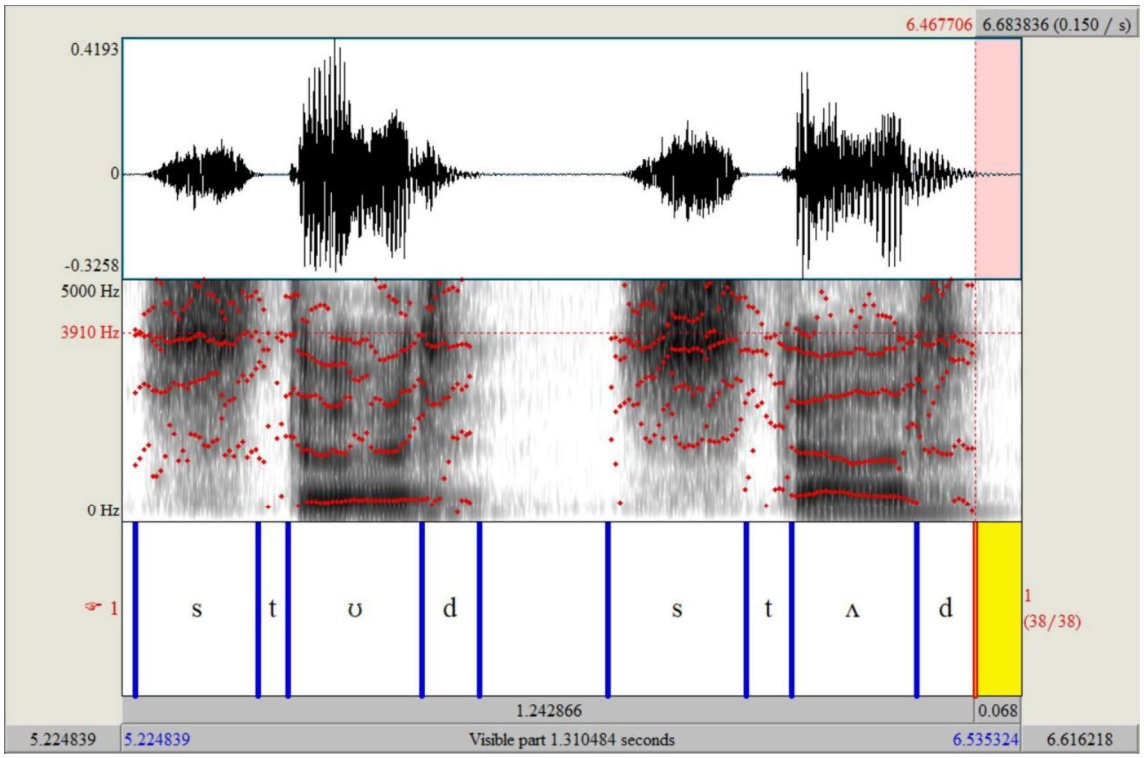

Figure 18: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker H.

3.5. Book and buck analysis

The pair of words book-buck is the fifth pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter book as /bʊk/ and buck as /bʊk/. However, someone who speaks with an accent that presents the split should utter book as /bʊk/ and buck as /bʌk/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in book has a very low F1 compared to the vowel in buck which highlights the presence of the split in the speaker. The speaker utters the word book using the phoneme /ʊ/, as F1 is located in the very low frequency range. The word buck presents the phoneme /ʌ/ as the F1 is located above 700 Hz compared to the low frequency in the word book, as illustrated in Figure 19.

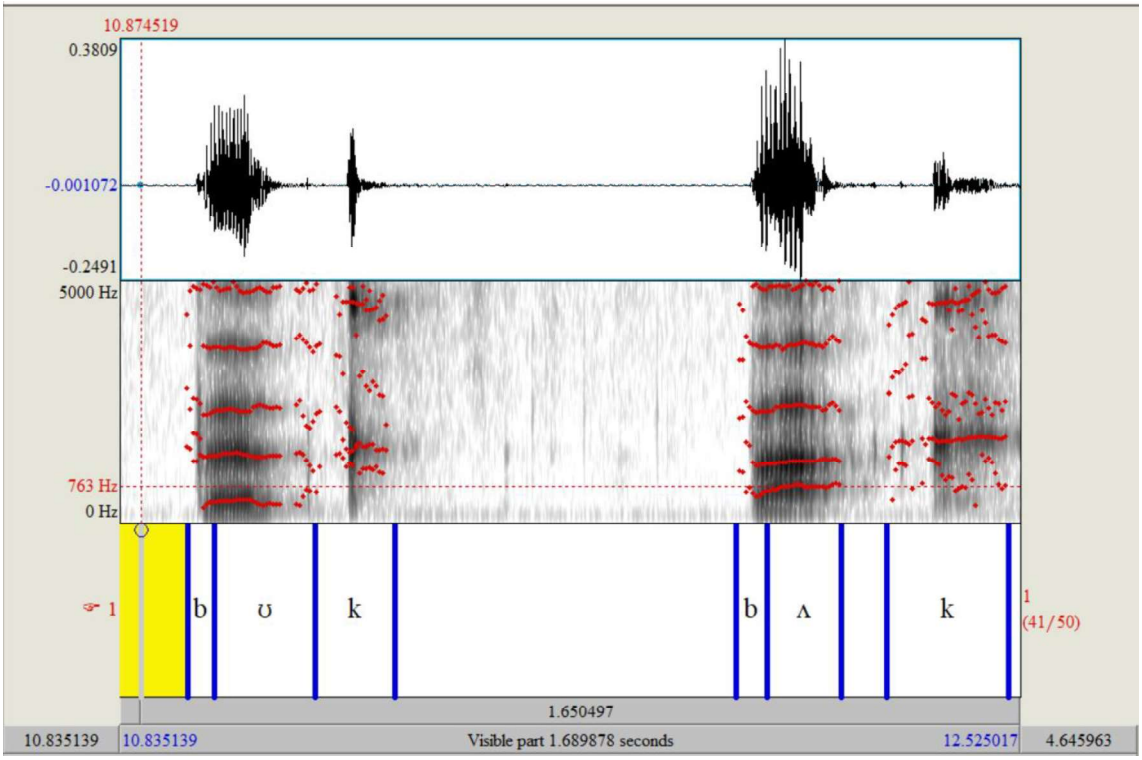

Figure 19: Waveform and spectrographic representation for the words “book” and “buck” produced by the control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in book and buck opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

This can be illustrated by having a look at the spectrogram of speaker B (Figure 20), where the F1 and F2 of the vowels of both words are located exactly in the same region and the F2 is located below 1000 Hz which is lower than where the phoneme /ʌ/ should be located, which shows that this speaker does not present the split.

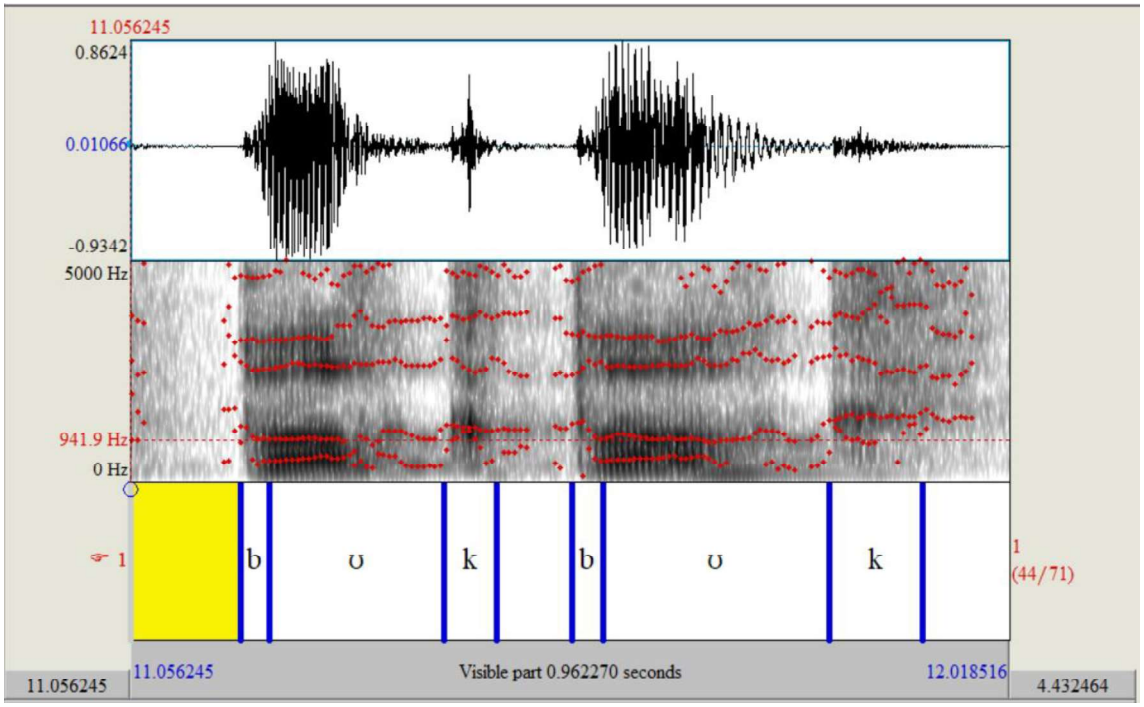

Figure 20: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker B.

Speaker H utters the word buck with a different vowel when the audio is played and he utters the word book /bʊk/ and buck /bʌck/. However, the F1 and F2 for both words are located in exactly the same area of frequency and the F1 and F2 for the phoneme /ʌ/ are lower than the normal average for that phoneme and probably compared to the previous minimal pairs as illustrated in Figure 21. This could be because the phoneme /ʊ/ is influence by the surrounding sounds of the phonemes /b/ and /k/.

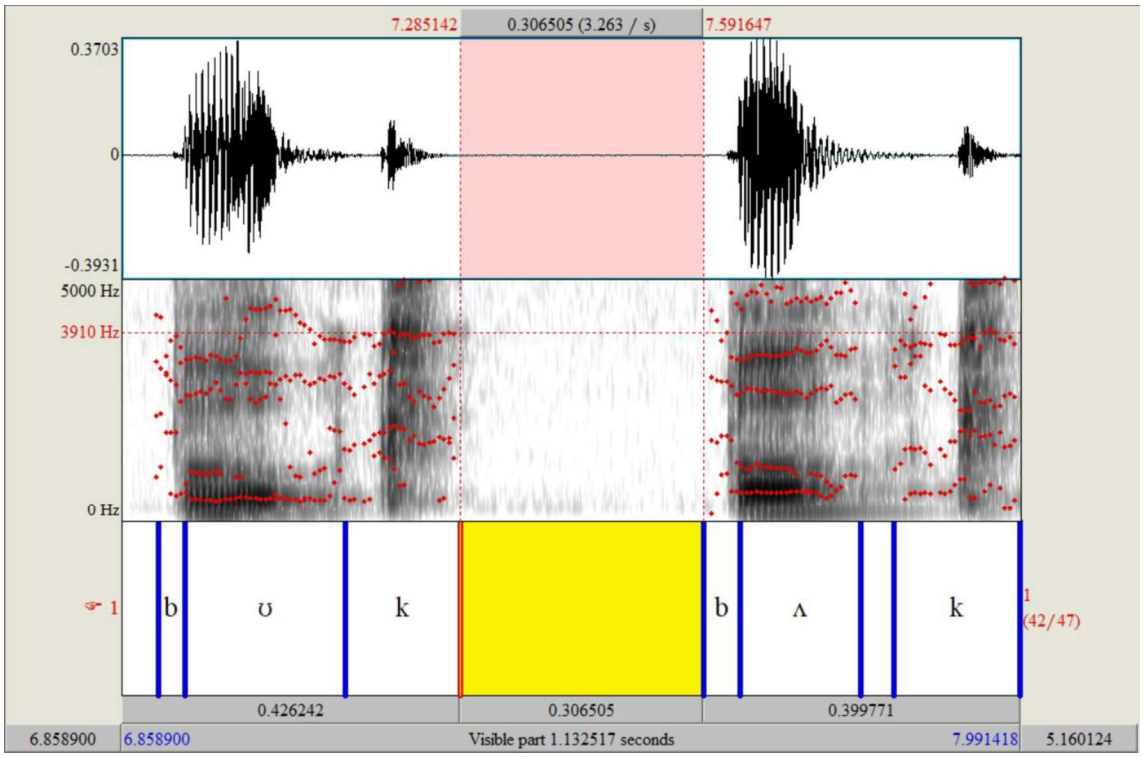

Figure 21: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker H.

This minimal pair for speaker H needs further study, so all participants included the control subject were contacted and given the recording of the minimal pair book-buck for subject H and they were asked to report if they could hear them as homophones or not.

All 8 participants agreed to report back on this matter and for this phoneme and 8 out 8 (100 %) reported that the word buck sound completely different to the word book, therefore they were not homophones. Speaker F reported the following “they sound very different”. This reinforces that speaker H did utter both words as a minimal pair with different phonemes.

3.6. Crooks and crux analysis

The pair of words crooks-crux is the sixth pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter book as /krʊks/ and crux as /krʊks/. However, someone who speaks with an accent that presents the split should utter crooks as /krʊks/ and crux as /krʌks/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in crooks has a very low F1 compared to the vowel in crux which highlights the presence of the split in the speaker. The speaker utters the word crooks using the phoneme /ʊ/, as F1 is located in the very low frequency range, as illustrated in Figure 22.

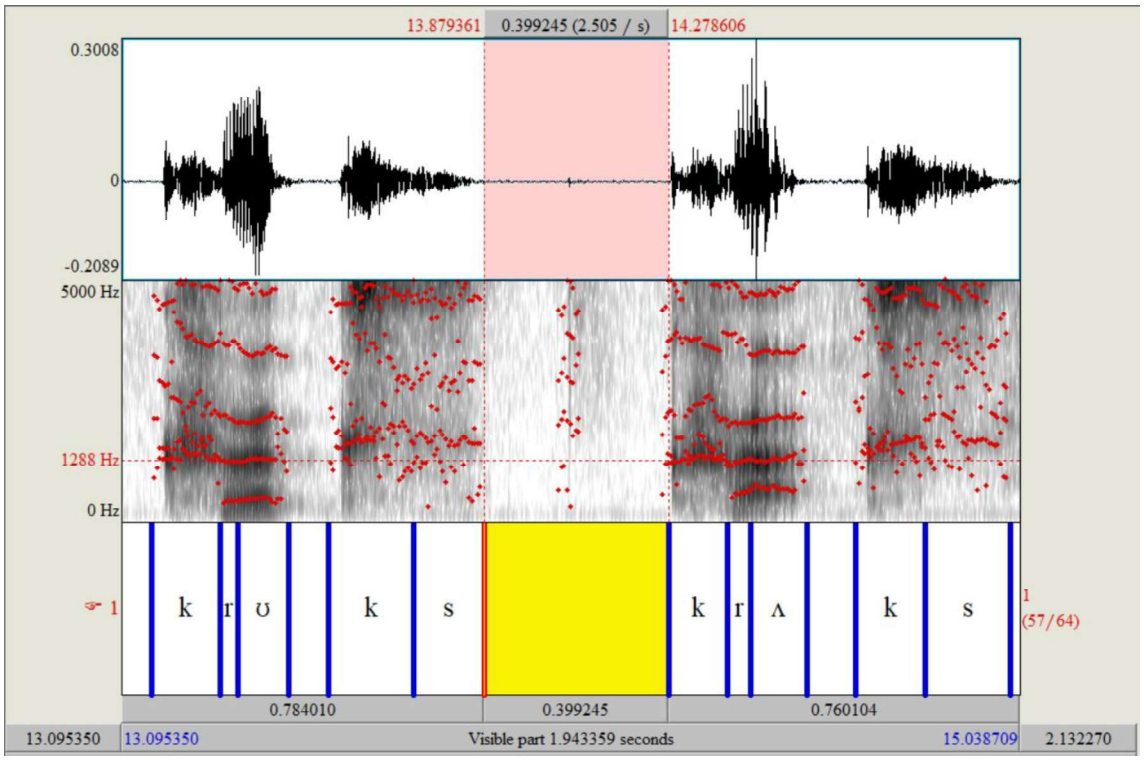

Figure 22: Waveform and spectrographic representation for the words “crooks” and “crux” produced by the control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in crooks and crux opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

Speaker F, as illustrated in Figure 23, has the F1 and F2 of the vowels of both words located exactly in the same region and the frequencies for F1 and F2 are in the right area where the phoneme /ʊ/ should be located, which shows that this speaker does not present the split.

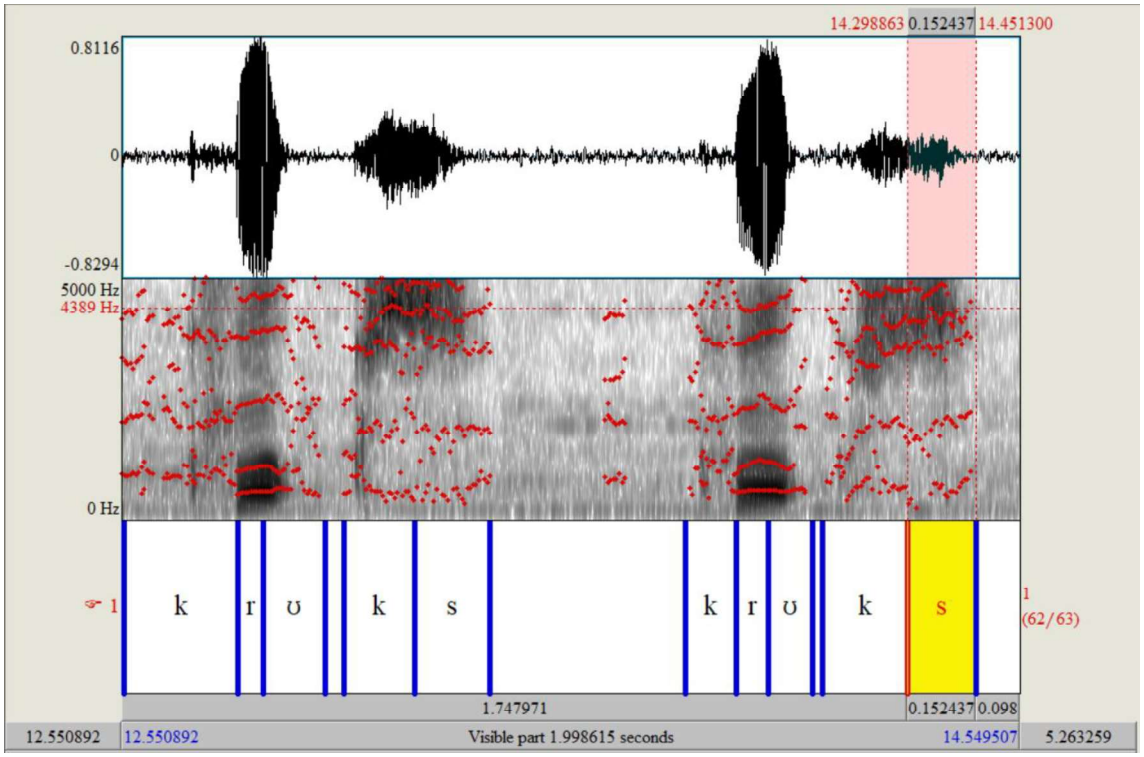

Figure 23: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker F.

Speaker H utters the word crooks and crux with a slightly different vowel, and they do not sound as homophones when played on Praat, as he utters the word crooks /krʊks/ and crux /krʌks/. However, the F1 and F2 for both words are located in exactly the same area of frequency and the F1 and F2 for the phoneme /ʌ/ are lower than the normal average for that phoneme. As well the interval distance between F2 and F1 in the phoneme /ʌ/ in crux is smaller compared to the phoneme /ʊ/ in crooks as illustrated in Figure 24. This could be

because the phoneme /ʌ/ is influenced by the surrounding sounds of the phonemes /r/ and /k/.

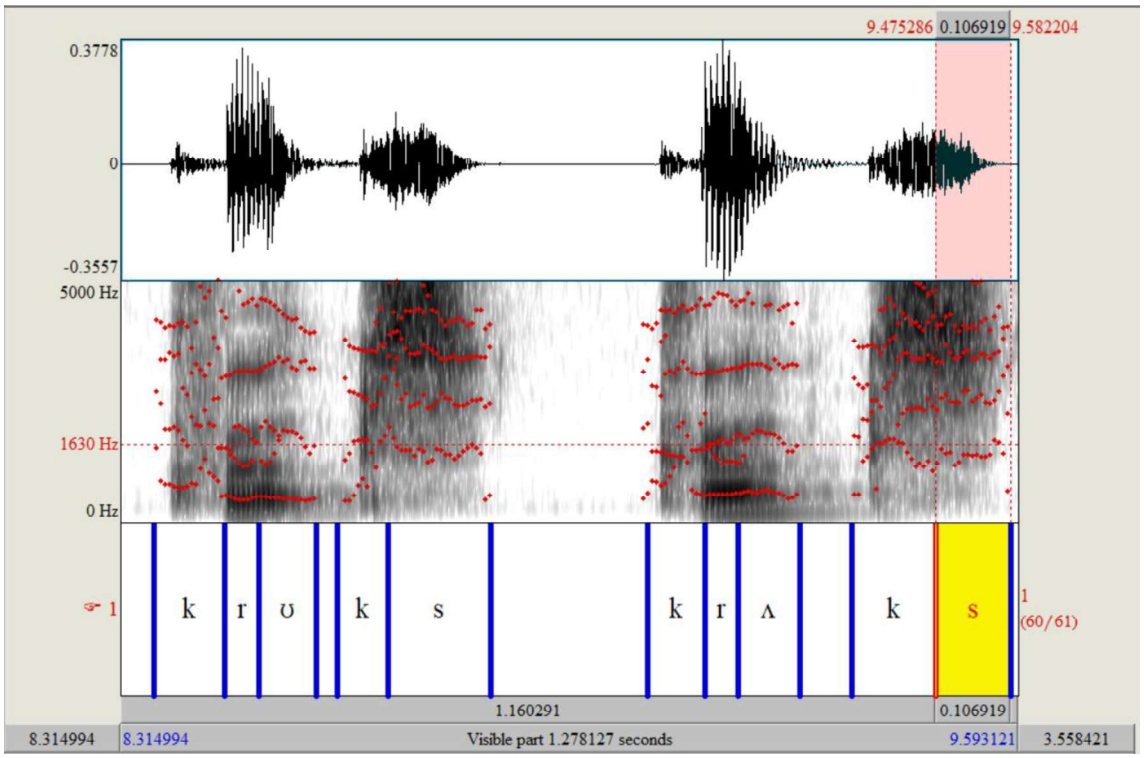

Figure 24: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker H.

This minimal pair for speaker H needs further study, so all participants included the control subject were contacted and given the recording of the minimal pair crooks and crux for subject H and they were asked to report if they could hear them as homophones or not.

All 8 participants agreed to report back on this matter and for this phoneme and 7 participants (87.5 %) reported that the word crux sound completely different to the word crooks, therefore they were not homophones. Speaker C is the only one that reported that they were homophones. This reinforces that speaker H did uttered both words as a minimal pair with different phonemes despite the frequency of both phonemes been so close.

3.7. Look and luck analysis

The pair of words look-luck is the last pair analysed in the recordings. A speaker that comes from an area where the split is absent will utter look as /lʊk/ and luck as /lʊk/. However, someone who speaks with an accent that presents the split should utter look as /lʊk/ and luck as /lʌk/, which means that they are not homophones.

The control speaker as expected makes a difference between the vowels. This can be seen as the vowel in look has a very low F1 compared to the vowel in luck which highlights the presence of the split in the speaker. The speaker utters the word luck using the phoneme /ʌ/, as the F1 is located in a higher area compared to the word look, as illustrated in Figure 25.

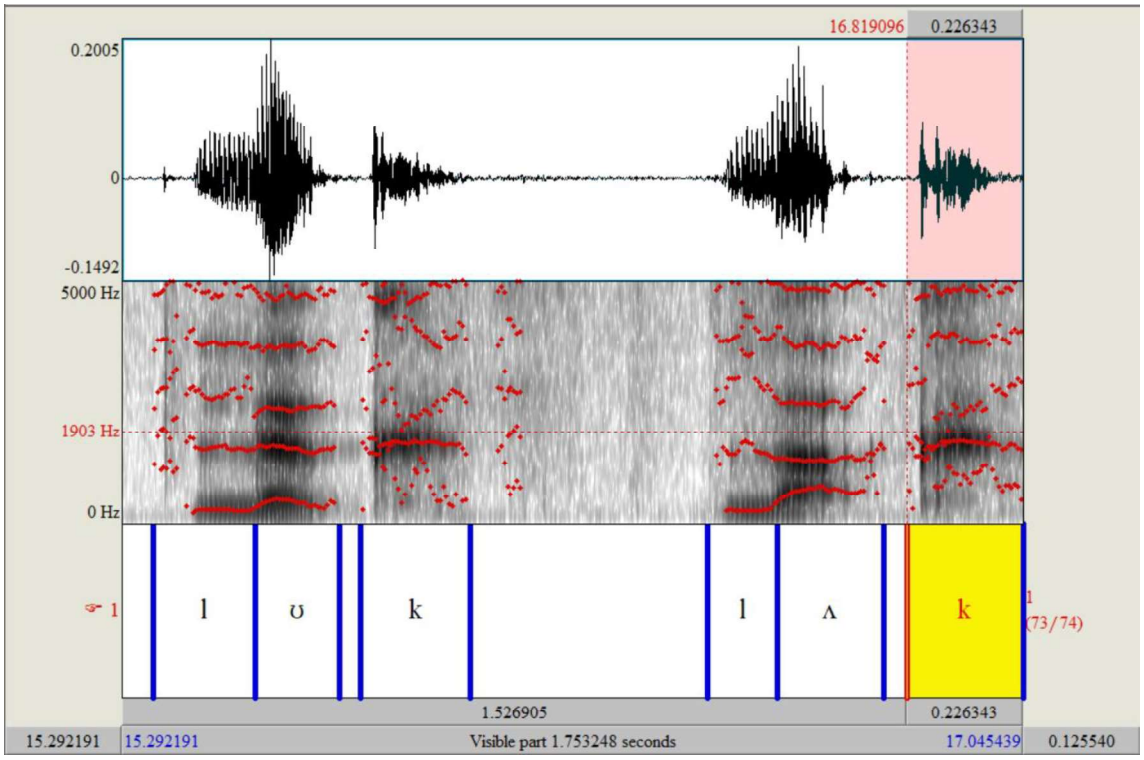

Figure 25: Waveform and spectrographic representation for the words “look” and “luck” produced by the control speaker.

The analysis shows that speakers A, B, C, D, E, F and G used the phoneme /ʊ/ in book and buck opposed to the control speaker. The location of the F1 and F2 of the vowel sound in both words are located in the same place in the spectra, which means that the user used the same sound in both words.

Speaker A is a very illustrative example. The vowel phonemes in both words look and luck have exactly the same F1 and F2 in both cases as illustrated in Figure 26, both F1 and F2 of the vowels have a frequency between 450 and 900 which can be correlated with the phoneme /ʊ/.

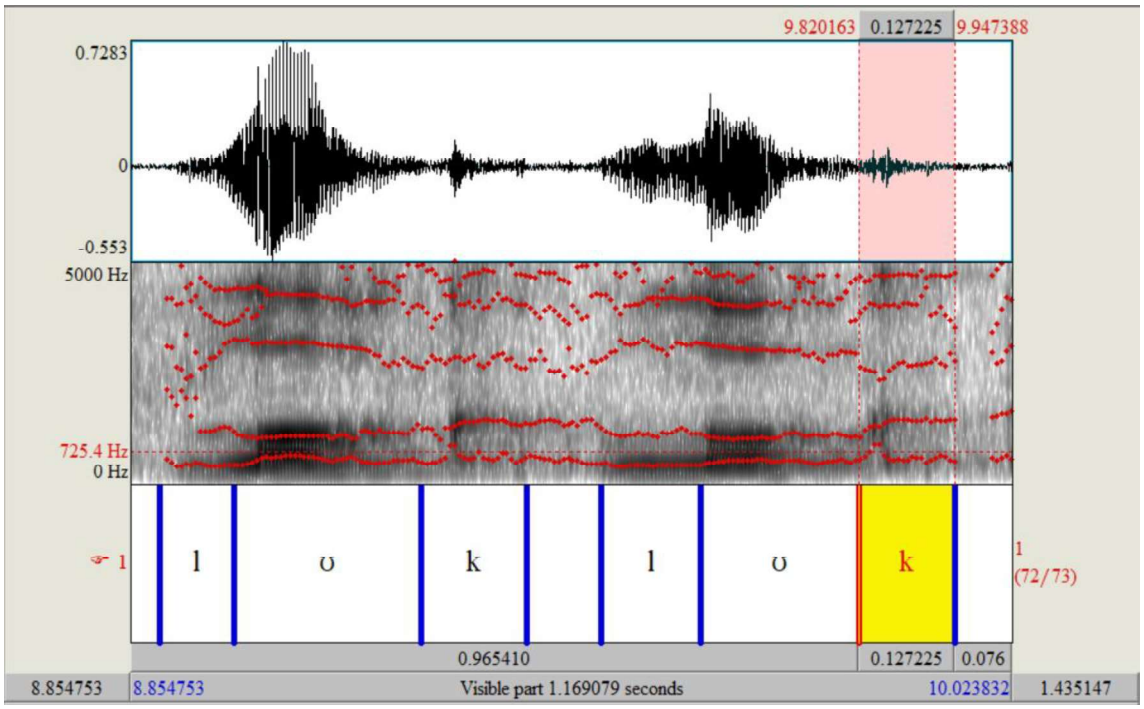

Figure 26: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker A.

Speaker H utters the word look and luck with a different vowel and they do not sound as homophones when played on Praat, as he utters the word look /lʊk/ and luck /lʌk/. However, the F1 and F2 for both words are located in exactly the same area of frequency and the F1 and F2 for the phoneme /ʌ/ are lower than the normal average for that phoneme. As well the interval distance between F2 and F1 in the phoneme /ʌ/ in luck is bigger compared to the phoneme /ʊ/ in look

as illustrated in Figure 27. This could be because the phoneme /ʌ/ is influenced by the surrounding sounds of the phonemes /r/ and /k/.

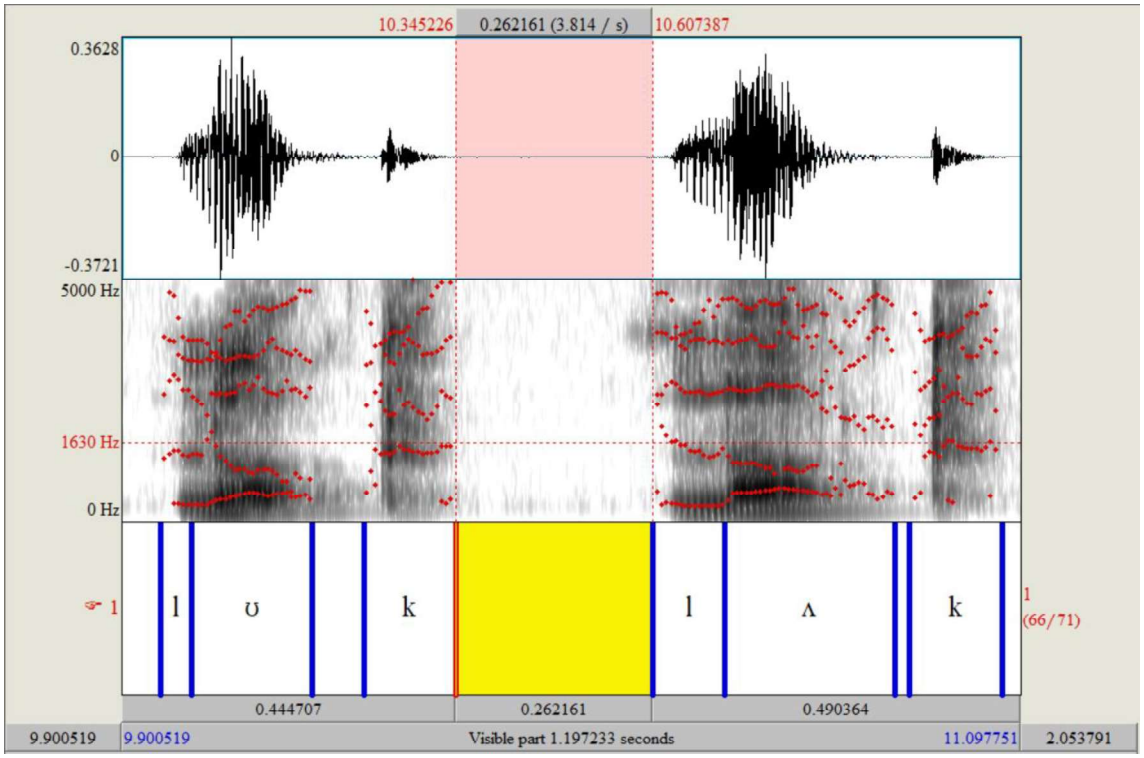

Figure 27: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker H.

This minimal pair for speaker H needs further study, so all participants included the control subject were contacted and given the recording of the minimal pair look and luck for subject H and they were asked to report if they could hear them as homophones or not.

All 8 participants agreed to report back on this matter and for this phoneme and 100 % reported that the word luck sound completely different to the word look, therefore they were not homophones. Speaker E reported the following “there is no way that both sound the same the first one is a verb and the second one is what you have when you win the lottery”. This reinforces that speaker H did uttered both words as a minimal pair with different phonemes.

4. Conclusion

In this study, 8 people from the area of Yorkshire have produced 7 pair of words that have been analysed using the computer program Praat. Only 8 people have been included due to the limitation on the extension of the dissertation. This is not a representative sample of the whole Yorkshire area, but it can help people understanding the phenomenon.

Each pair of words has been analysed in isolation and one spectrogram per pair of words and subject of the study and control has been created and added to this work. Each spectrogram shows the phonemes of each word with the consonant and vowel formants.

This study wanted to highlight the absence of the foot-strut split in people with a Yorkshire accent by uttering the pair of words in isolation and the spectrograms of 7 out of 8 subjects (subjects A to G) showed that they did not have the split and they pronounced both of the words as homophones. Therefore, 87.5 % of the interviewees did not present the foot-strut split in their accent.

The demographics of the 7 subjects were quite varied, from a child aged 13 to subject B aged 56 and the study levels of these subjects range from minimum compulsory studies to master's degree. This shows that demographics such as age, gender and studies are likely not to be strong determinants in the presence or absence of the split in people from Yorkshire.

One of the participants, subject H, who is originally from North Yorkshire but currently lives in Sheffield is the only participant (12.5 % of the total) who has the split present when uttering the pair of words. He is doing an apprenticeship through a further education college but we do not know more about his background, such as where his parents come from and from which social class the family is, so we suggest that a further analysis of the demographics needs taken into account to determine if this phenomenon is to do with the fact that he is from a middle class family as observed by Lass (2000).

Further investigation with a larger sample of recorded speakers is required in order to get meaningful data with statistic validity.

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6. Annexes

6.1. Informed consent sample

Consent for participation in a research interview:

The Yorkshire accent and the lack of the FOOT-STRUT split

I agree to participate in this interview for the above-mentioned dissertation conducted by Dr Adrian Beltran-Martinez for the Universidad Nacional a Distancia, Spain. The purpose of this document is to specify the terms of my participation in the project through being interviewed.

1. I have been given sufficient information about this project. The purpose of my participation as an interviewee in this project has been explained to me and is clear.

2. My participation as an interviewee in this project is voluntary. There is no explicit or implicit coercion whatsoever to participate.

3. Participation involves being recorded uttering a set number of works that will be analysed by the interviewer. I allow the researcher to use the recorded audio only for purposes of the above-mentioned dissertation.

4. I have the right not to answer any of the questions. If I feel uncomfortable in any way during the interview session, I have the right to withdraw from the interview. It is clear that I am at any point of time fully entitled to withdraw from participation.

5. I have been given the explicit guarantees that, if I wish so, the interviewer will not identify me by name or function in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. In all cases subsequent uses of records and data will be subject to standard data use policies at the EUI (Data Protection Policy).

6. I have read and understood the points and statements of this form. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

8. I have been given a copy of this consent form co-signed by the interviewer.

_____ _____

Participant's Signature Date

_____ _____

Interviewer's Signature Date

6.2. Other spectra

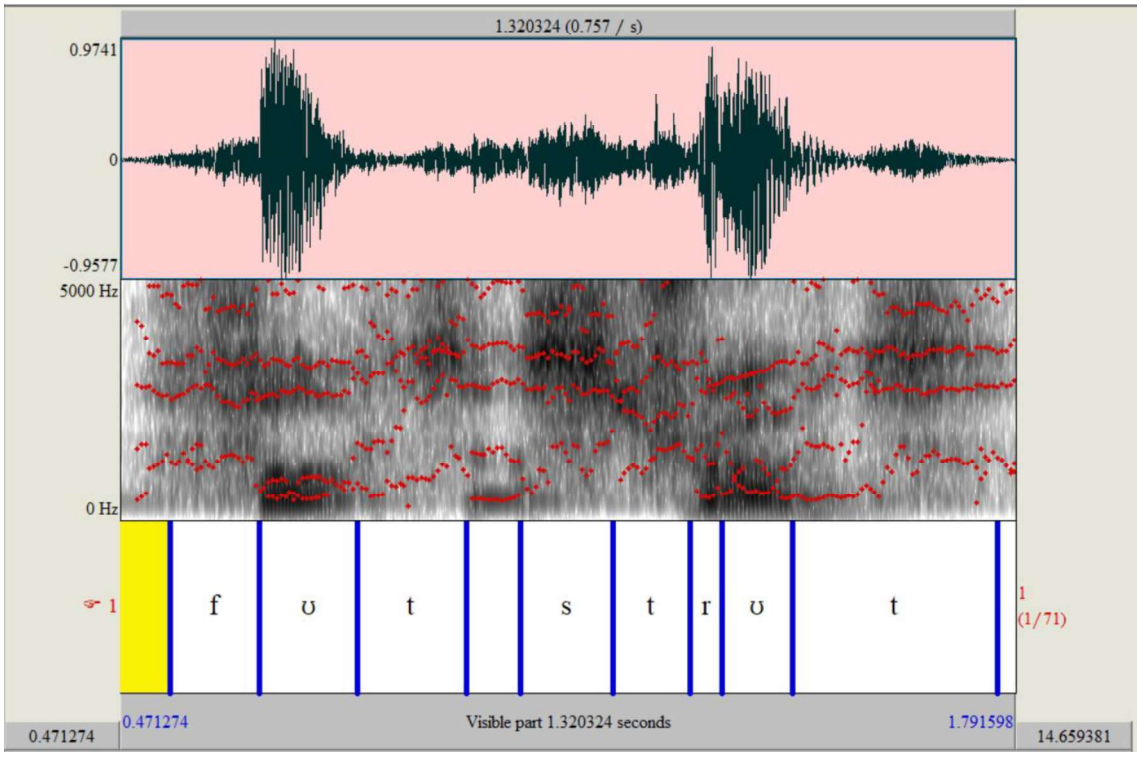

Figure 28: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker B.

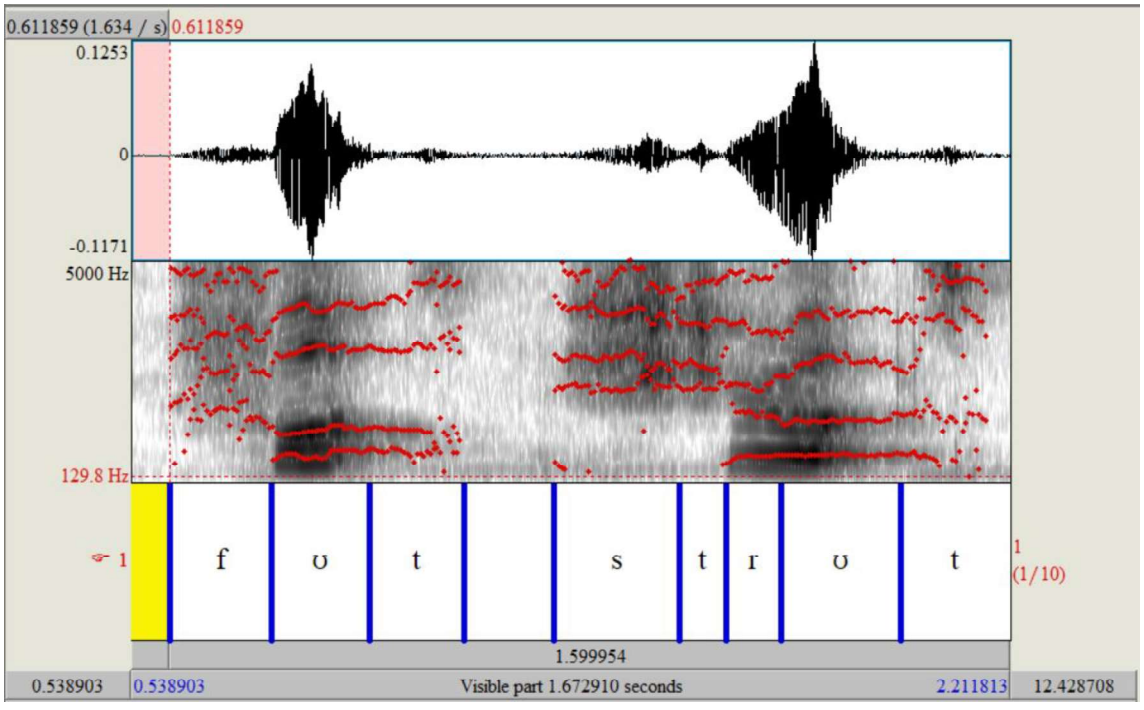

Figure 29: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker D.

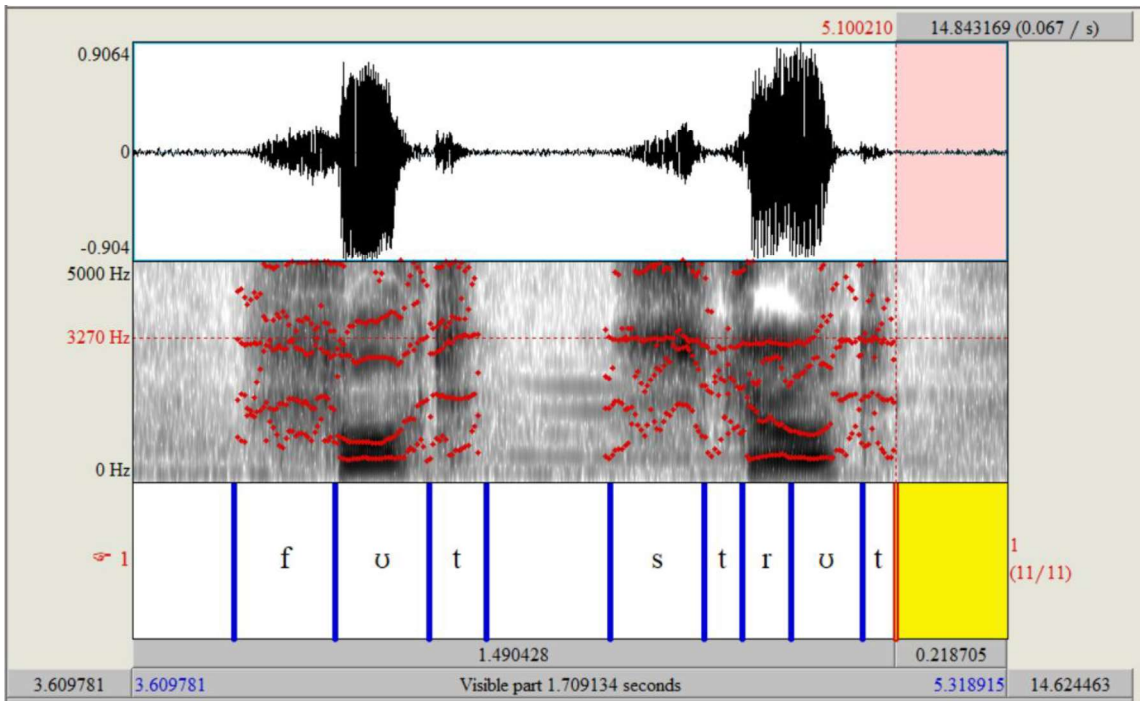

Figure 30: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker E.

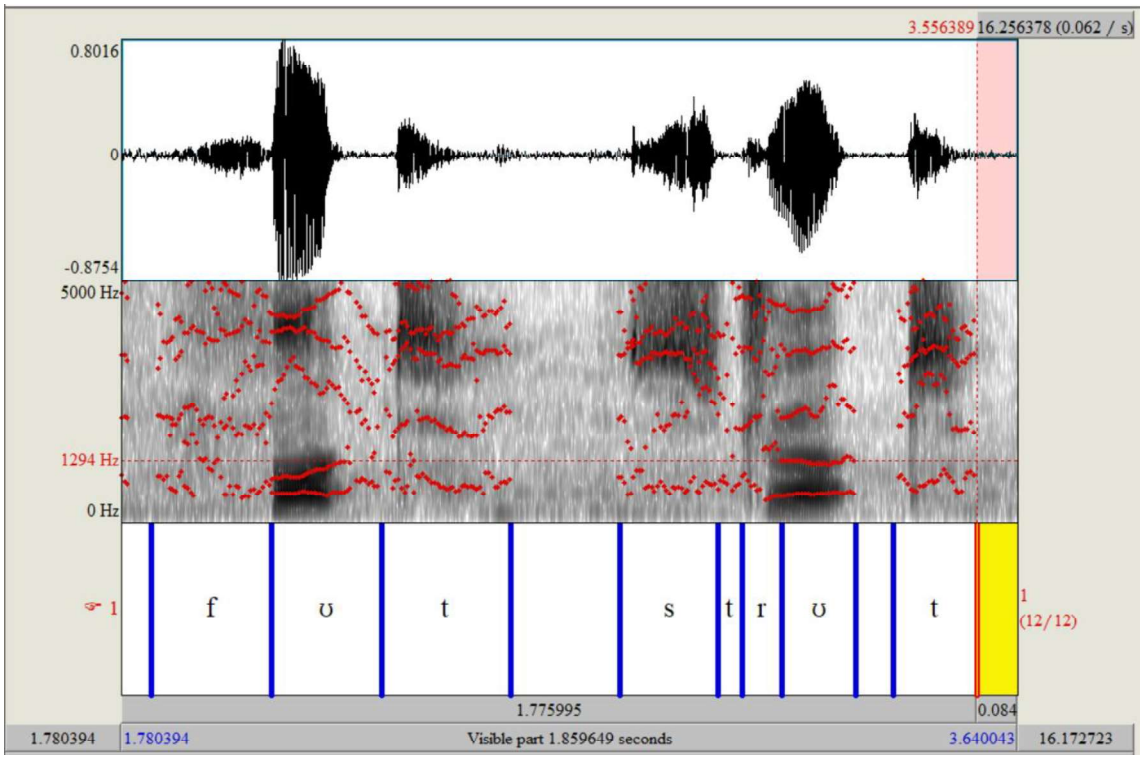

Figure 31: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker F.

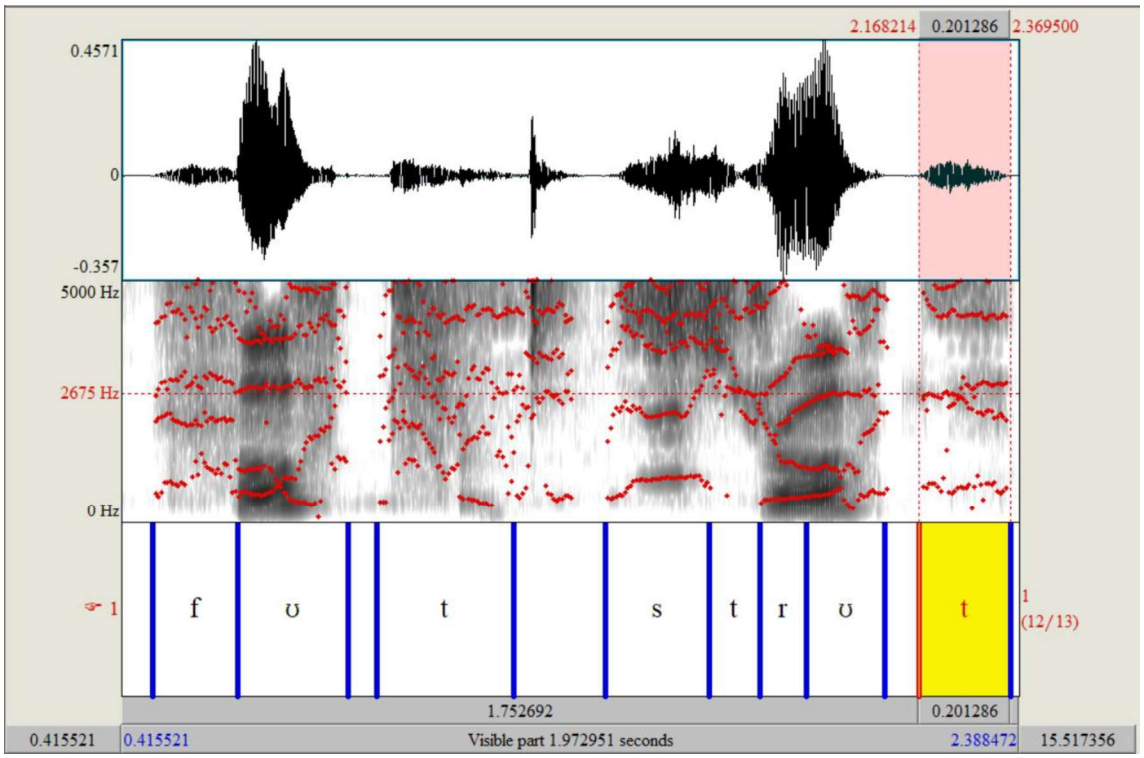

Figure 32: Waveform and spectrographic representation for the words “foot” and “strut” produced by speaker G.

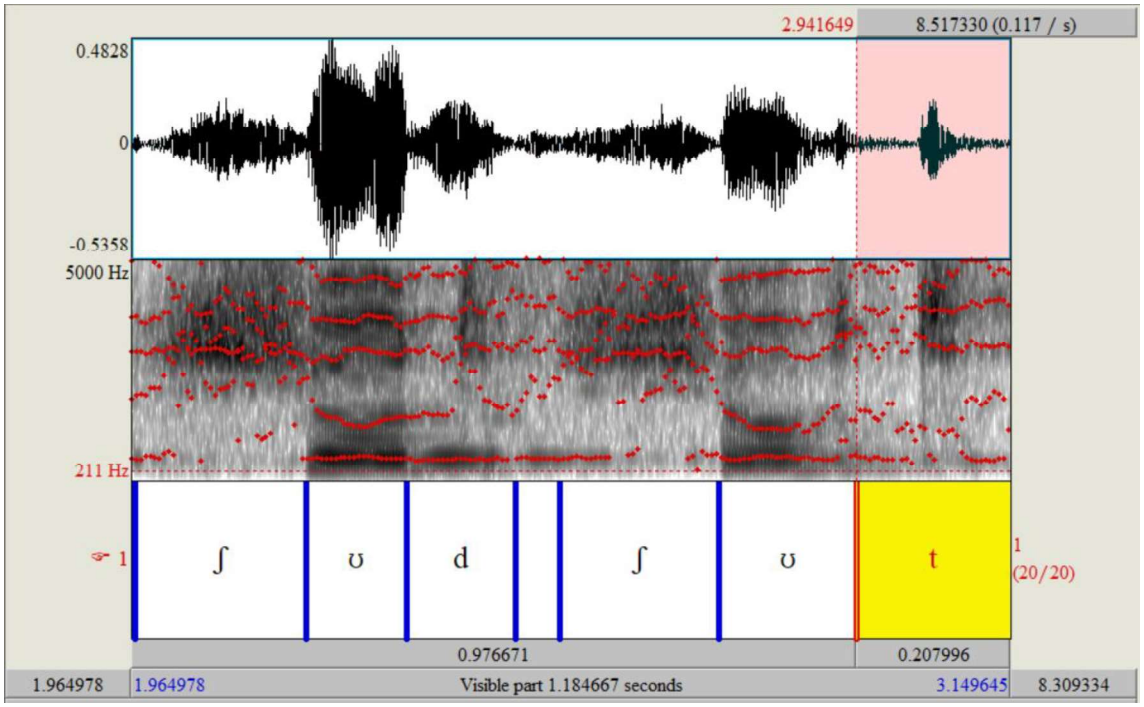

Figure 33: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker A.

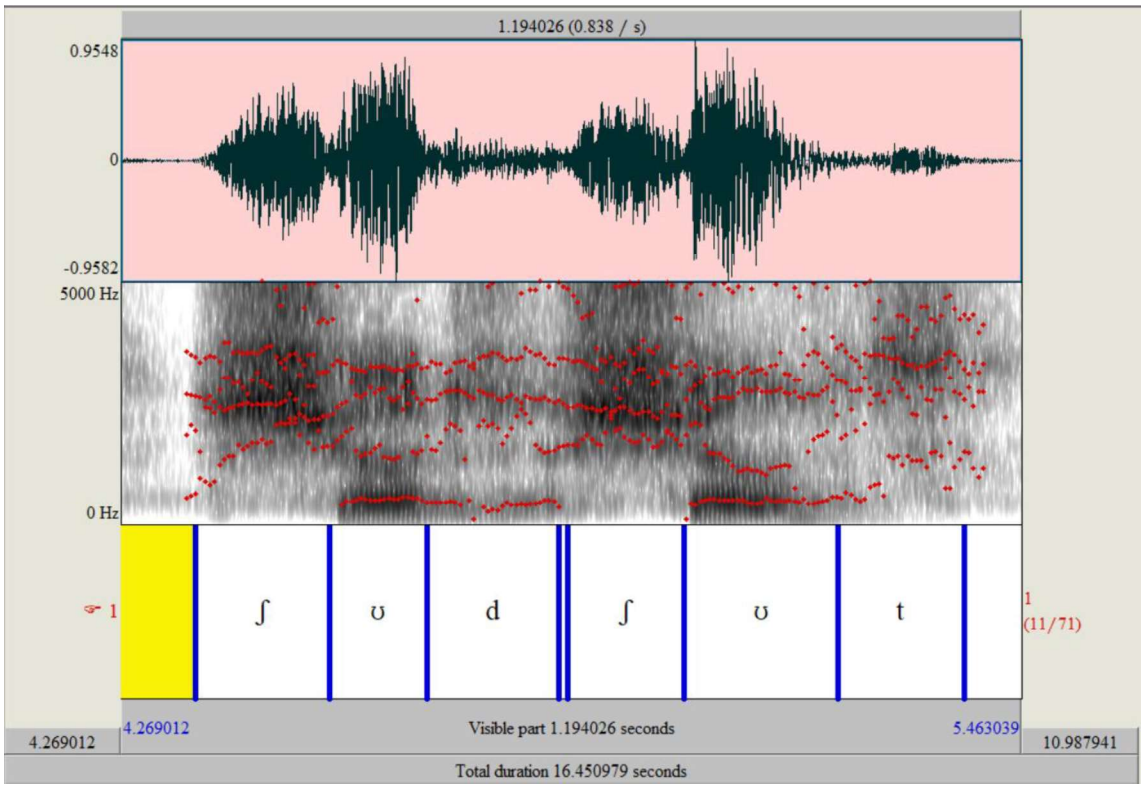

Figure 34: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker B.

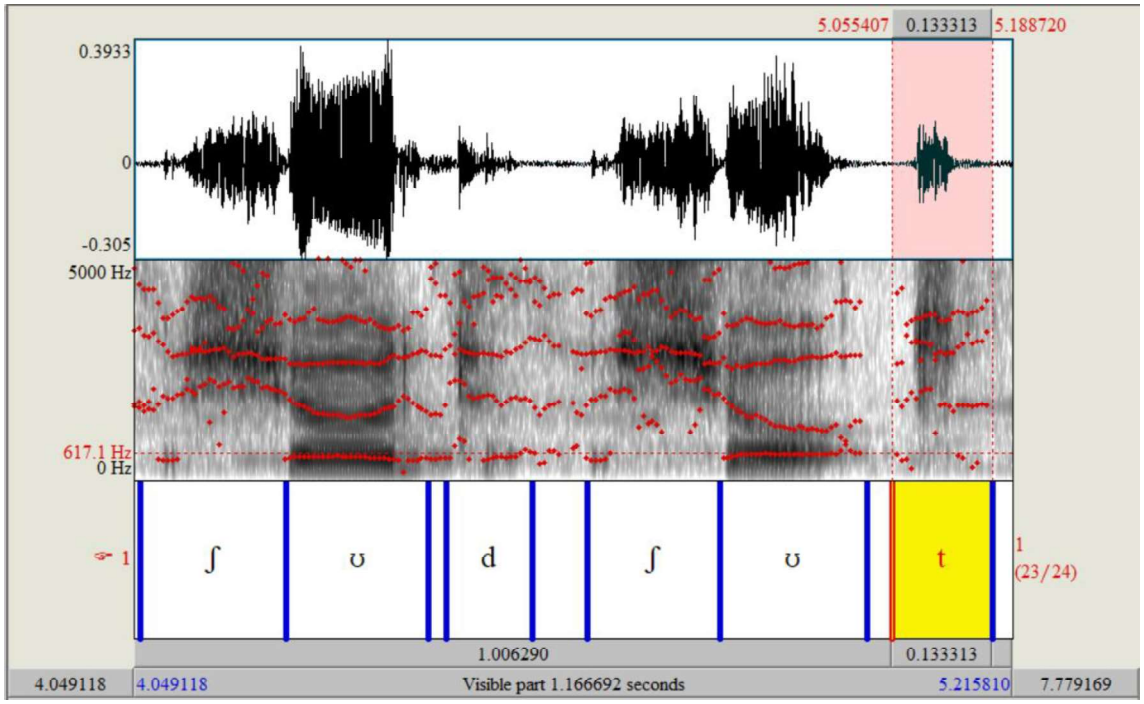

Figure 35: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker C.

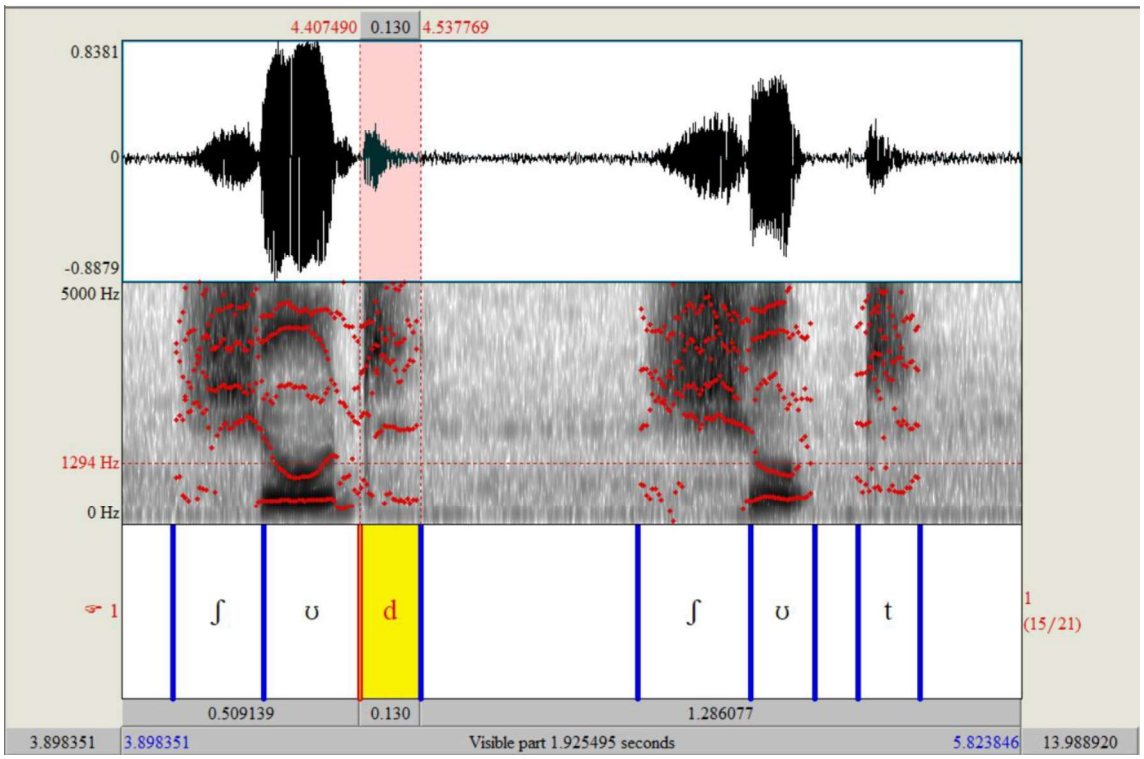

Figure 36: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker F.

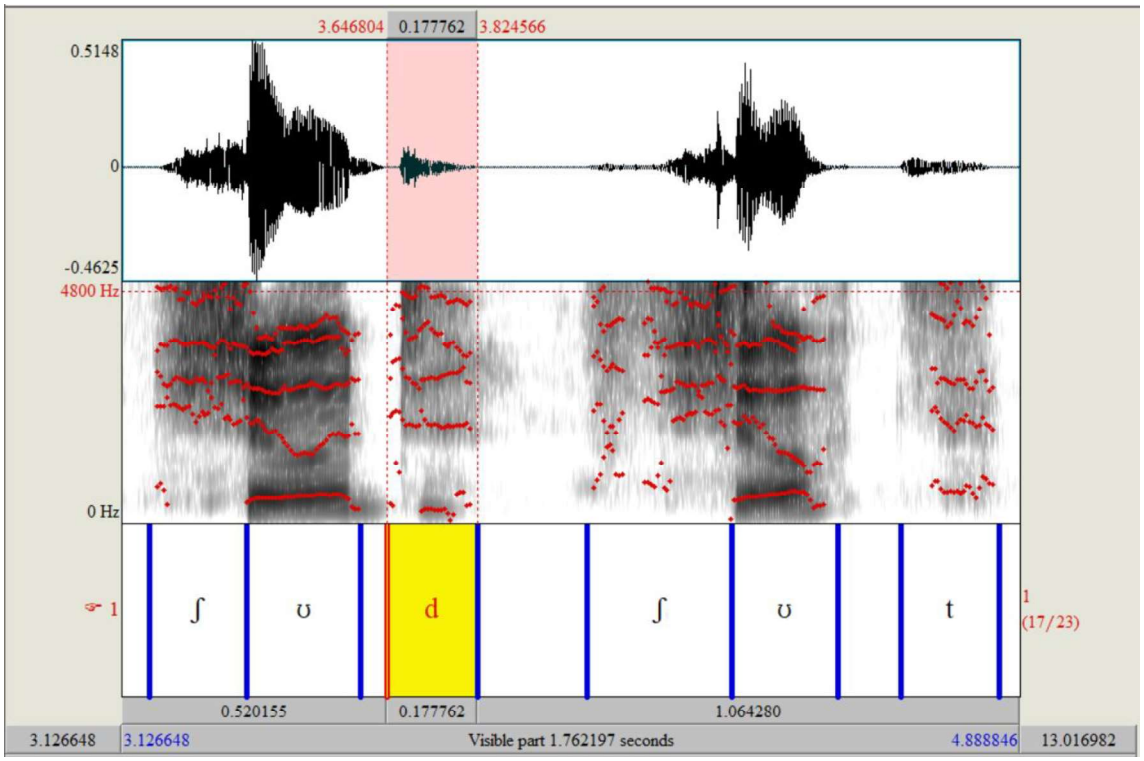

Figure 37: Waveform and spectrographic representation for the words “should” and “shut” produced by speaker G.

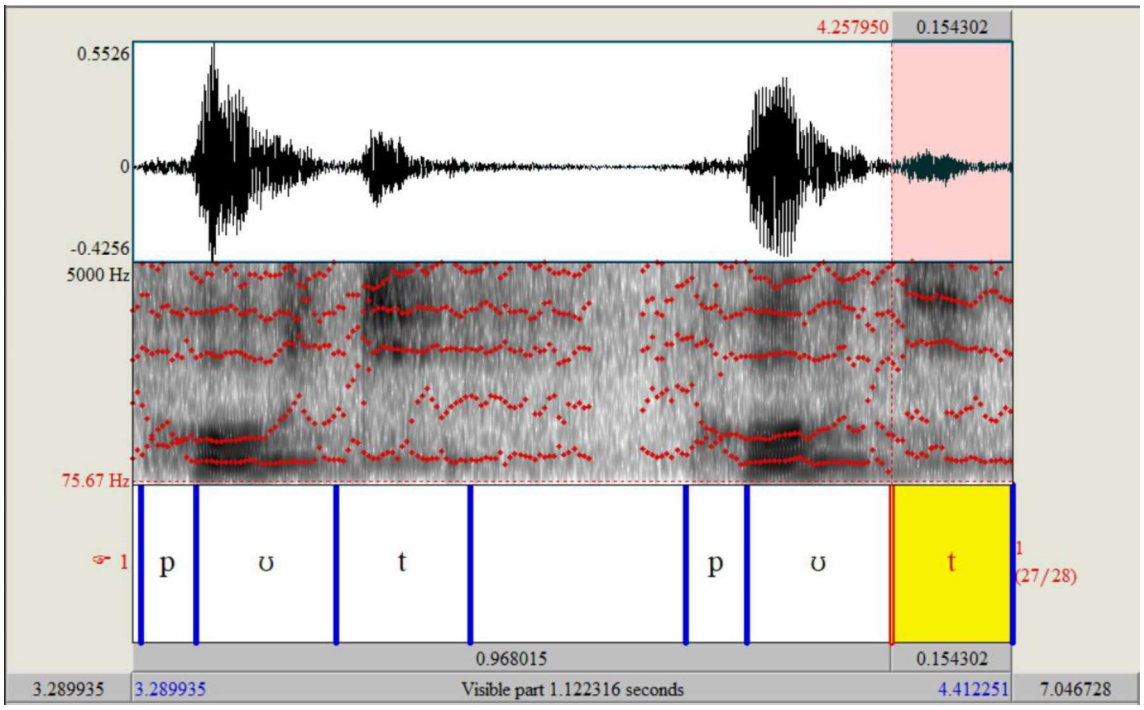

Figure 38: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker A.

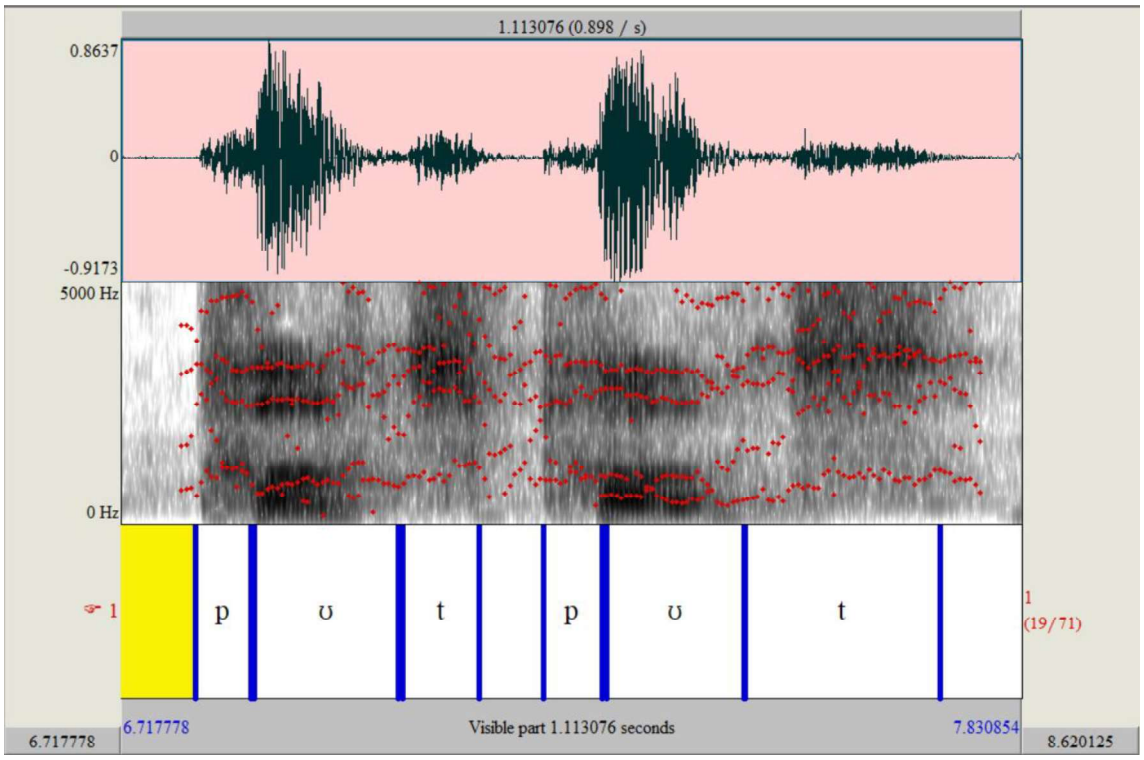

Figure 39: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker B.

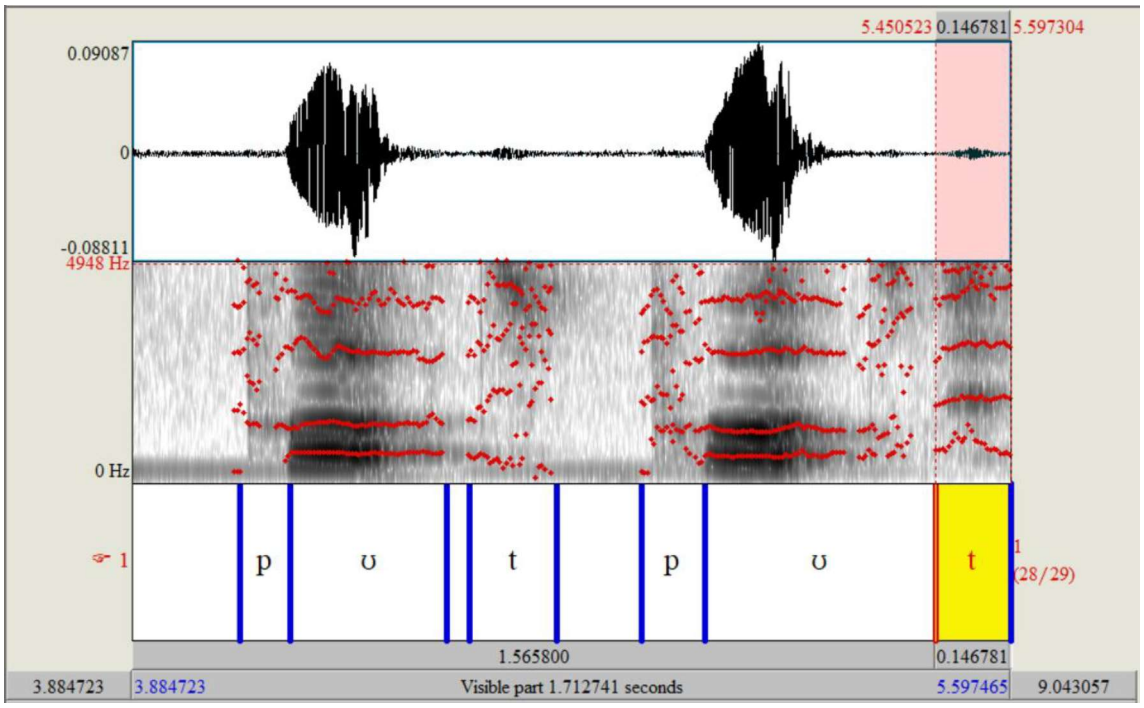

Figure 40: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker D.

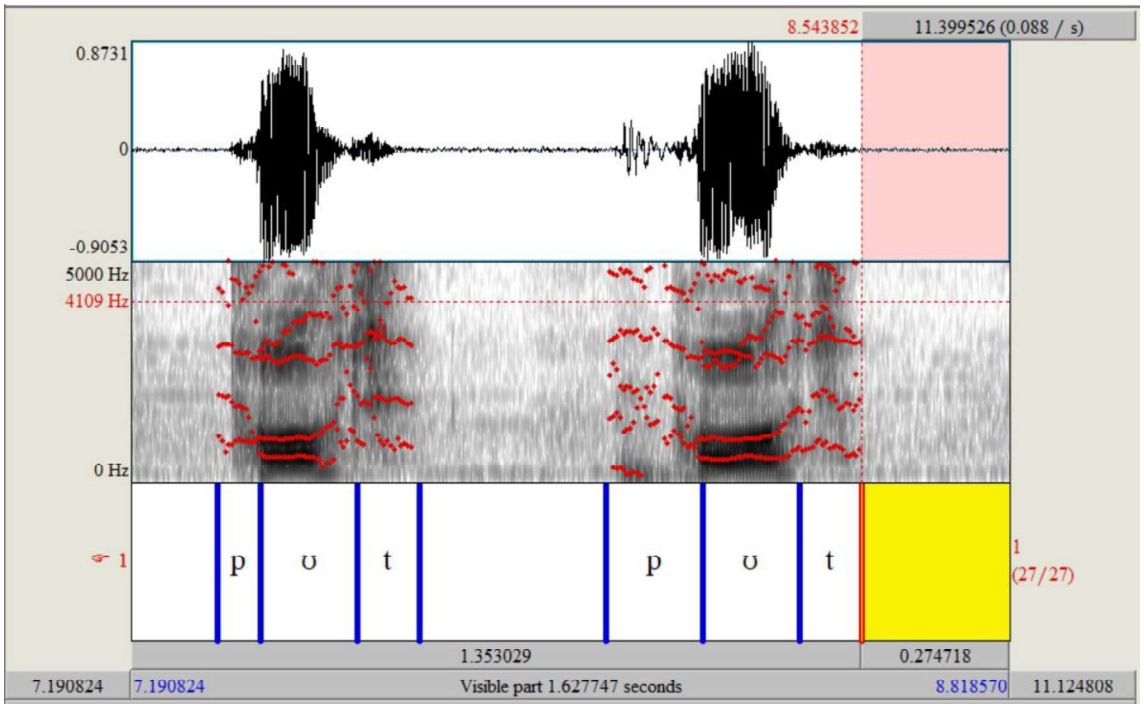

Figure 41: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker E.

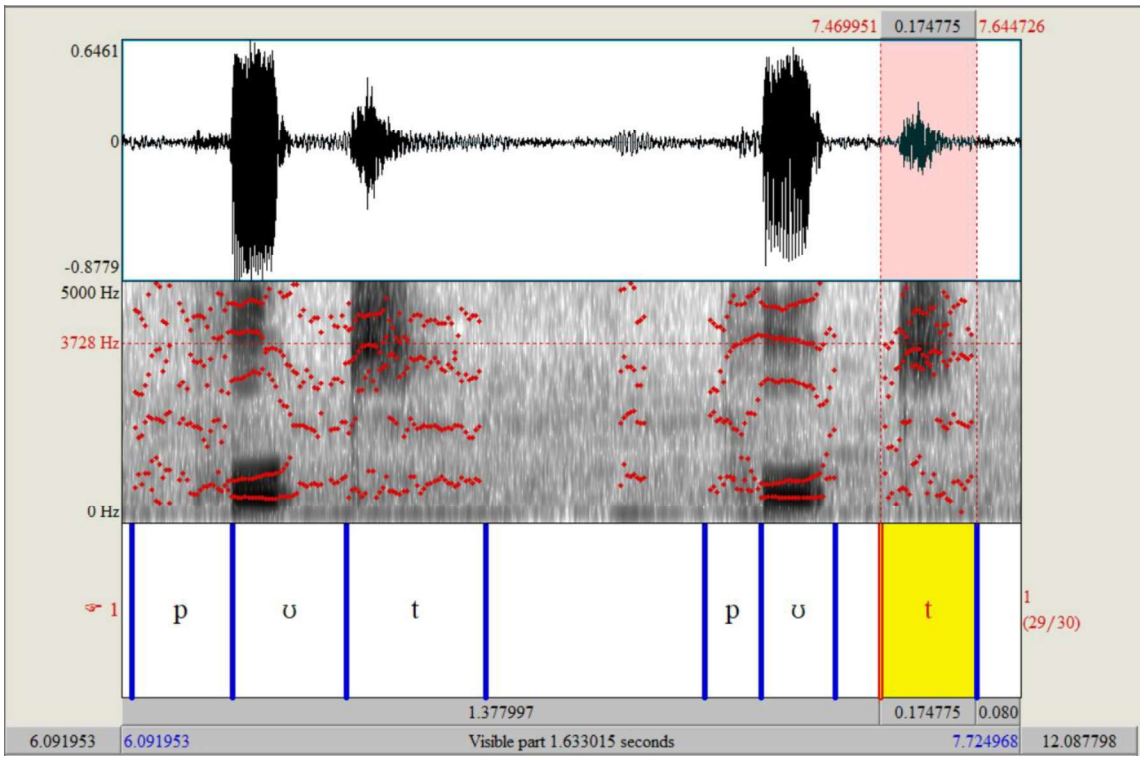

Figure 42: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker F.

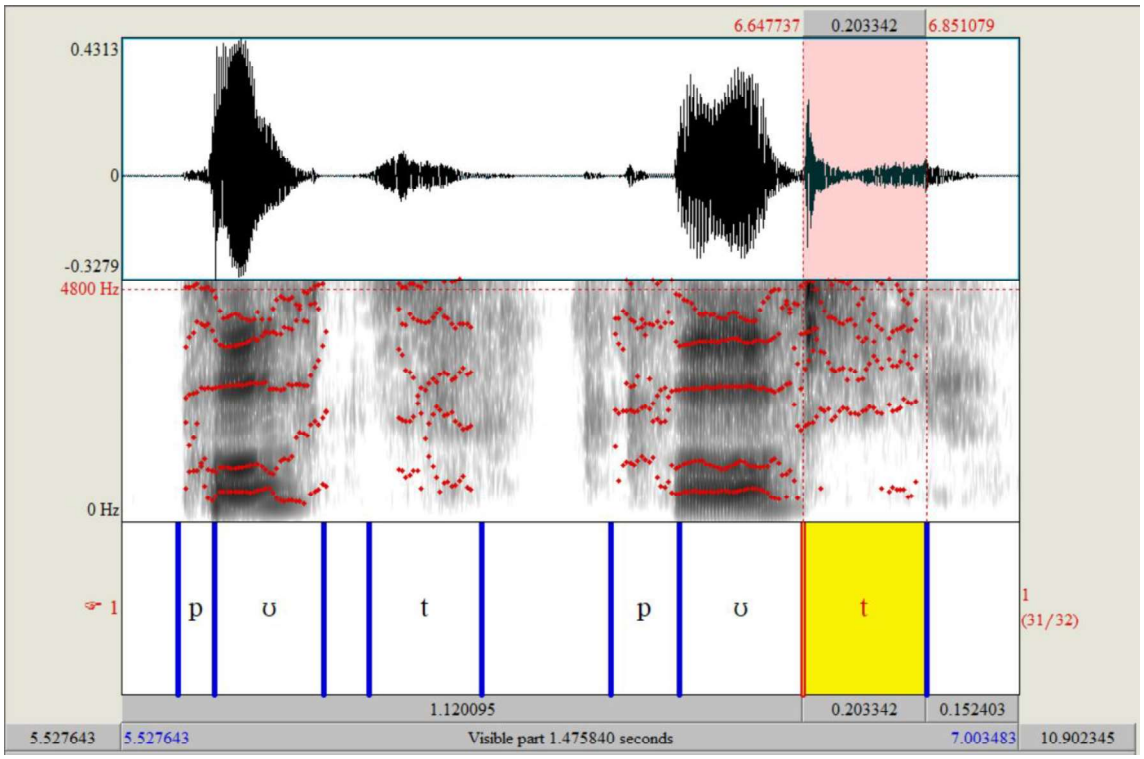

Figure 43: Waveform and spectrographic representation for the words “put” and “putt” produced by speaker G.

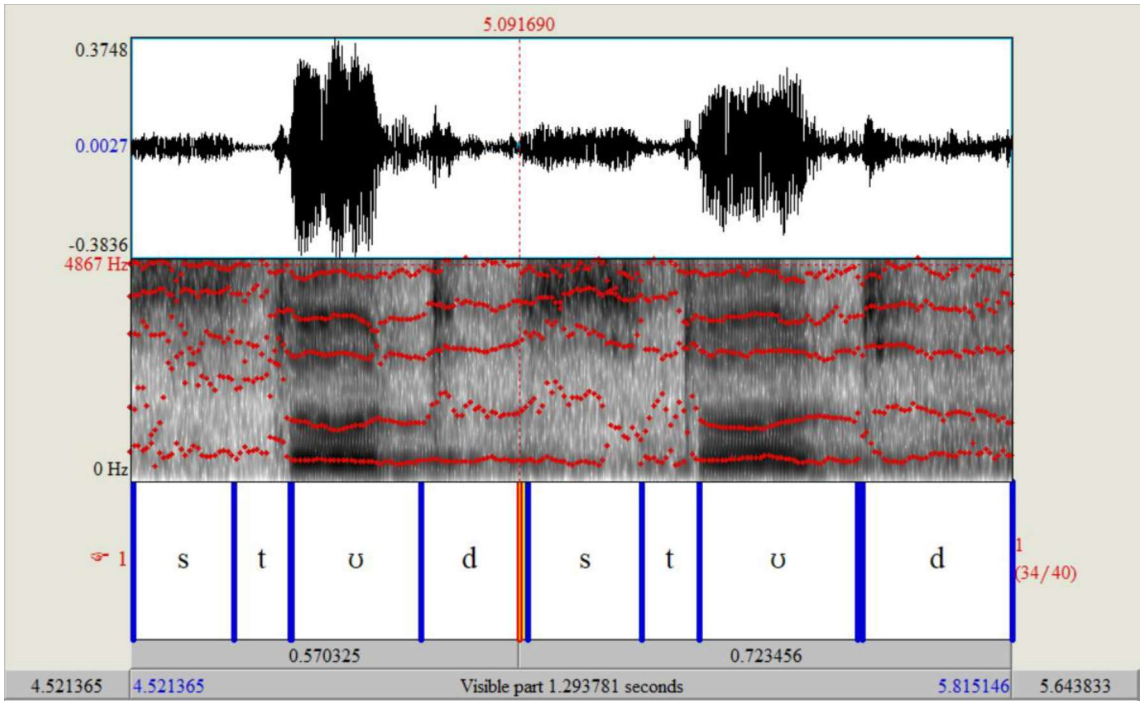

Figure 44: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker A.

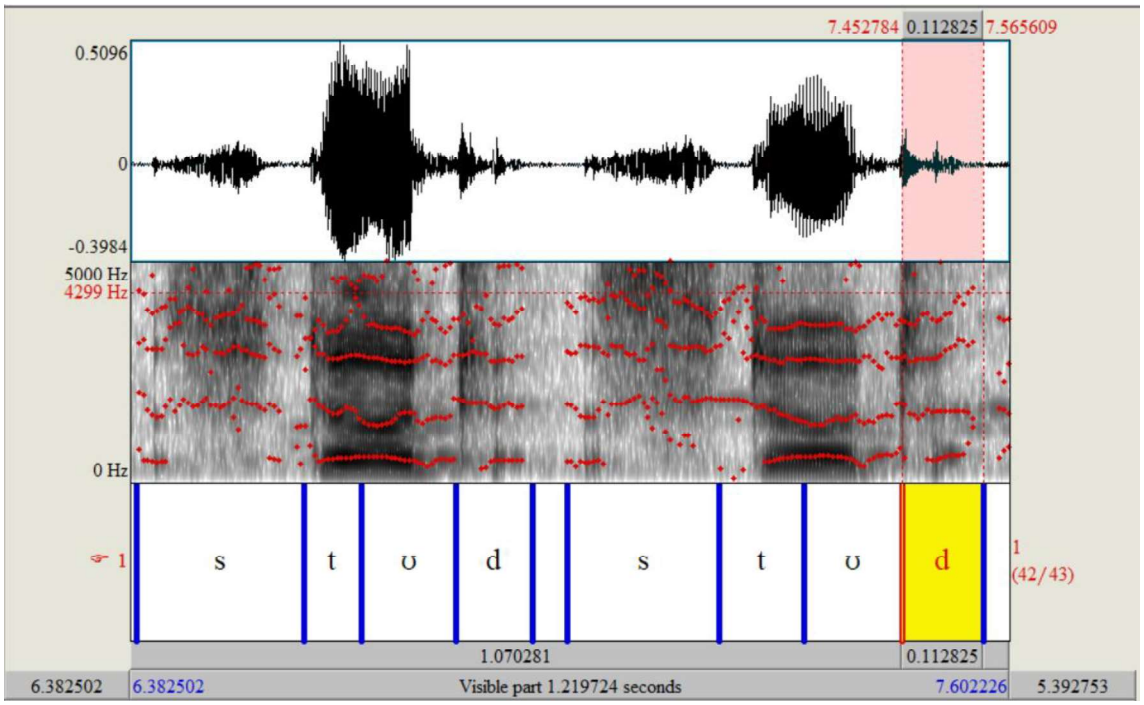

Figure 45: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker C.

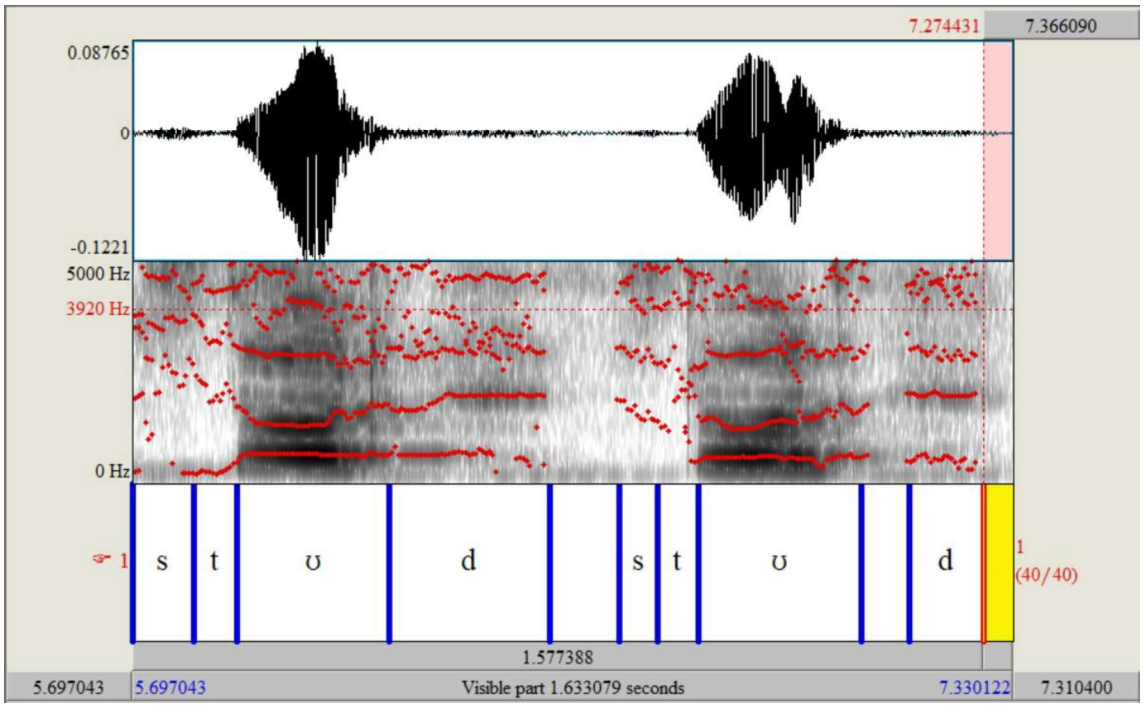

Figure 46: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker D.

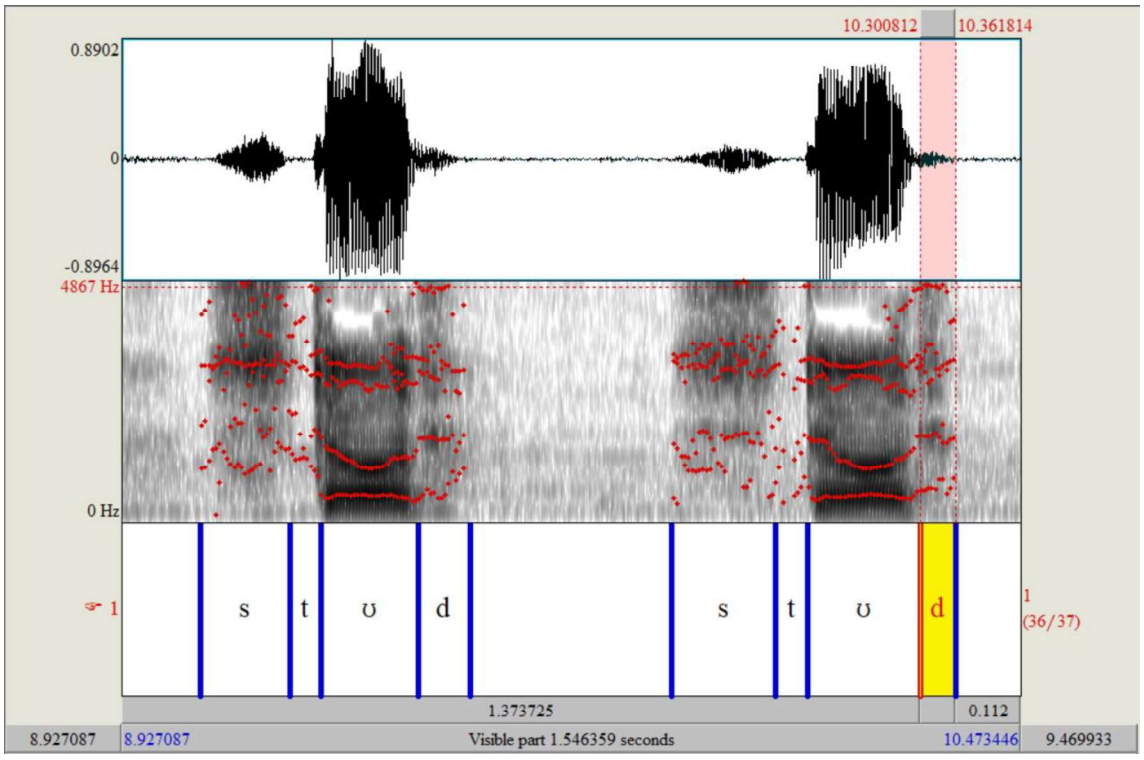

Figure 47: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker E.

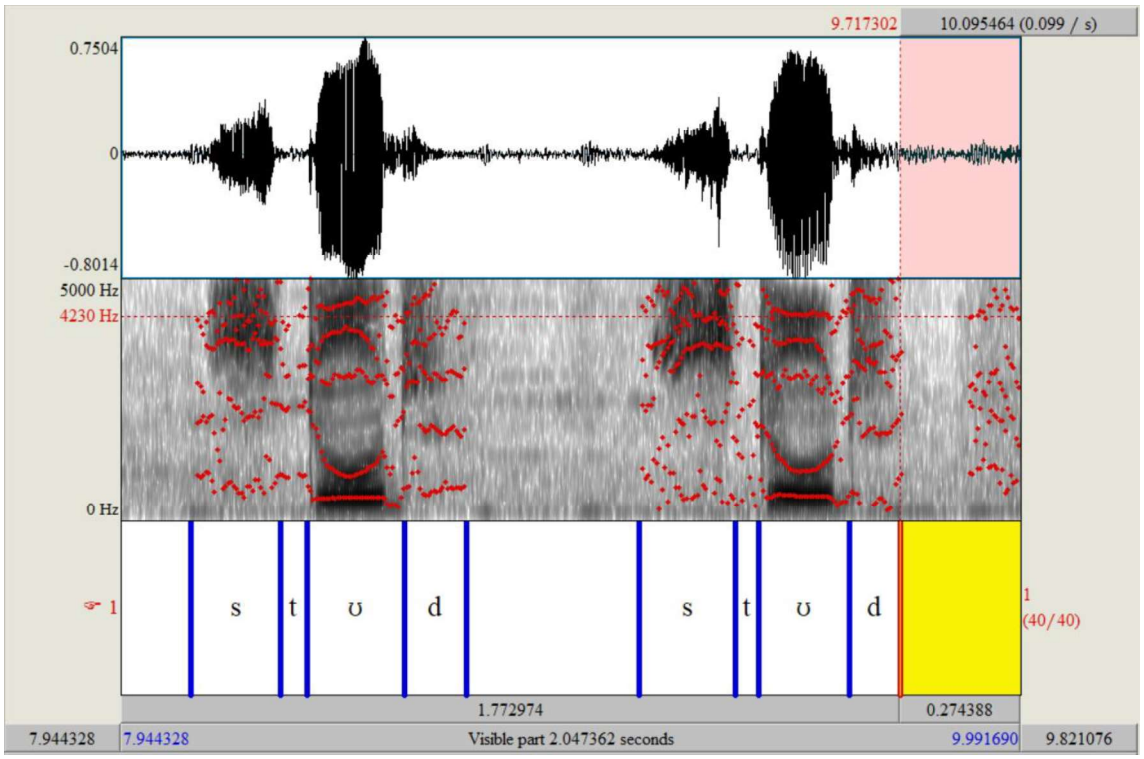

Figure 48: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker F.

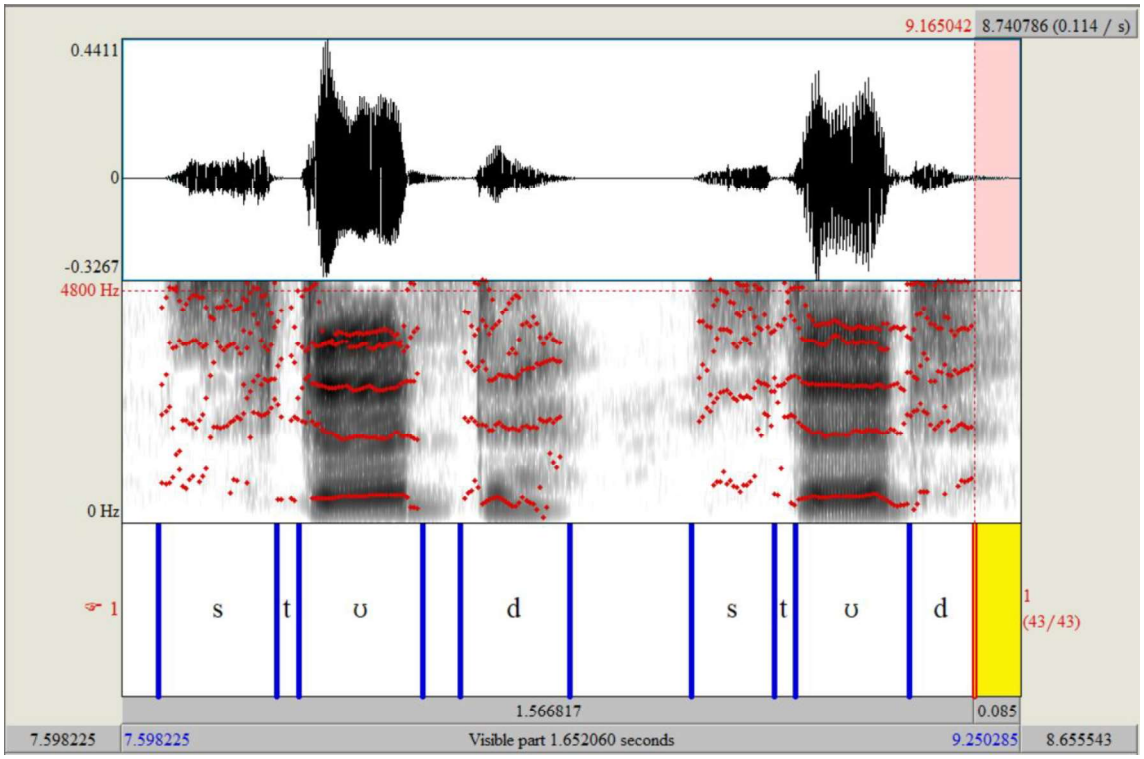

Figure 49: Waveform and spectrographic representation for the words “stood” and “stud” produced by speaker G.

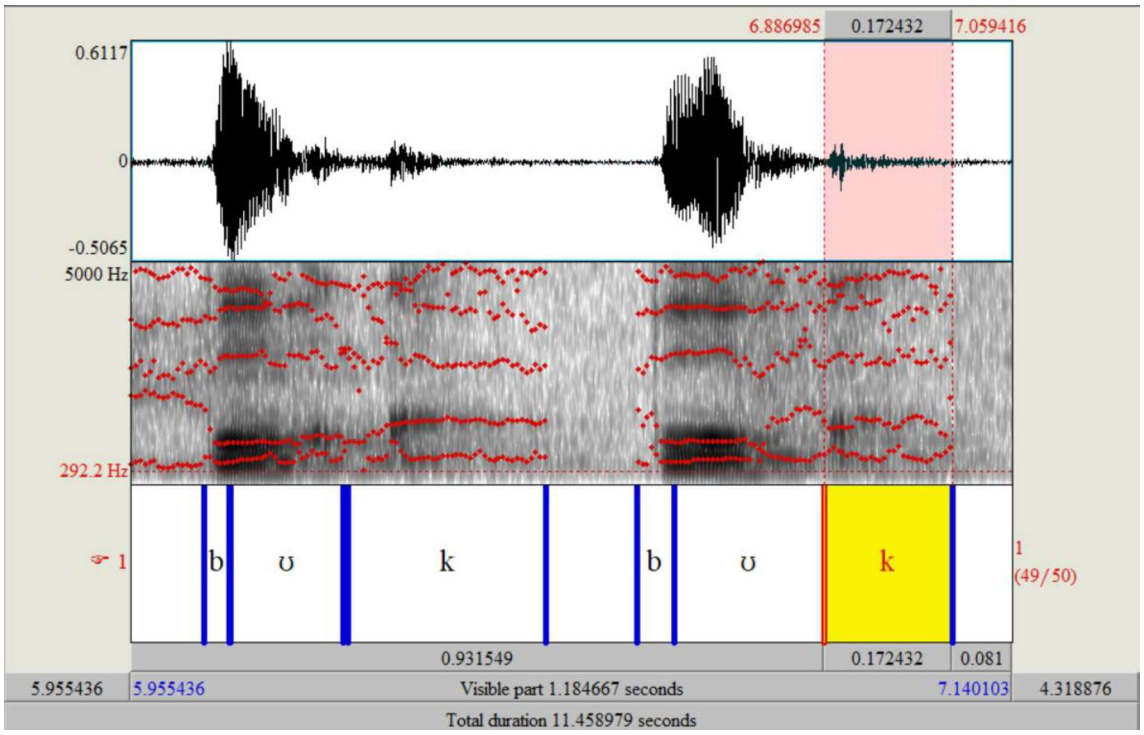

Figure 50: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker A.

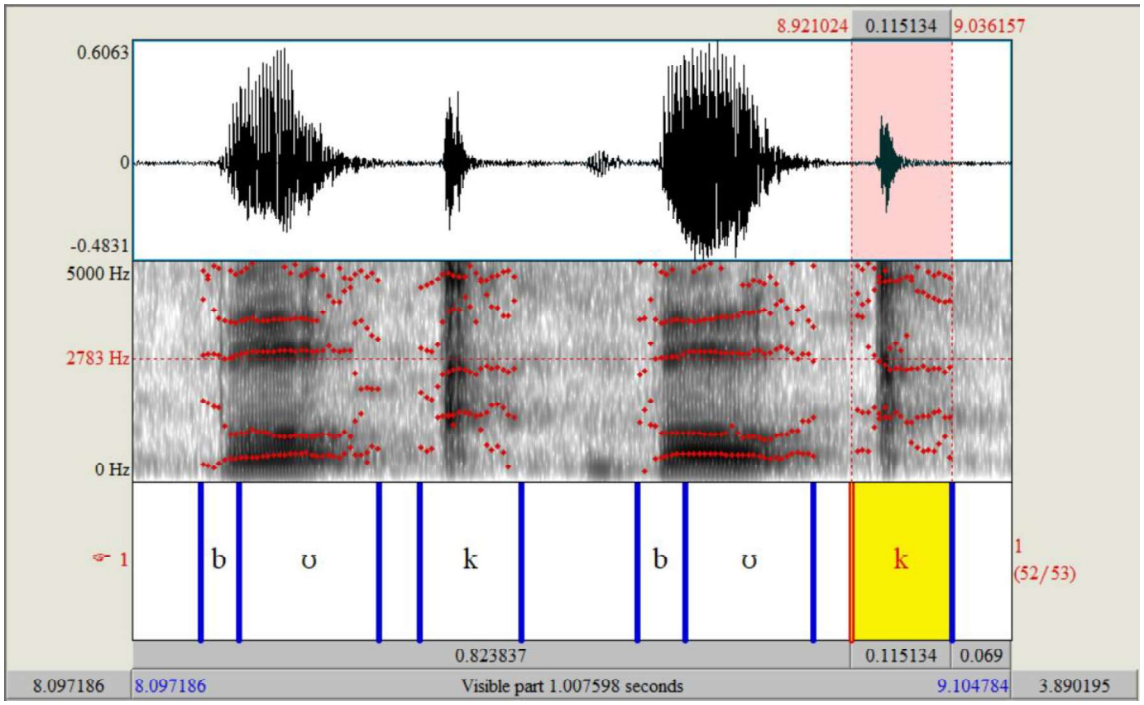

Figure 51: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker C.

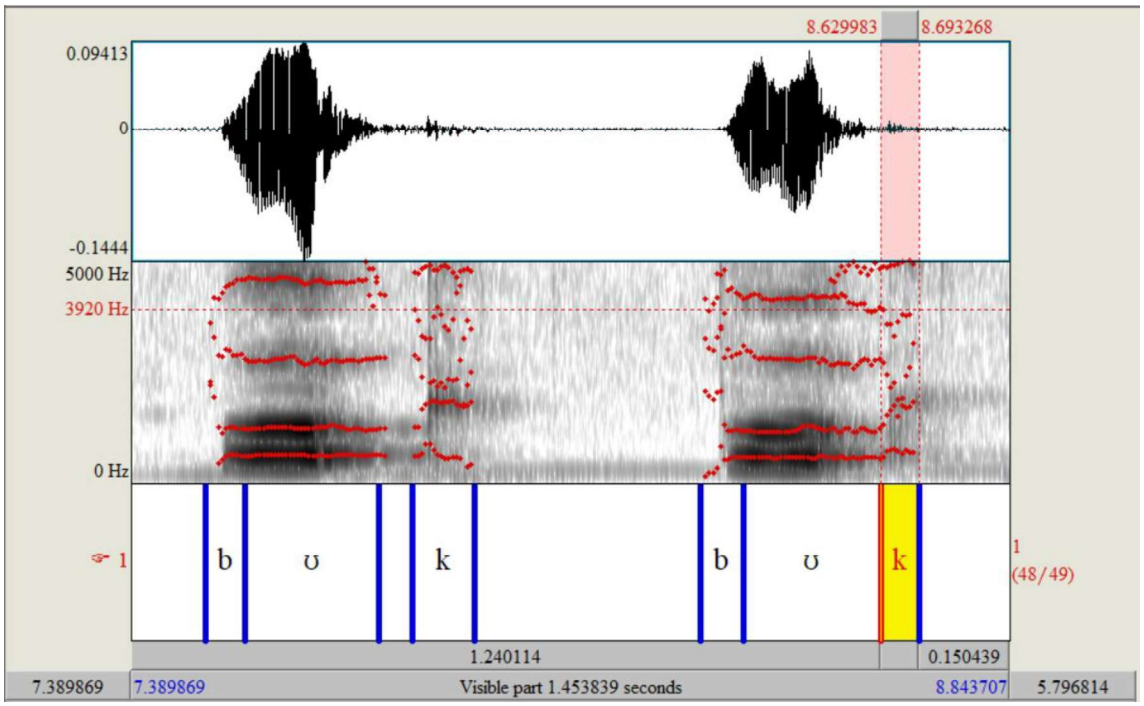

Figure 52: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker D.

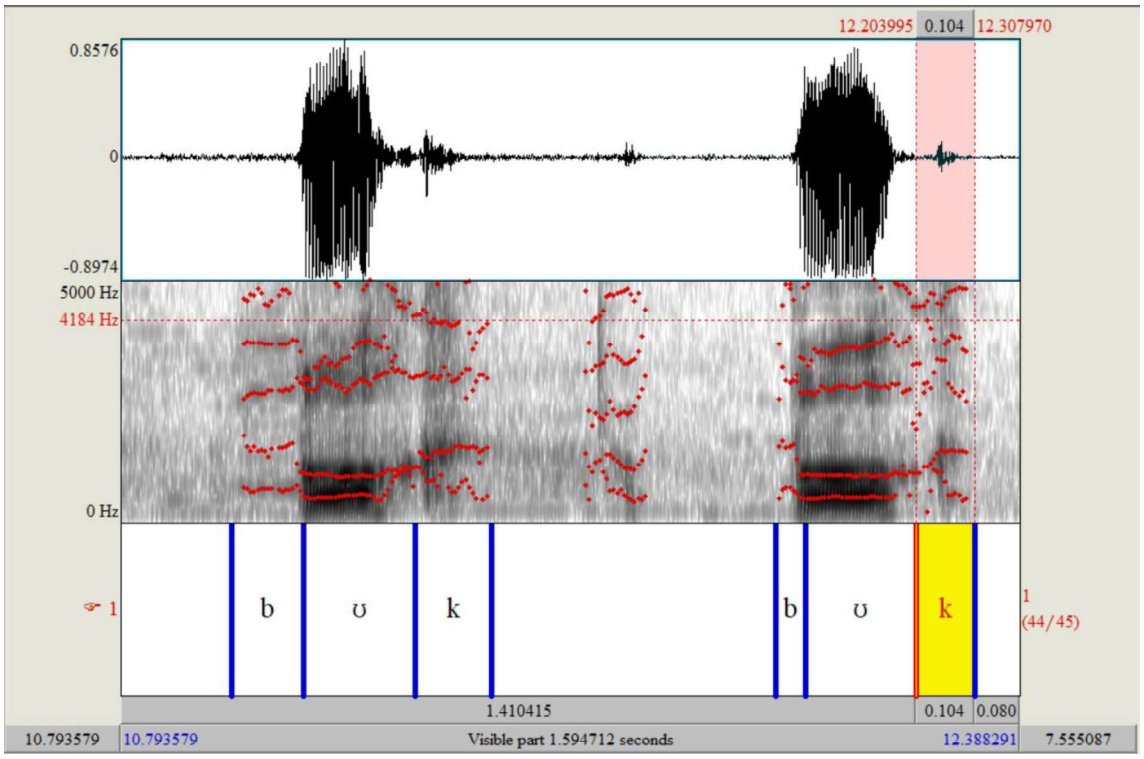

Figure 53: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker E.

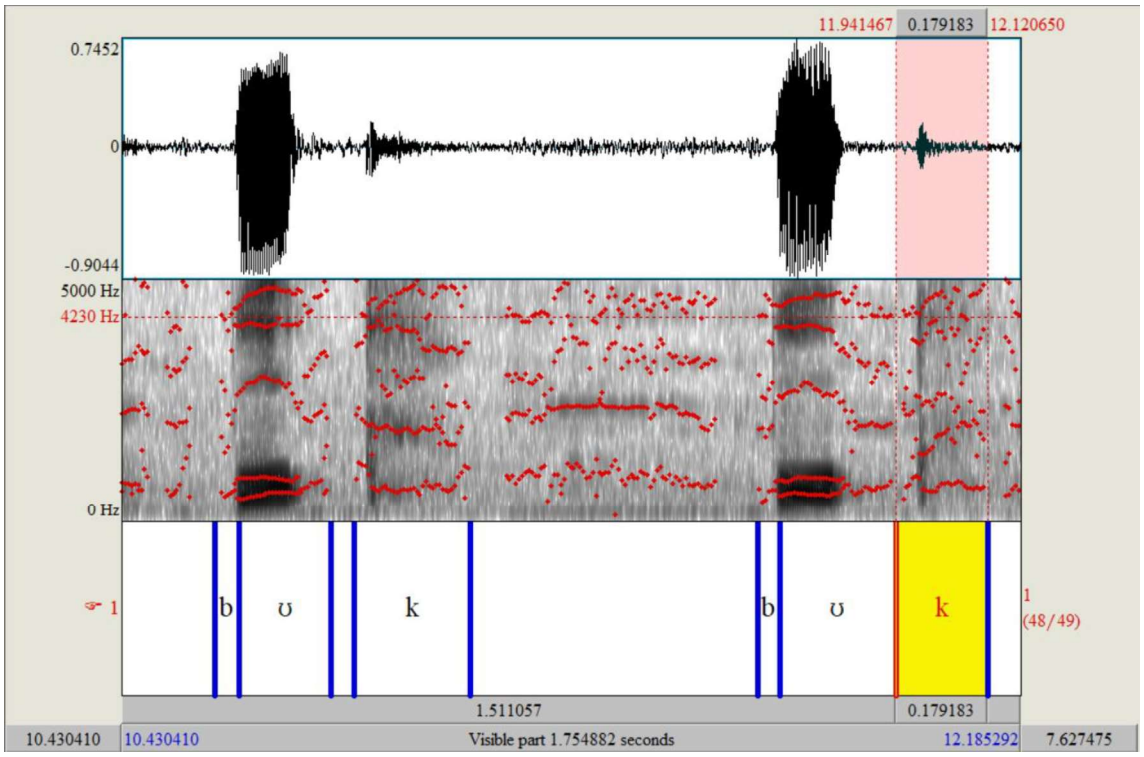

Figure 54: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker F.

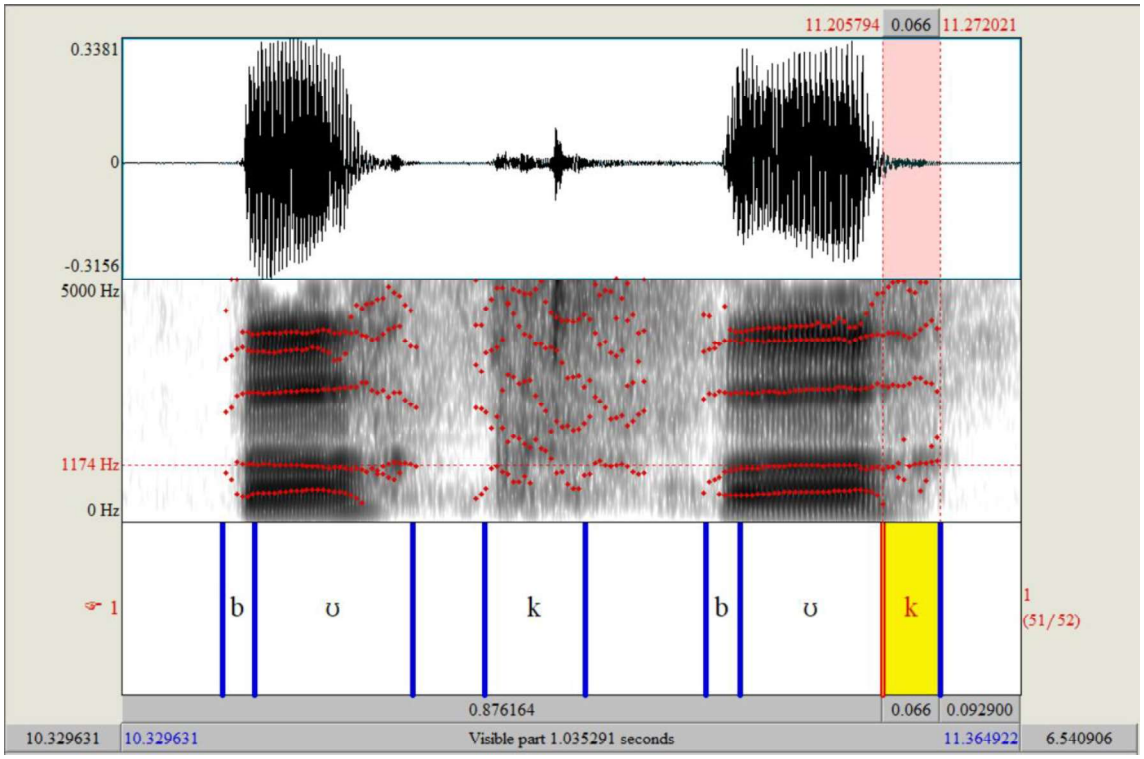

Figure 55: Waveform and spectrographic representation for the words “book” and “buck” produced by speaker G.

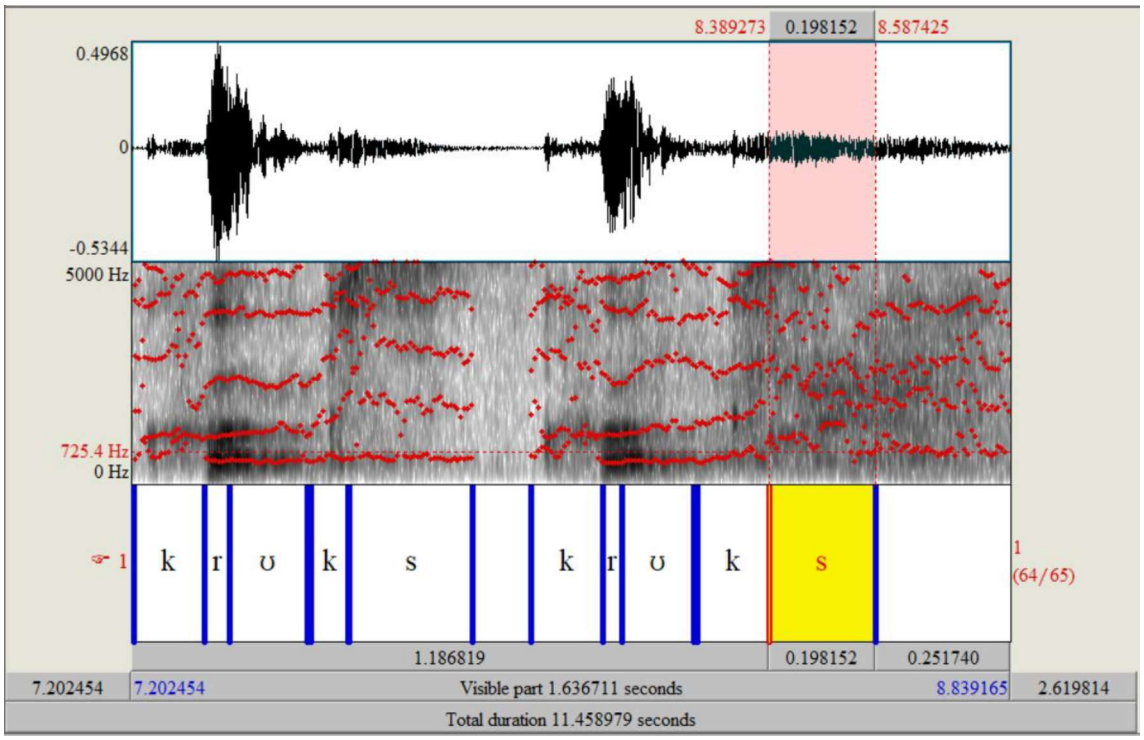

Figure 56: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker A.

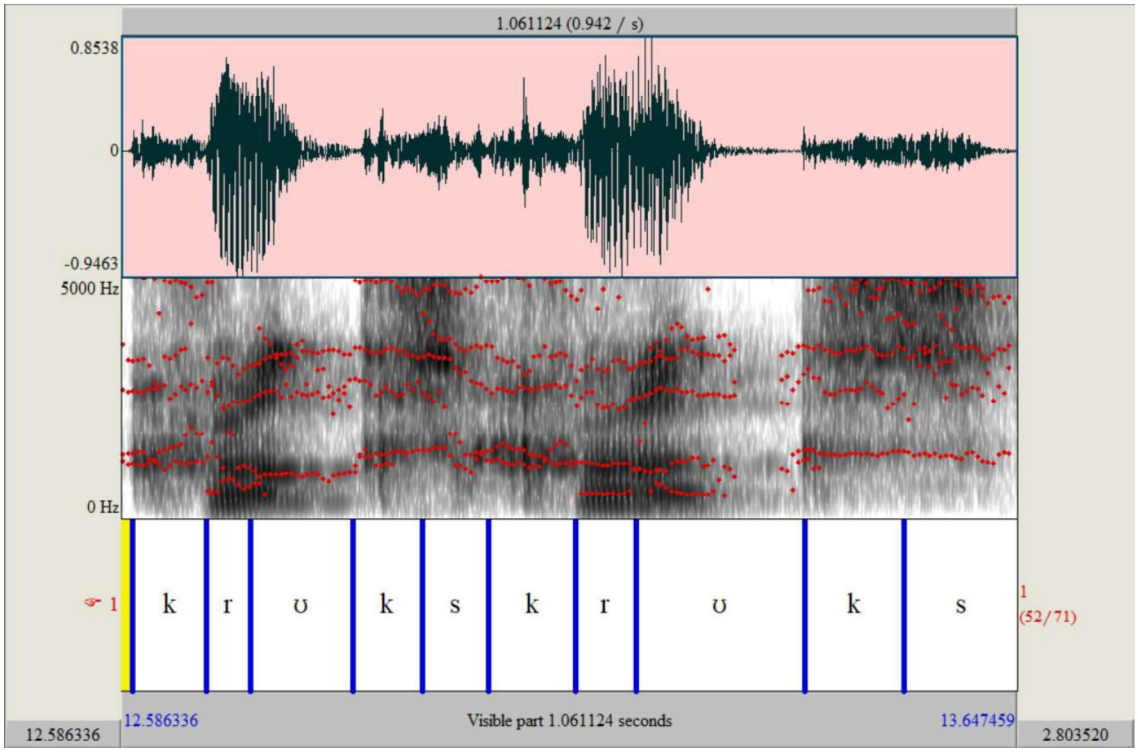

Figure 57: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker B.

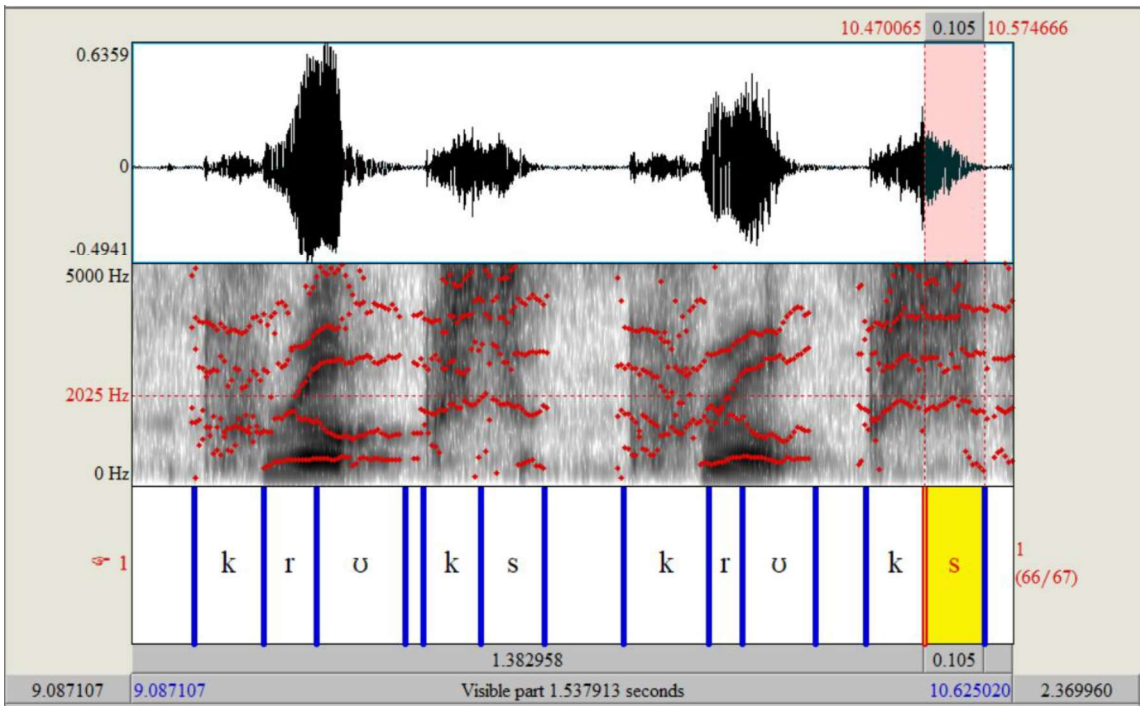

Figure 58: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker C.

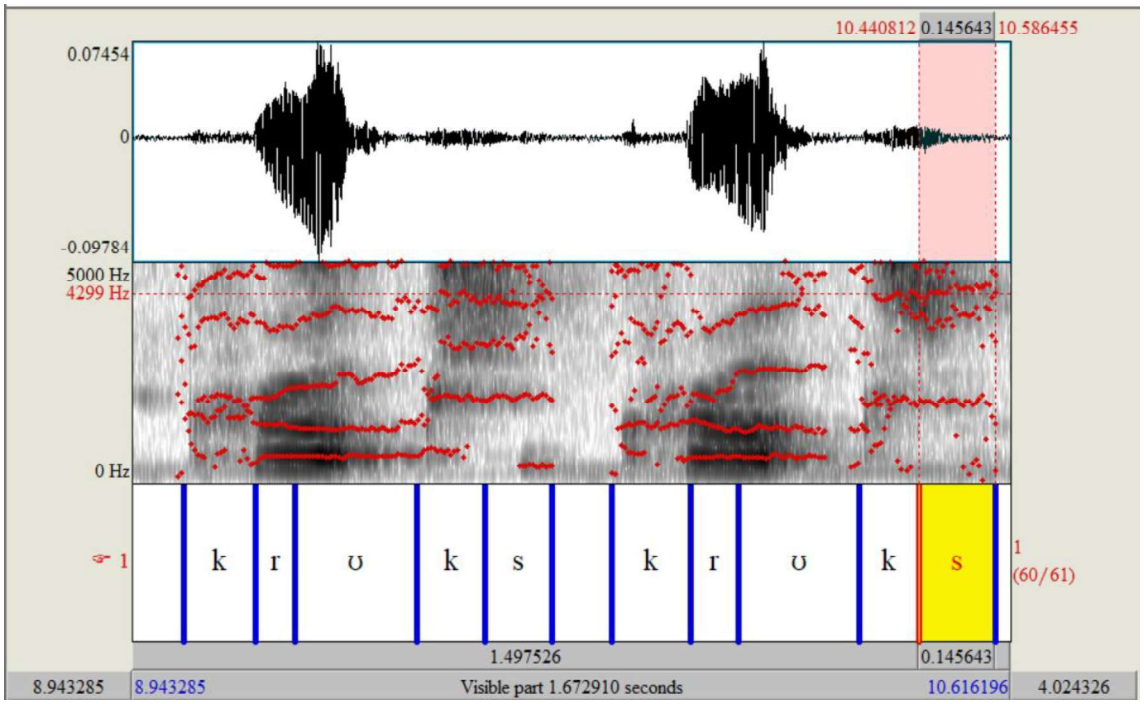

Figure 60: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker D.

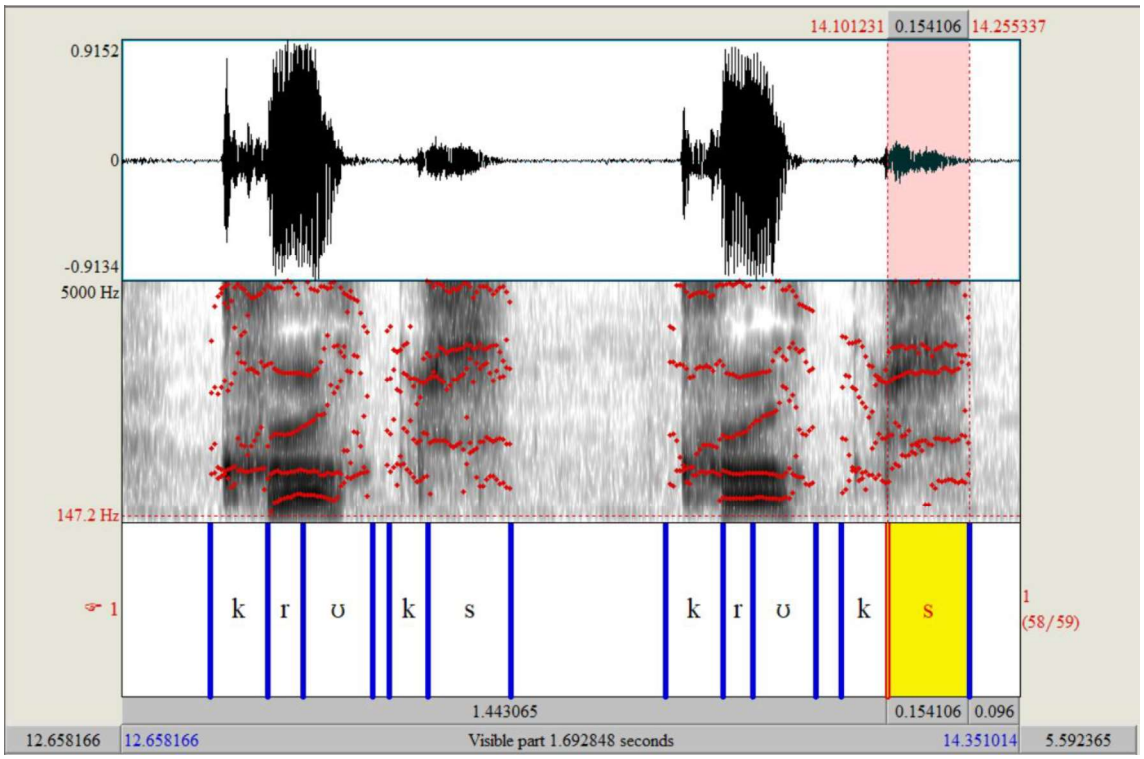

Figure 61: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker E.

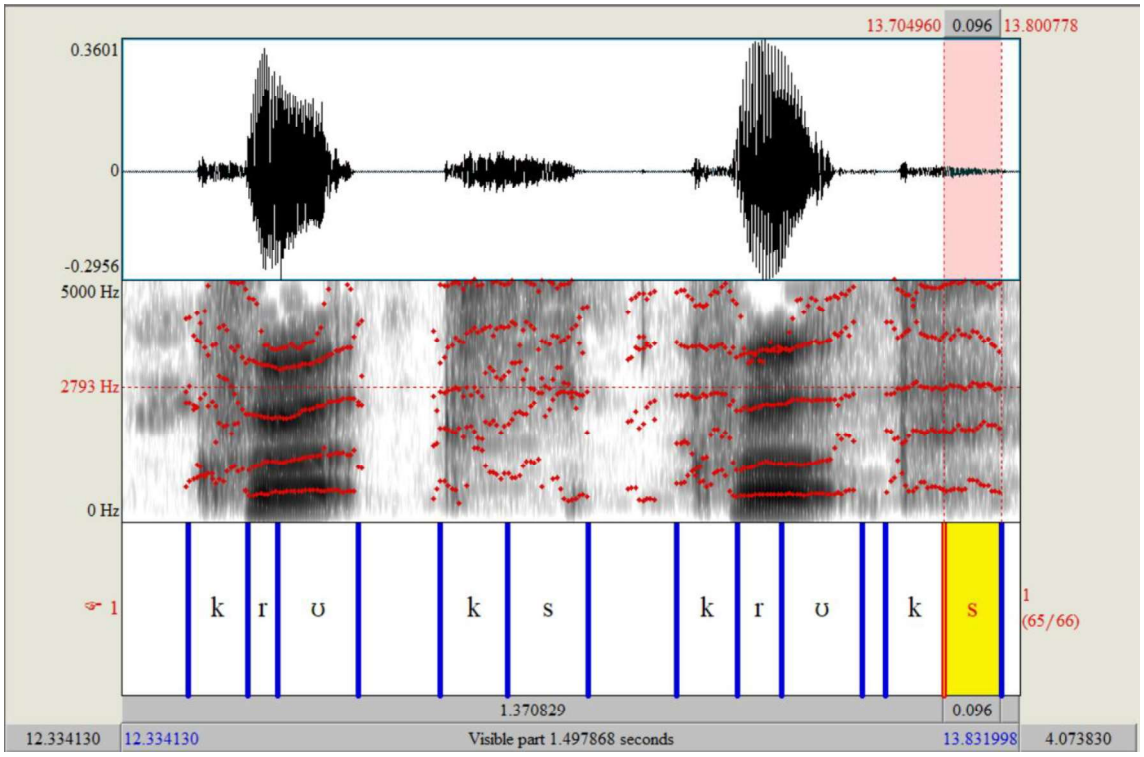

Figure 62: Waveform and spectrographic representation for the words “crooks” and “crux” produced by speaker G.

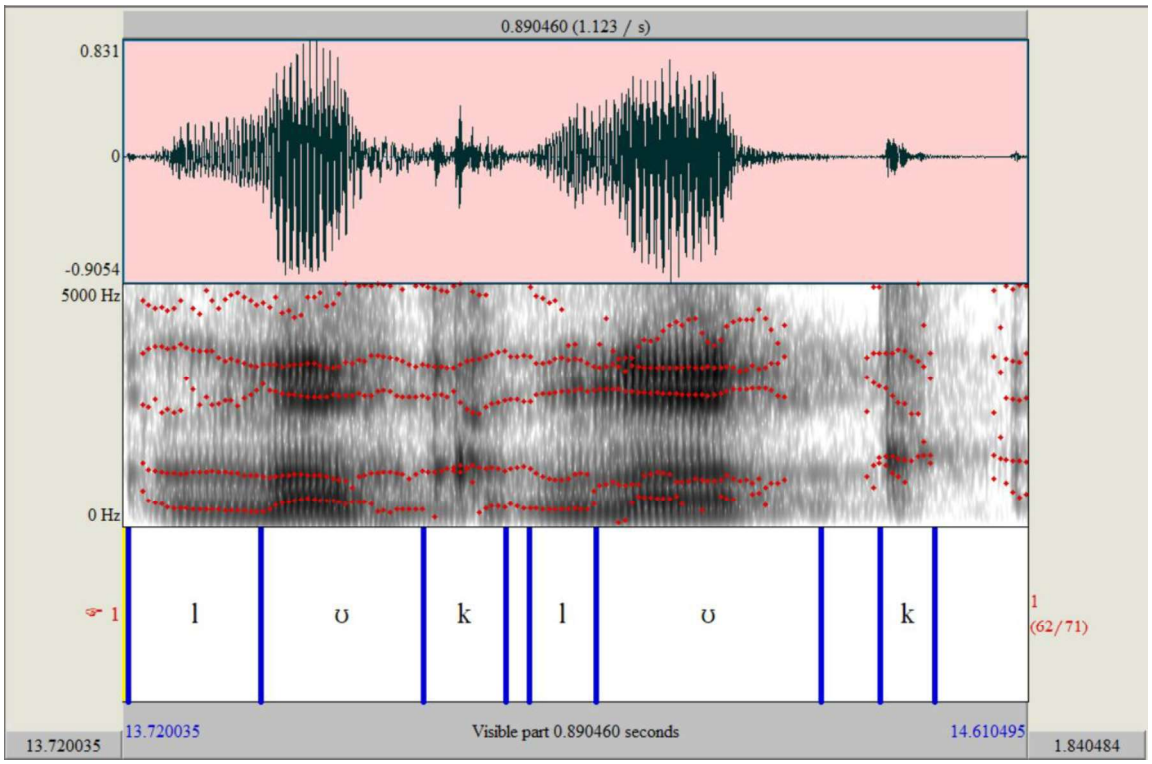

Figure 63: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker B.

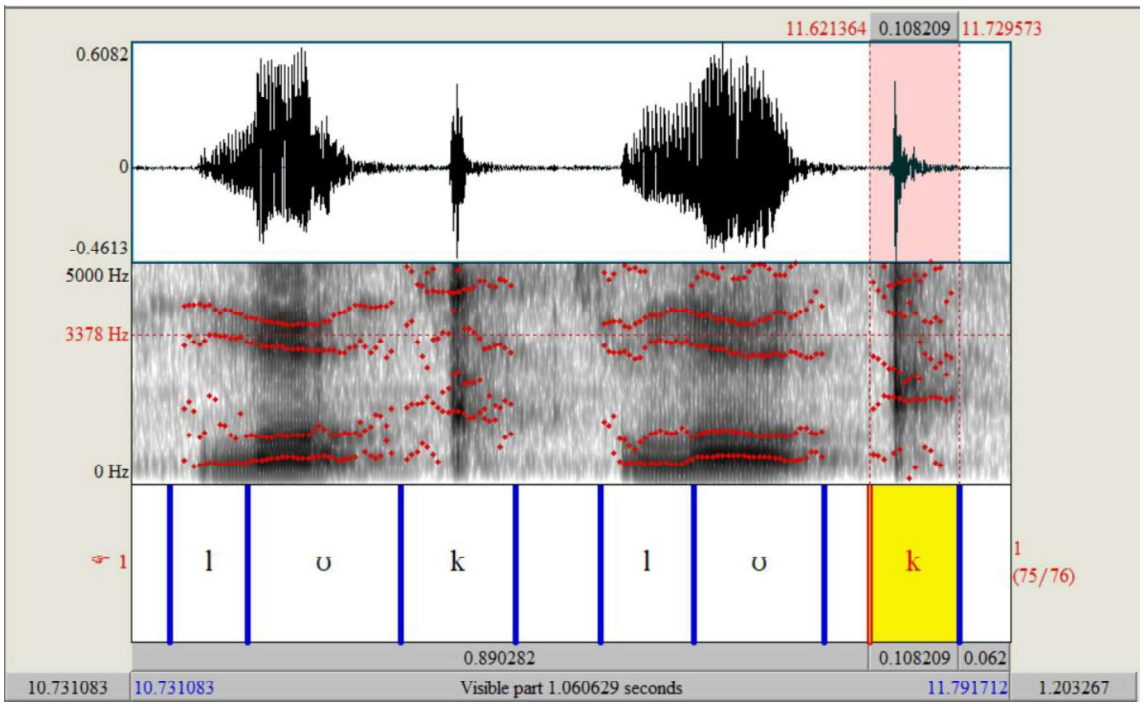

Figure 64: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker C.

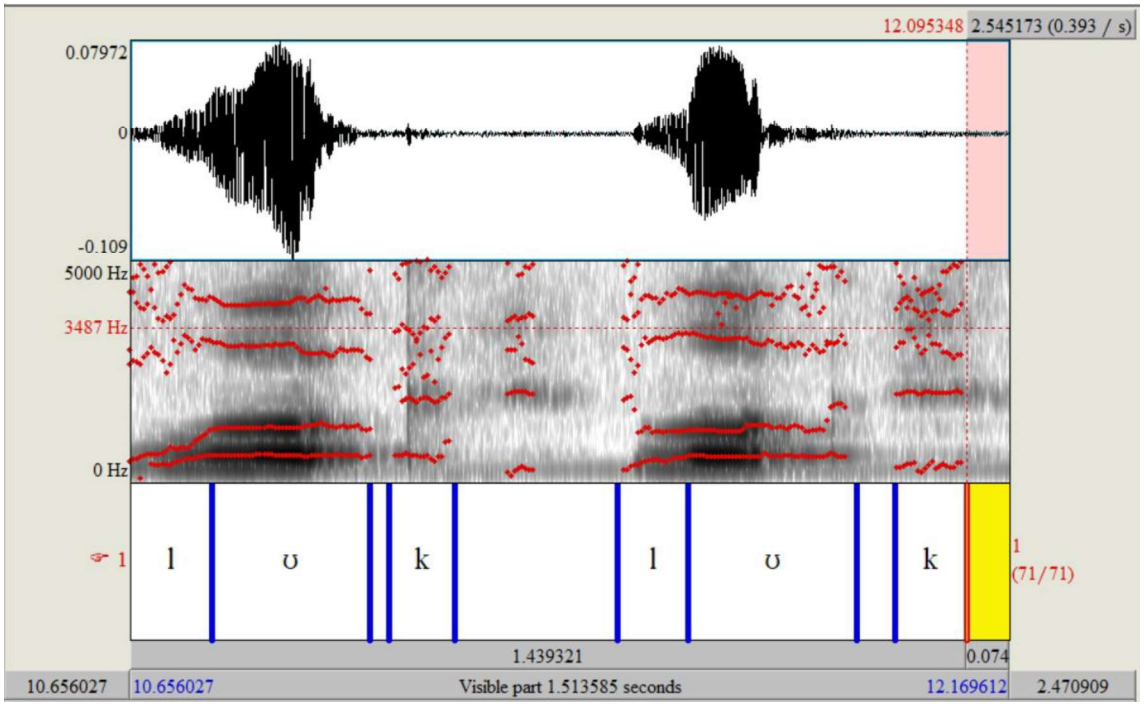

Figure 65: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker D.

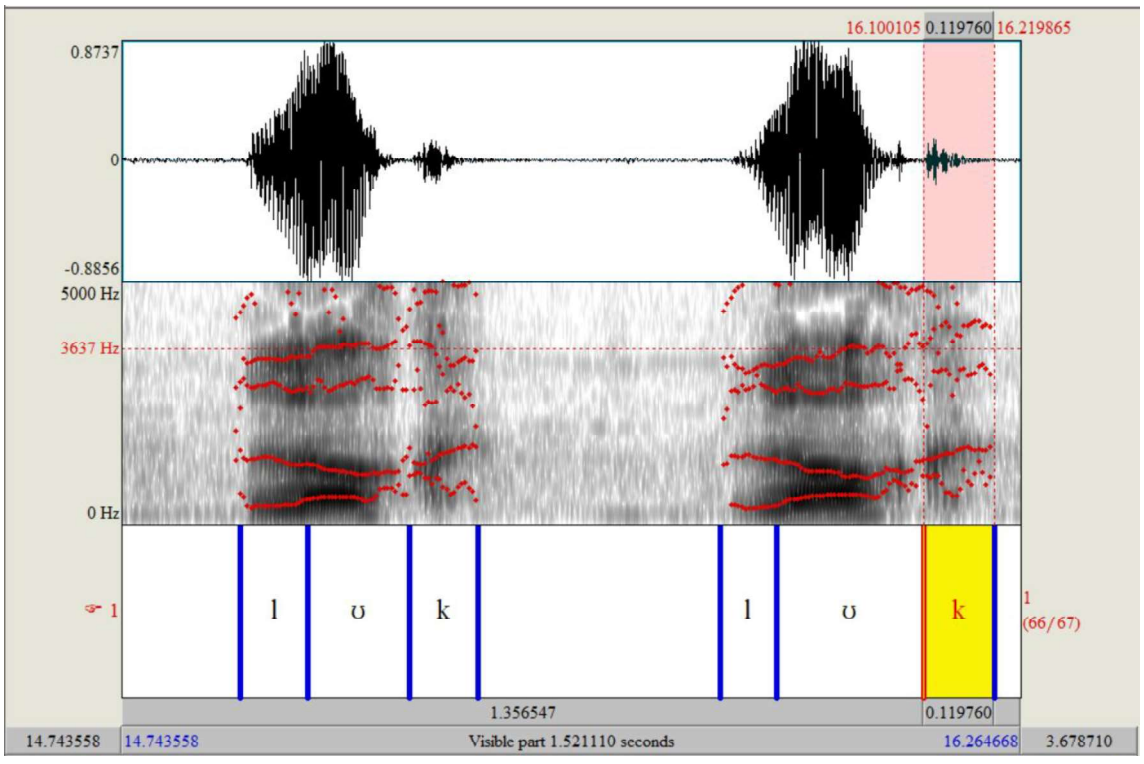

Figure 66: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker E.

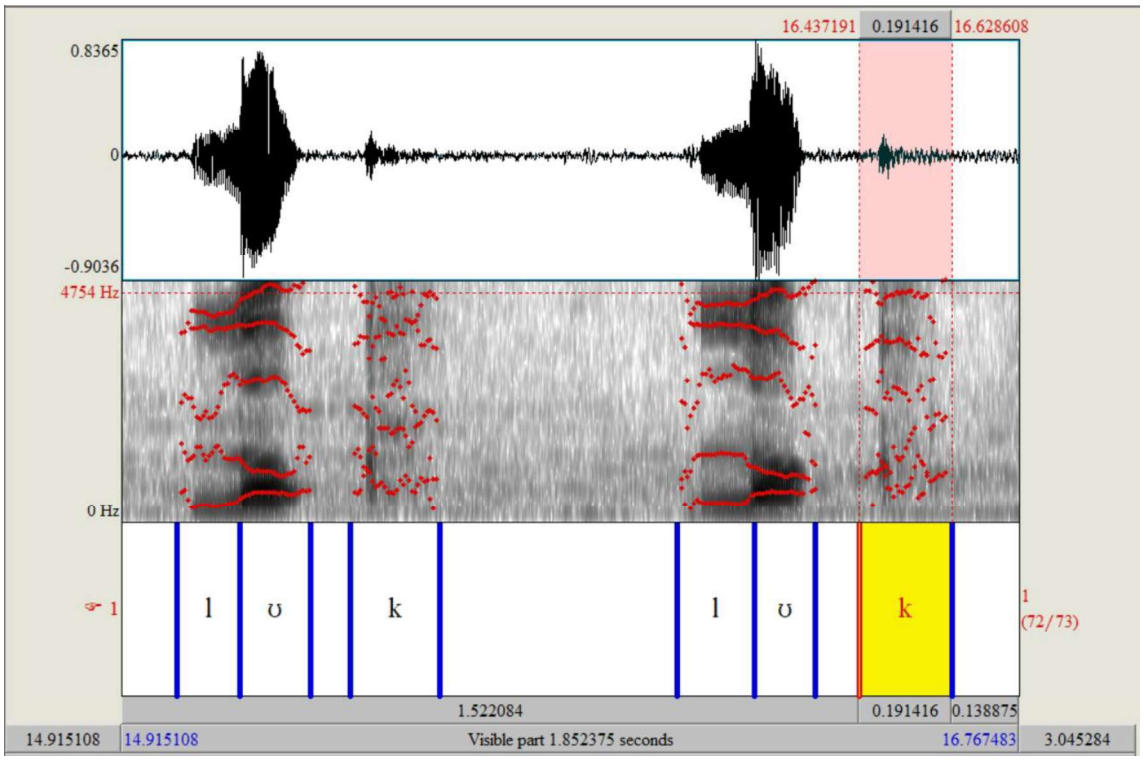

Figure 67: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker F.

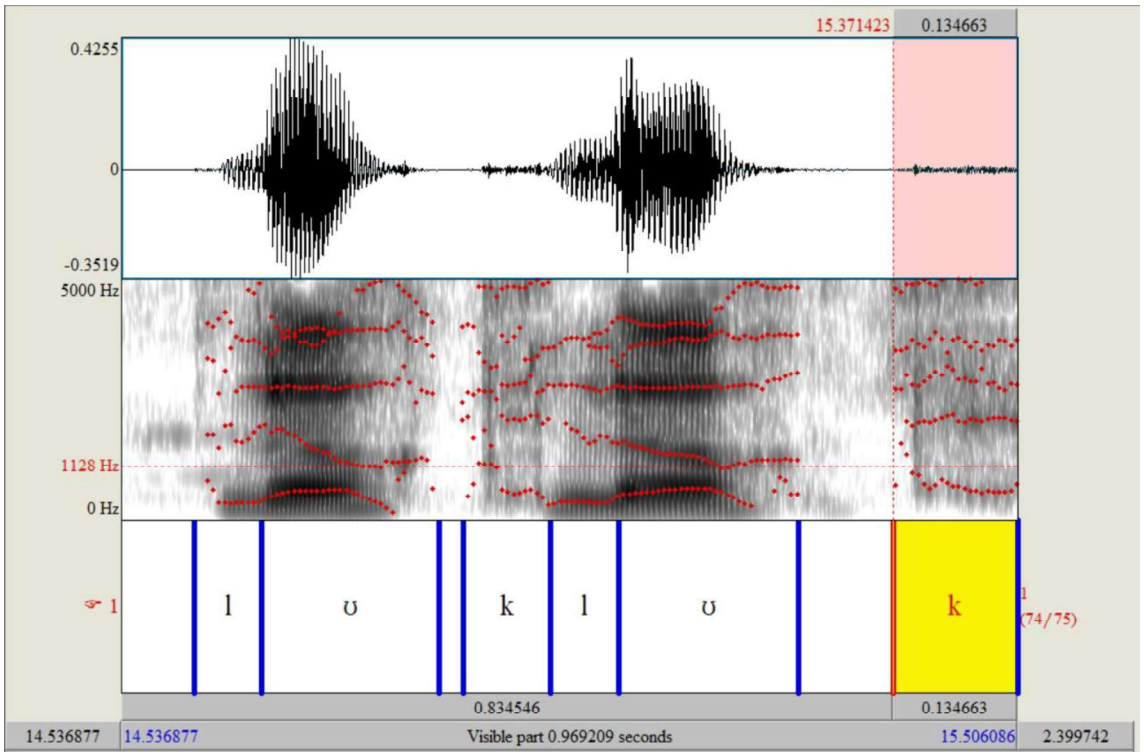

Figure 68: Waveform and spectrographic representation for the words “look” and “luck” produced by speaker G.