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INTONATION OF QUESTIONS AND REQUESTS IN LOWER INTERMEDIATE ADULT EFL STUDENTS

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INTONATION OF QUESTIONS AND REQUESTS IN LOWER INTERMEDIATE ADULT EFL STUDENTS

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INTONATION OF QUESTIONS AND REQUESTS IN LOWER INTERMEDIATE ADULT EFL STUDENTS

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April, 2021

ABSTRACT

This paper investigates the intonation of questions and requests produced by 10 adult lower intermediate EFL students. The aim of this study is to identify and analyze the most common intonation mistakes. It is significant to study the current state of intonation in order to propose methodological activities to improve specific intonation problems. In fact, the study compares the pitch contours of two questions and two requests produced by native speakers with the intonation of EFL learners. This descriptive study concluded that: the learners seem not to be aware of pitch contours and the function of intonation patterns; and that the L1 influences the production of the L2. These results suggest that some technological tools such as Praat can be used in the process of teaching and learning intonation.

Keywords: intonation, Praat, rising and falling tones, pitch contours, suprasegmental features

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RESUMEN

Este proyecto investiga la entonación en preguntas y pedidos en 10 alumnos que aprenden inglés en un país cuyo idioma es español y que tienen un nivel intermedio. El objetivo de este estudio es identificar y analizar los errores de entonación más comunes. Analizar la situación actual de entonación es importante para la propuesta de actividades metodológicas que mejoren problemas específicos de entonación. En efecto, esta investigación compara los contornos tonales de dos preguntas y dos pedidos de hablantes nativos con estudiantes. Este estudio descriptivo concluyó que: los estudiantes parecen no estar conscientes de los contornos tonales y la función que desempeñan los patrones de entonación y que el idioma nativo influye en la producción del segundo idioma. Estos resultados sugieren que herramientas tecnológicas como Praat pueden servir en el proceso de aprendizaje y enseñanza sobre entonación.

Palabras clave: Entonación, Praat, ascenso y descenso tonal, contornos tonales, características suprasegmentales.

INTRODUCTION

This study is based on one complex area of EFL teaching: intonation. Studies have stated that this area is not commonly touched in classrooms because the methodological resources to foster intonation do not seem to be enough (Nikolic, 2018). The general issue that this research found is the lack of intonation awareness. Hence, this descriptive study identifies the most common intonation issues in EFL learners in order to propose appropriate materials to foster this suprasegmental feature.

On one hand, Krashen (2006) states that it is not necessary for people to know the sound system of a language to communicate. Rather, pronunciation and intonation are important to be developed because they have a social meaning implied. Thus, the author states that the sound system of a language is acquired naturally by the input learners receive. However, the acquisition in a Second language background seems to be more feasible than in an EFL background where students are not commonly exposed to the language, which means that those students who are learning a second language in an EFL background would need direct instruction in order to acquire the language properly.

This is why this research looks forward to investigating intonation in lower intermediate adult EFL students. In order to achieve this objective, some studies that have been done in recent years will be described to know what can be observed when analyzing intonation. Furthermore, this study will present some intonation problems based on the analysis of the pitch contours produced by 5 female and 5 male intermediate students. Finally, according to the intonation problems found, some recommended intonation activities proposed by Collins, Mees (2013) Murcia, Brinton & Goodwin (2006) will be analyzed.

THEORETICAL FRAMEWORK

Intonation

Roach (2009) states that the function of intonation is similar to the role of punctuation in written production. The melody of delivered utterances termed as intonation is part of these suprasegmental features needed to produce our daily oral communication. In order to state a definition of intonation, it is necessary to differentiate it from pitch, both are related and are perceived in terms of frequency (high or low), but "pitch represents the individual tones of speech, and the intonation can be thought of as the entire melodic line" (Murcia et al, 2006:184).

In this sense, intonation involves significant effects depending on the type of language. Indeed, there are register tonal languages such as those spoken in China, Ghana, or Togo (Collins & Mees 2013) that use different pitch levels that carry diverse meanings to the same word. Thus, in tonal languages, the function of tone plays the role of conveying not only intention but meaning.

In regards to English language, on the other hand, "the pitch variation is confined to intonation" (Collins & Mees, 2013: 140) which means that the definition of the words

does not depend on the pitch variation. However, intonation that is perceived as the contour melodic line, represents the reflection within the context in which the words are being pronounced. Therefore, intonation plays a fundamental role to convey what the intention of the speaker is in terms of emotion or attitude. Furthermore, Anne Wichmann (2014) states, that the emotions, expressed in an utterance taken out of context, are understood differently. Hence, some expressions might be strategically used to make the other feel confident, to persuade, or to convey an agreement.

Murcia, Brinton and Goodwin (2006) state that a word produced with a different pitch variation can produce different effects of communication. For example, Roach (2009) states that if the speaker wants to say "yes or no" to respond to someone, the "falling tone" will be probably used. If speakers use them in a questioning manner, the "rising tone" will predominate. (Roach, 2009:163). In this sense, if the speaker does not intonate properly, the delivered message could be misunderstood.

Linguistic functions of intonation

One of the functions of the intonation mentioned by Collins & Mees (2013) occurs when the speaker highlights or emphasizes important and significant information by stressing the words. In this sense, Murcia et al (2006) states that there might be a lot of words receiving sentence stress, but there will be only one main idea or prominent element delivered in an utterance (Murcia et al 2006). Sometimes, the speaker tends to raise the pitch of the voice when delivering new information, and some authors state that stressed words generally occur at the end of an utterance.

Among other intonational functions, the attitudinal and discourse functions are commonly found in drama plays. Intonation, therefore, has a grammatical function that let the speaker "distinguish certain syntactic relationships (…) questions vs statements" (Collins & Mees, 2013). For example, depending on the intonation of the speaker an utterance can be understood either as a question or an emphatic statement.

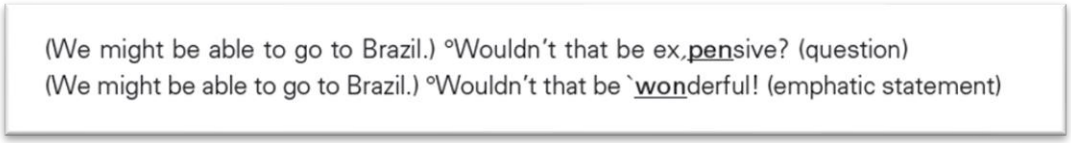


Figure 1 Examples of the grammatical function of intonation (Collins & Mees, 2013: 147)

The intonation patterns described above might depend on the intonational function which in turn will depend on the context and the intention of the speaker.

Intonation patterns in yes/no questions

The history of spoken English language is fairly broad. Indeed, there are different accents, dialects and varieties which come from different regions and are deserved to be studied. However, since the main concern of this research is to study the intonation in EFL students, we shall mention that the authors cited to explain the patterns of English intonation such Collins & Mess (2013) study a Non- Regional pronunciation which represents a "neutral type of modern British English". This research also presents the point of view of Murcia. et al (2006) who study the sound system of North American English. In this sense, the approaches on the analysis of English intonation patterns in questions and requests will be based on these systems.

There are some features that should be defined before analyzing the pitch contour of an utterance. For example, in any statement, question or request there is one stressed syllable that guide the flow of the intonation. It is stated that this stressed syllable is called *the intonation nucleus* which "has a marked change in pitch, and is somewhat longer and louder than the rest" (Collins & Mees, 2013:142). From the *nucleus* there is the *fall -rise* and the *rise-fall* which involve the pitch movement either from high to low to mid or from mid to high to low. Moreover, the high-pitched syllable that is produced before the nucleus is termed as *onset,* and what is between the *onset* and the *nucleus* is termed the *head.*

As it was mentioned, intonation also meets a discourse function that covers the signals for turn taking in a conversation. In this context, there are two basic categories: the rising and falling tones. Yes/ No questions involve rising tones. This common English pattern has two diverse pitch contours. The first one goes from middle to high level and in the other, the voice rises from low to a middle level (Murcia et al, 2006:187). Thus, it is stated that Yes/ No questions tend to follow the middle to high rise pattern.

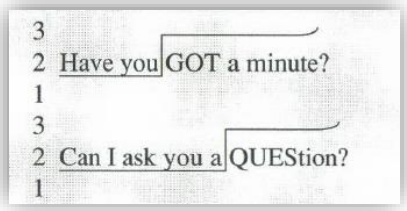


Figure 2 Example of Yes/No question intonation contour pattern. (Murcia et at,2006:287)

In the case of the samples that are going to be used in this research, the questions and requests have the pattern described.

Some studies around intonation: The influence of the L1

Since this research is focused on the intonation of Yes/ No questions and requests in EFL students, it is significant to mention a study done in Italy by Busa & Stella (2015). This study investigates the intonation patterns of English L2, Italian L1 and English L1, and it analyzes and compares the intonation contours of English L2 with the Italian and English L1 in 4 Italian native speakers.

This study concluded that the L1 has an important influence in the production of the L2. However, some dimensions of the L2 are acquired differently, which let the researcher state that "L2 learners may be able to acquire the phonology, but rarely the phonetics of L2 prosody" (Busa, & Stella, 2015:23) which means that it is difficult for learners to acquire and to be aware of the effects of rising and falling the pitch of the voice. This finding is related to what Derwing (2008) states. He mentions that before proposing materials to work with intonation, it is necessary to study the L1 to contrast with the L2 in order to comprehend their similarities and differences. However, the main conclusion from this research is not to have the learner sound like a native speaker, but to be understood by the listener.

Technological tools to study intonation

Since this study uses a technological tool to analyze the intonation of EFL speakers, it is necessary to mention some studies related to the study of speech using technological tools. In this sense, Zhang and Liu (2018) studied the prosody of spoken English produced by Chinese students. Through a computer assisted speech recognition tool, they could study speed, rhythm, accuracy and intonation. The authors concluded that the analysis of speech through this technological model could accurately reflect the level of English of the participants. Hence, the application of computer-aided speech recognition technology can support the process of learning a language in terms of evaluating speaking, and providing systematic feedback to students. Furthermore, these technological tools can also guide teachers and students in the process of teaching and learning speaking.

On the other hand, De Bot and Mailfert in the study: "The teaching of intonation: Fundamental research and classroom applications" (1982) mention that there could not be effective intonation teaching if students do not know the importance of it. This research concluded that "perception of intonation leads to improved production" (Kees de Bot and Kate Mailfert,1982:77). The idea is not only to have students in front of a technological tool that could help them improve intonation, but also to have students be aware of the role that intonation plays when speaking to someone.

Some findings and recommendations

In fact, intonation materials work as long as they fit with student's interests. The experiment conducted by De Bot and Mailfert (1982) used a tape to have students imitate the intonation of the sounds. However, students preferred to have explicit intonation contours in order for them to know exactly how to intonate. Moreover, the participants wanted to know what are the meanings in discourse associated with changes of intonation, this is also related to the fact that the participants wanted to work with technological tools under the guidance of the teacher. They preferred to have feedback from their instructor rather than from the technological tool. The study described points out a critical problem that teachers might face, the lack of interest in intonation.

Many participants did not want to sound like a native speaker, they just wanted to be understood. However, some authors have stated that teachers should try to show students that utterances with different intonation can have different meanings in different situations. A time ago, the deal was to create special settings to increase the awareness of students in relationship with pitch changes. Indeed, there are different techniques that this research proposed, but the most relevant one for this study is speech visualization. Since some students demonstrated their interest to see pitch contours in order to conceive how intonation should be, nowadays, the deal should be to know how to use technological tools accurately. Thus, it is significant to say that a tool such as Praat can effectively be used in EFL classrooms. Studies such as one done by McCrocklin (2015) propose the use of Automatic Speech Recognition technology in order for students to practice pronunciation and empower their autonomous learning.

METHODOLOGY

Research Design

This qualitative and quantitative research aims to identify the most common mistakes in questions and requests made by EFL students in regards to intonation.

Participants

The participants are 10 Spanish native speakers (5 females, 5 males) who are learning English as a foreign language during the first term of the year 2021. It is significant to mention that in this foreign language context, the participants are not exposed to the language as in a second language learning environment. Thus, one of the biggest challenges for EFL learners is to master speaking skills. The participants who have been randomly selected, have an A2+ level of English, and they are ranging the age from 20 to 25 years old. It is also necessary to mention that they are currently pursuing an English language certificate because it is a requirement to graduate from the university.

Materials

This research aims to work with the pitch of the voice when asking questions and requests. For this reason, two questions and two indirect requests were selected. In the following chart, it can be seen the samples used.

YES/ NO QUESTIONS	*REQUESTS WITH MODALS*
Q1. Were you born in Buenos Aires?	*R1. Could you tell me where the nearest ATM is?*
Q2. Did you take English classes in Argentina?	*R2. Can you tell me how often the buses run?*

In order to measure the voice of students quantitatively, a software tool called Praat (Boersma & Weenink, 2011) will be used. Praat is a computer program that let the researcher analyze different phonetic features such as intonation, intensity, pronunciation, rhythm, among other suprasegmental features. This tool was developed by the Phonetics Department at the University of Amsterdam below the direction of Boersma & Weenink (2008). (Farías, 2013). In this sense, the tool provides spectrograms of the speaker's voice in which the levels of pitch and intensity can be observed. A spectrogram, indeed, is a *spectro-temporal representation* of the sound (Boersma & Weenink, 2011). Furthermore, the graphics will contain time and frequency scale that is represented in Hertz (Hz). The spectrogram also shows a darker part that represents the density of the voice energy. On the contrary, the lighter parts mean a low density in regards to the energy of the voice. Moreover, there will be red, blue and yellow vertical time cursors representing the frequency of spectra peaks, the pitch and the intensity contour respectively.

For the purpose of this study, the pitch contour will be observed to analyze intonation and the data obtained will also clarify the intonation produced by the native speakers and participants. Furthermore, it is believed that a good quality of the recordings can help this research to obtain more reliable results, thus every audio has been improved in terms of quality in Adobe Audition (2019)

Procedure

First, a model of each question and requests from a native English speaker will be extracted from the audios that are included in Interchange Cambridge fifth edition book (2018) (4 recordings in total). The audios obtained will be analyzed in Praat. These models will be described quantitatively and qualitatively.

The quantitative data presents an average of the minimum and maximum pitch, this average will help to calculate the "mean pitch" of each question and request. On the other hand, the intonation contour in blue will also be described and compared according to what it is seen in the model audios and the recordings of the participants.

Second, the participants recorded their voice asking the same set of questions and requests, and the recordings will also be analyzed in Praat (40 recordings in total). It is significant to say that the participants did not listen to the audio models previously. Since the questions and requests proposed fit the level of the students, they are supposed to know how these questions should be pronounced.

Each student's recording will be compared with the model audios, according to what can be seen in the spectrogram in relationship with the words, the mean pitch and the pitch contour presented. The results will also be analyzed according to a qualitative perspective using the different author´s criteria, especially those developed by Roach (2009), Murcia, Brinton and Goodwin (2006)

RESULTS

Intonation contours in Yes/No questions produced by native speakers.

Armstrong and Ward (1926) in Cruttenden (1980) stated some universal patterns related to ordinary statements and questions or requests; the falling tone is common is statements while "the rising tone is used for yes/no questions, requests, statements with implications" (Cruttenden, 1980:78). In this sense, it is significant to mention that the questions and requests selected for this research have the common rising tune pattern. Indeed, in regards to the first yes/ no question produced by a native male speaker (figure 2) shows that the voice maintains a medium level of pitch in the words "*were and you"*, at the end of the last word the pitch of the voice falls and ascends in "*born"*. The word "*in"* maintains the same level as "*you"*, and the words "Buenos Aires" are higher. The highest level of pitch is located in the end of the question, and the mean pitch of this utterance is 122.95Hz.

Figure 4 shows question 2. It can be seen that the pitch of the voice rises from low to high in the words "you, take and English", the voice falls and rise (L+H) in the last word, and there is a glide in the last syllable of the word "Argentina". The highest peak of the question is in the first letter of the word "English" and in the last syllable of "Argentina". The mean pitch is 144.50 Hz. The questions show a common pattern in English, according to Murcia, et al in "Teaching pronunciation" (2006)

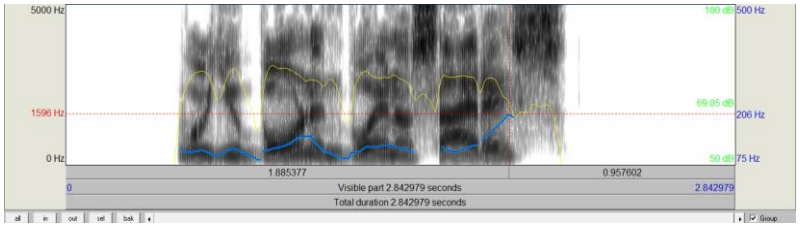


Figure 3 Spectrogram that shows the pitch contour in blue and the intensity contour in yellow of question 1 produced by a native speaker.

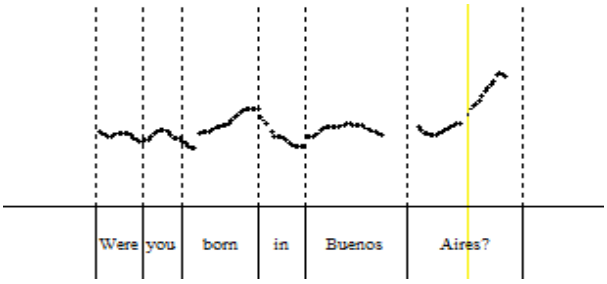


Figure 4 It specifies the pitch contour and the corresponding words of question 1 produced by a native speaker.

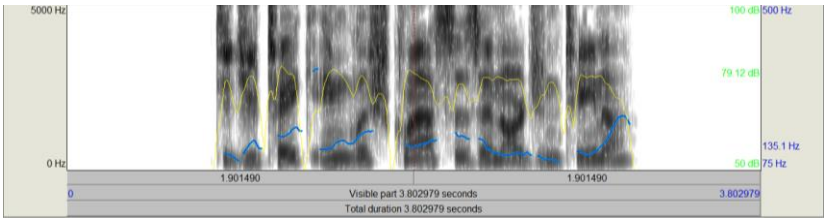


Figure 5 Spectrogram that shows the pitch contour in blue and the intensity contour in yellow of question 1 produced by a native speaker.

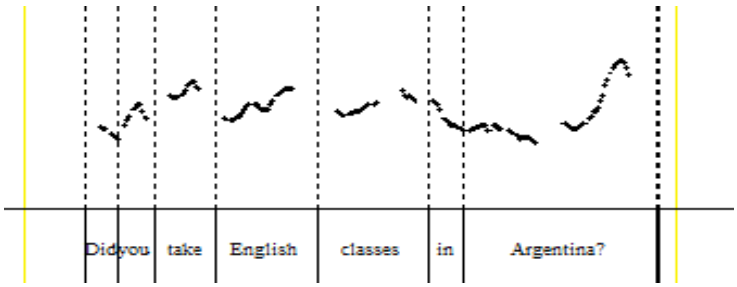


Figure 6 It shows the pitch contour and the corresponding words of question2 produced by a native speaker.

Intonation contours in requests produced by native speakers.

Figure 6 shows that in the case of the request 1, the voice starts with a high pitch, and it falls in "tell". There is an H+L pattern in the beginning. The voice rises again in the word "me" and falls in "nearest" The pitch maintains the same level until "ATM" and it starts rising to say "is". The highest peaks are located in the beginning and in the end of the request.

It can also be seen in figure 8 that the pitch contour is similar to request 1. Indeed, it starts with a high pitch in the word "did" and it falls in "you" the voice rises again in "me" and "often", and it falls again in the article "the". Finally, the pitch ascends from low to high in the words "buses and run". The request ends with a high pitch. And the highest peak of the voice occurs in the word "run" that is located in the end of the request. The mean pitch in request 1 is: 214.74 Hz and 208.55 Hz in request 2.

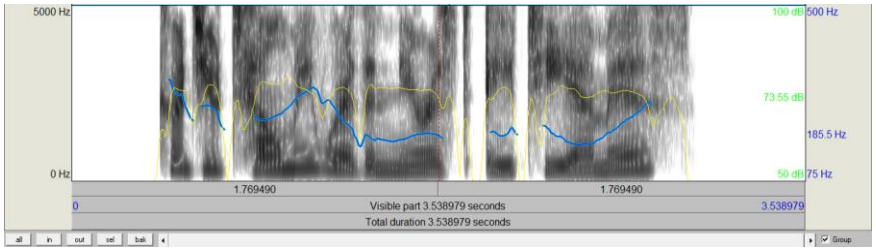


Figure 7 Spectrogram that shows the pitch contour in blue and the intensity contour in yellow produced by a native speaker.

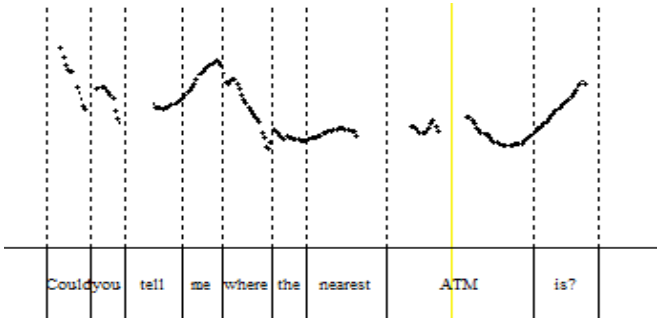


Figure 8 It shows the pitch contour and the corresponding words of a request produced by a native speaker.

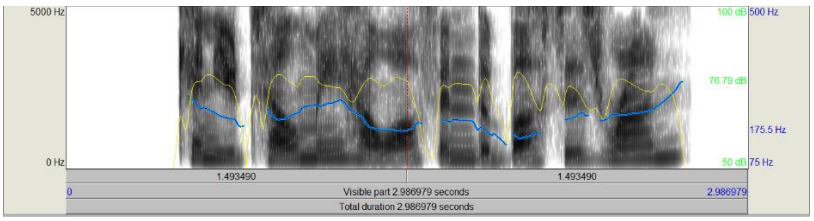


Figure 9 Spectrogram that shows the pitch contour in blue and the intensity contour in yellow.

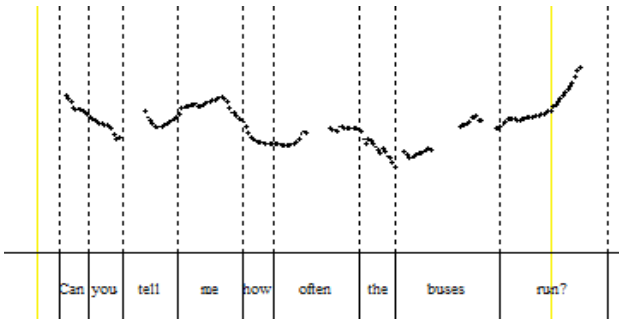


Figure 10 It shows the pitch contour and the corresponding words of a request produced by a native speaker.

Intonation contours in Yes/No questions produced by EFL speakers.

From men, only one participant's pitch was lower than the model. In figure 8, it can be seen the low pitch contour produced by participant 3, the pitch of the voice of the rest of participants were pretty higher. Furthermore, only 1 participant (P1) rises the voice at the end of question 1 representing the highest peak (figure 10). The others reached the highest peak in other parts of the question.

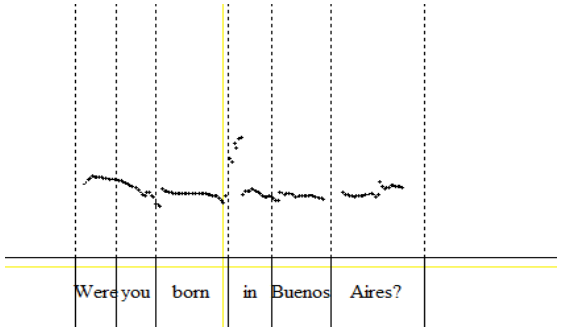


Figure 9 It shows the pitch contour and the corresponding words to question 1 produced by participant 3

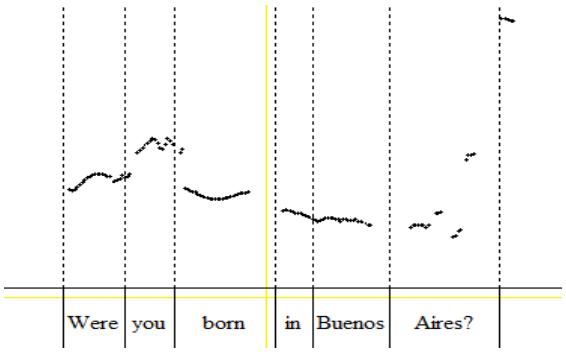


Figure 10 It shows the pitch contour and the corresponding words to question 1 produced by participant 1

From the 5 female participants, 3 of them raise the voice at the end of the question as the native speaker does. The mean pitch in the case of women is higher than the male's participants because the frequency or women is higher. Moreover, 3 participants raised their voice since the beginning. It seems that most of them got confused between the WH question "where" and the verb to be in past "were". According to Murcia, et al (2006) the pattern of a WH question is different from a Yes/No question.

In regards to question 2, only one male student (P1) raises his voice at the end of the question. The rest of the participants raise the pith of the voice in the words "you and take". On the contrary, in the case of females, all of them rise the pitch of the voice at the end, and the pitch contour pattern is closer to the model than in the case of men.

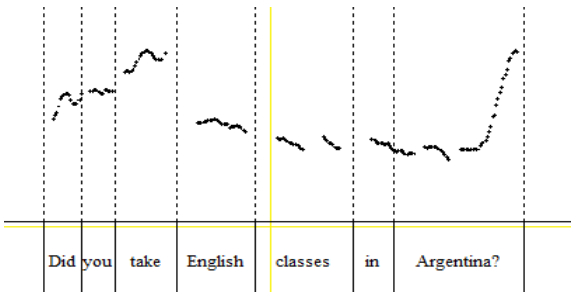


Figure 11 It specifies the pitch contour and the corresponding words of question 2 produced by participant 1

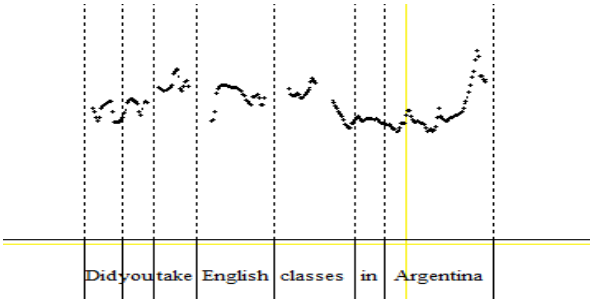


Figure 12 It shows the pitch contour and the corresponding words of question 2 produced by participant 9

Intonation contours in requests produced by EFL speakers.

In relation with request 1, all the participants raised the pitch of the voice at the end of the requests. There are some peaks in words that should not be stressed. Since this request is longer than question 1 and 2, as it can be observed in figure 13, the intonation does not follow a natural contour. A similar pattern occurs in nearly all the participants.

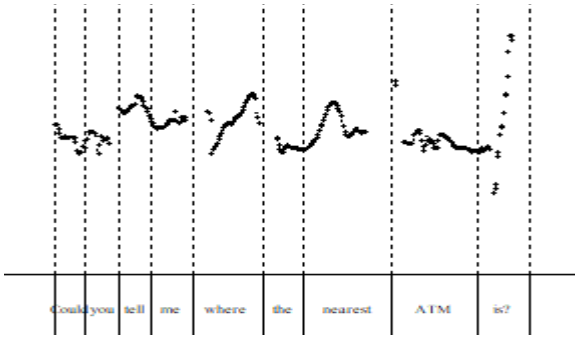


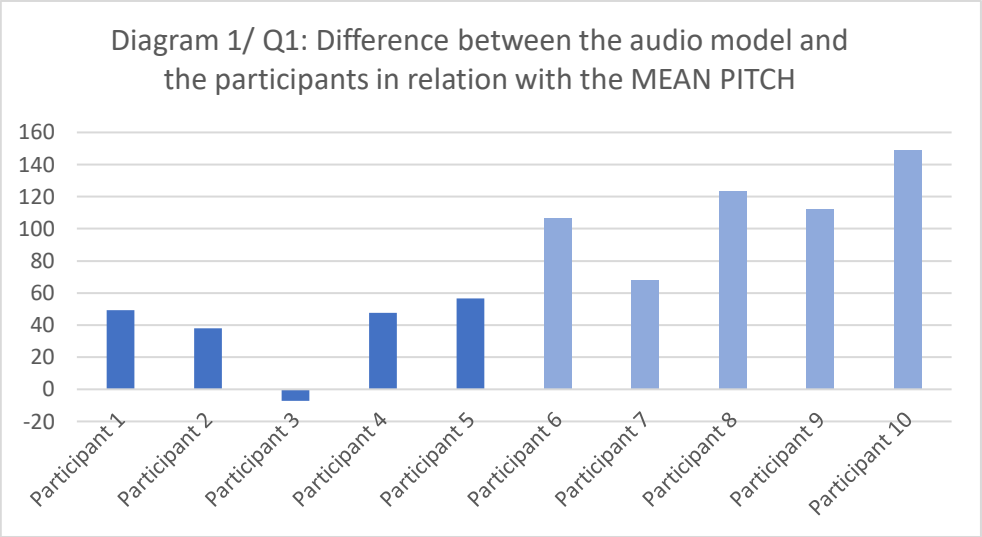
Figure 13 It shows the pitch contour and the corresponding words of request 1 produced by participant 9

In regards to request 2, any male participant reaches the standard level of frequency, the mean pitch of the participants will be explained in the next part. Moreover, they all tend to stress in the word "you", and the words that are stressed in the model such as "tell and run" are not produced with a high pitch.

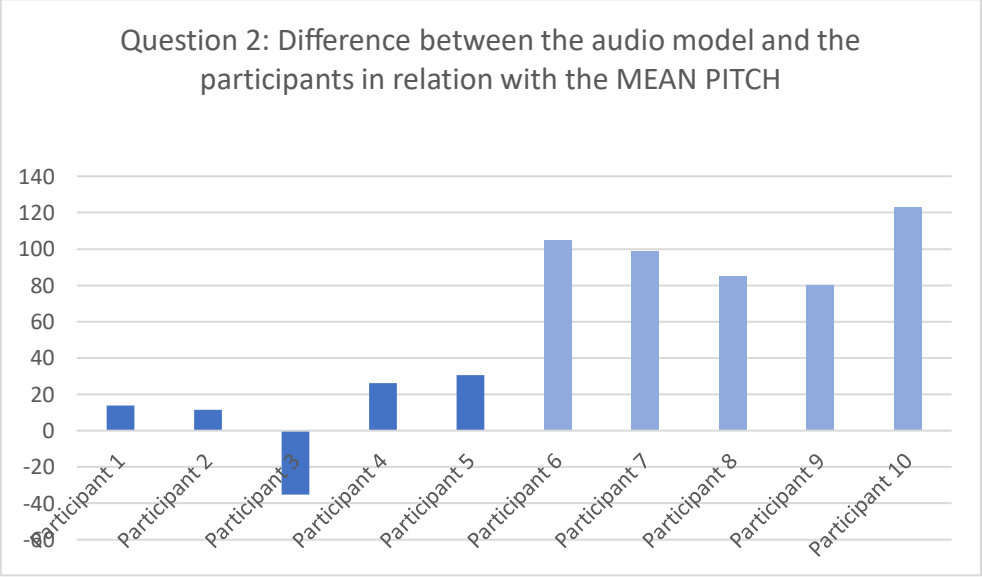
The difference of mean pitch

Since the two first samples (questions) were recorded by a male native speaker and the requests by a woman native speaker, the levels of frequency are going to vary because the frequency of women is different from men. However, as Murcia, et al Goodwin (2006) state, in reference to the phonetic notion of pitch, the levels that are analyzed are the "pitch levels of a given speaker" not the high or low levels that men's and women's voice might have.

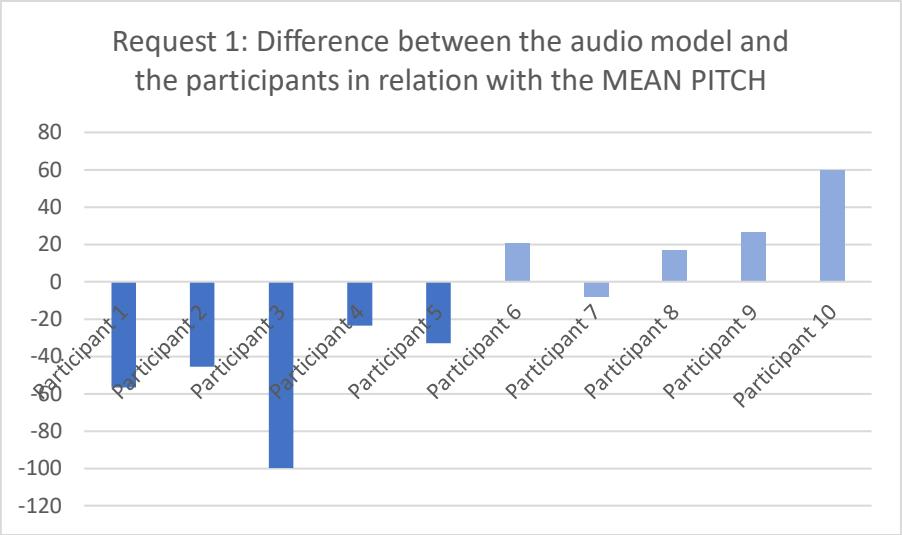
The diagrams below represent the difference existing between the mean pitch of the model (standard) and the mean pitch of the participants. Those participants who are closer to 0, are the ones who are closer to the intonation standard level.

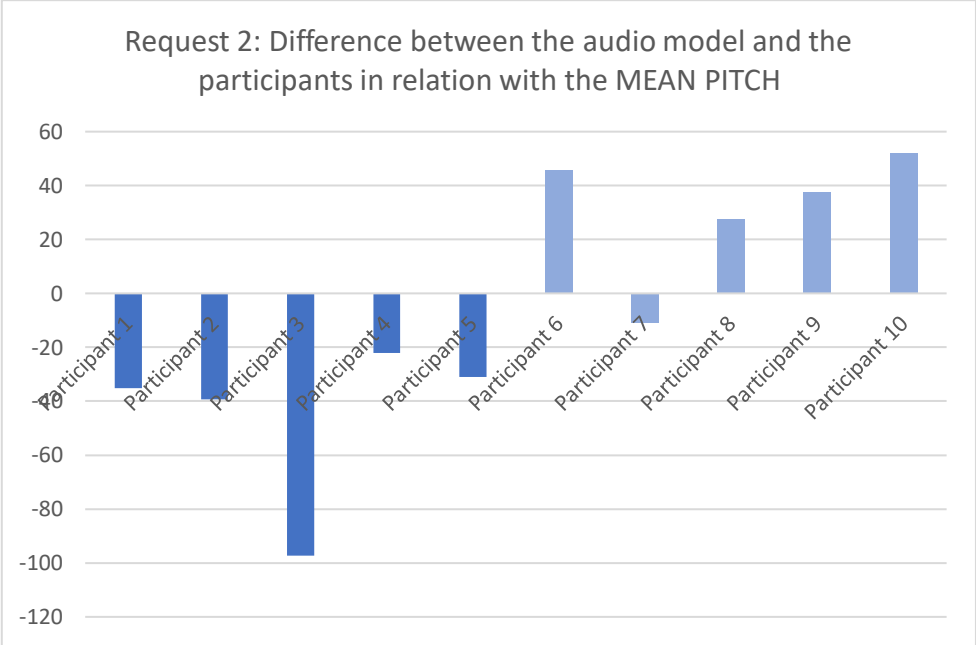


In diagram 1, it can be seen the mean pitch of question 1, participant 3 has the lowest mean pitch. The rest of the audios have a higher mean pitch which means that they are very distant from the standard model audio. Since the model audio was recorded by a man, it can be seen that male participant's frequency is closer than the model audio. In regards to women, the diagram shows that participant 10 has the most distant mean pitch.



In regards to requests, any male participant reached the standard level of the native speaker intonation, the frequency is too low. However, in all the cases, the voice rises at the end of the request. The mean pitch of 3 out of 5 females is higher than the standard mean pitch of the model audio.





DISCUSSION

The objective of this study was to find the most common intonational mistakes to foster accurate discourse effects in EFL students. In order to achieve this main goal, this study studied the differences in the production of questions and requests between native speakers and EFL students. In regards to the mean pitch, it is concluded that the frequency of requests is too distant from the model audios. It seems that the reason is because the requests provided are longer than questions.

On the other hand, the pitch of the voice from students who deal with intonation have undetermined pitch contours which means that the pitch of the voice tends to be raised in any part of the utterance. In other cases, the intonation seems to be lineal, there are not rising or falling intonation contours. Moreover, in other cases, instead of raising, the pitch of the voice tends to fall as it can be seen in figure 14. As a result of this finding, it can be stated that students do not seem to be aware of the importance of stressing significant words in an utterance. Either in a statement or a question, stressing plays a phonological role, this is why, there are different intonation patterns that deliver different meanings.

In regards to what it has been stated, intonation may be difficult to teach because EFL learners "are not always aware of the uses and meanings of prosody even in their own language" (Busa, & Stella,2015:16) Furthermore, it is known that intonation as part of prosody is the key for successful communication since intonation patterns reflect the grammatical and discourse functions of an utterance (Murcia et al,2006.184). In fact, Collins & Mees (2013) state that if the *nucleos* of a yes/no question is produced with a falling pattern, it can reflect insistence. Likewise, another type of intonation can reflect other different discourse effects.

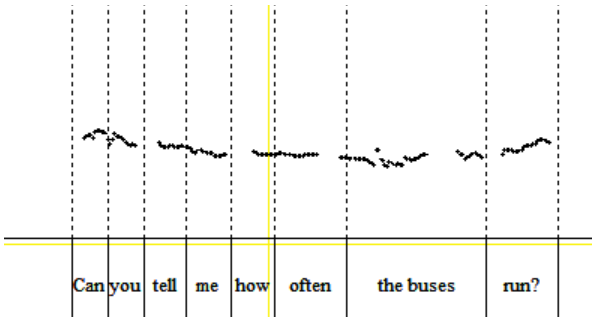


Figure 14 It specifies the pitch contour, and the corresponding words of the request 2 produced by participant 3

Furthermore, there are some peaks that are extremely high or low. And they are abruptly separated from the intonation contour. This can be the effect of not following a natural flow of the request, the students, whose pitch contour have this problem, could not pronounce well the word. When listening the audio from participant 6, it was evident that she was doubting at pronouncing the words, which did not let her intonate properly. Thus, all the speaking features are related, and they have to be mastered in order to improve speaking's intelligibility.

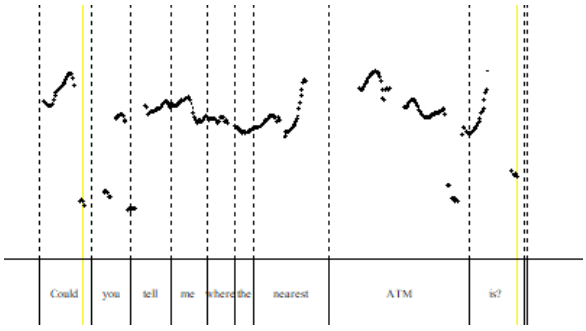


Figure 15 It shows the pitch contour and the corresponding words of request 1 produced by participant 6

The present research also holds the idea that the L1 influences the production of the L2 because it was found that there is a similar pattern between the intonation of yes, no questions and requests produced by the native English speakers and EFL students. Indeed, in the study done by Busa, M & Stella, A (2015) is stated that the L1 influences in the perception and production of the L2 in terms of prosody features such as intonation. In general, in the chart below it can be seen that most students tended to raise the pitch of their voice at the end of the questions. However, the questions seem to be easier to produce than requests.

This supposition let the research conclude that it may be significant to study the sound patterns of the native speaker's language in order to understand intonational EFL problems. In fact, Collins and Mess (2013) state:

> "The pronunciation errors that second language learners make are not just random attempts to produce unfamiliar sounds. Rather, they reflect the sound inventory, rules of combination, and the stress and intonation patterns of the native language" (p. 259)

Finally, through these spectrograms, we can not only measure intonation and the levels of the voice, but also the quality of speaking in general.

Recommended activities

In regards to the lack of stress awareness, Murcia, et al (2006) and Collins & Mess (2013) recommend some activities to present syllable prominence to students. As it has been stated, syllable stress can change the meaning of utterances, and it can change the discourse effect. At first, it is important for students to be aware of rising and falling movements.

Hence, in order for students to work with pitch and intonation. Collins & Mess (2013) propose an activity that consists of imitating the pitches described. Students visualize pitch contours and imitate what they see. There are a variety of systems in which students can visualize the frequency of the voice. For example:

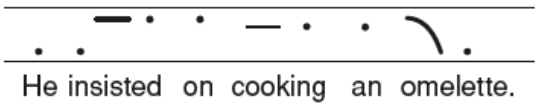


Figure 11 (Exercise extracted from Collins and Mess, 2013:141)

Once students know what rising and falling mean in an utterance. The learner needs to know the functions of intonation. Thus, there is the possibility to have students be aware of the changes in meaning of the same utterance that is pronounced with different intonation patterns. In the activities based on Celce Murcia, et al (2006), students imitate the pitch contours. In activity 2 the stress syllable is presented in the upper case, in activity 1 students can visualize the pitch contour.

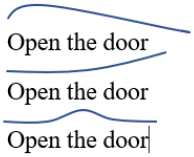


Figure 12 Activity 1

OPEN the door

Open the **DOOR**

Open **THE** door

Figure 13 Activity 2

In order to let students, know the importance of intonation. After the previous exercise, students can notice the effects of pronouncing statements with different pitch contours.

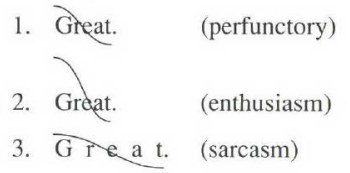


Figure 14 Exercise extracted from Murci et al, 2016:185)

CONCLUSIONS

The data obtained aimed to identify common intonation mistakes of the L2 production in EFL students. Since intonation seems not to be commonly touched in classrooms, it is important to understand the type of errors that learners make in order to propose different teaching methods and materials.

The idea of this research is not to have the learner sound like a native speaker, but to be aware of the features that are needed to improve our second language's intelligibility. It must be said that authors such as Krashen, (2013) point out that Second language pronunciation is acquired naturally and it can be successfully instructed by the input students receive without any planned instruction. For instance, based on his experience, it is stated that the second language accent will depend on the mood of the person, but not on formal instruction. In other words, if the learner does not feel comfortable with the people he is talking to, the affective filter will increase and consequently, it will affect all the features that let the speaker be understood. In this sense, the author states: "For pedagogy (…) there is no evidence that second language accent can be permanently improved by direct instruction" (Krashen, 2013:19). However, the instruction of an EFL learner is different from students who acquire the language in a second language background because an EFL learner is not exposed to the language as a Second Language learner. Thus, some studies around this field are needed in order to improve EFL teaching. Moreover, the current research states some findings to develop awareness about the role of intonation in meaningful conversations.

RECOMMENDATIONS

There is a necessity related to intonation that has been highlighted by Gregersen (2011); Derwing, T. M. (2008); Douglas, S. R., & Rosvold, M. (2018); Kivisto- de Souza (2020) and other specialized authors. They have stated the importance of paying attention to suprasegmental features in order to raise awareness. Having students practice different components such as pronunciation and intonation is part of this significant process. Furthermore, it is known that an accurate intonation facilitates an understandable communication; thus, more methodological and interactive activities are needed to be recommended since resources related to intonation does not seem to be enough.

This research has made the way for further intonation studies such the analysis of how recommended activities work in real teaching settings. Moreover, since teaching in general have become virtual because of the pandemic, it would be significant to study some intonation activities and pedagogy guidance that fit a virtual setting. Finally, the technological tool Praat that was used to analyze intonation can also be applied in our classroom as a tool of teaching. Thus, further research can identify valid and reliable technological tools that can be used in EFL classrooms in order to foster speaking.

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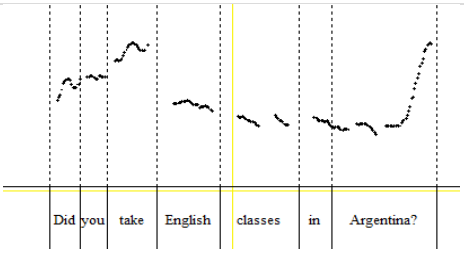
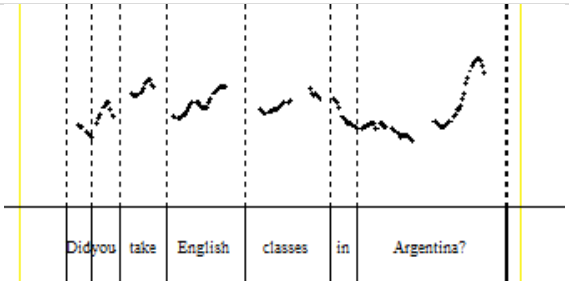
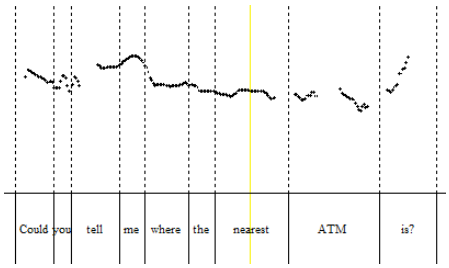
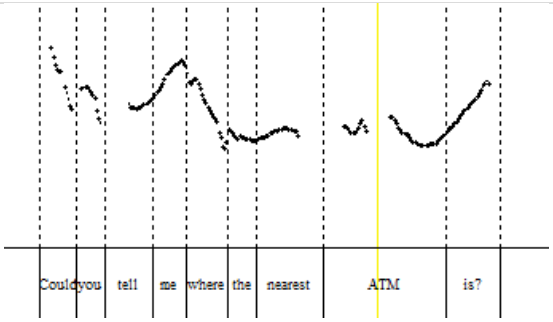
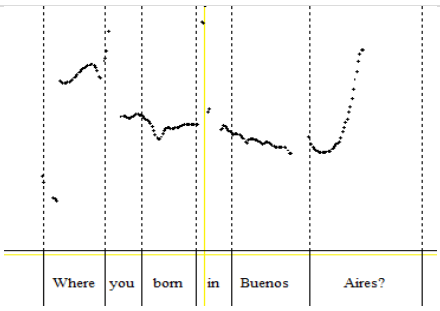
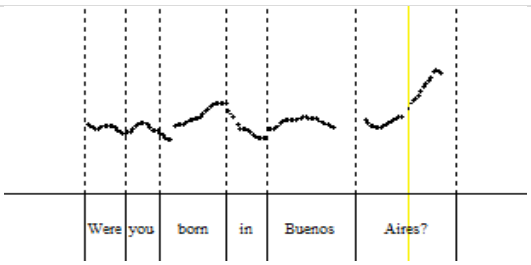
APPENDIX

Comparative table of the main differences found

Participant's pitch contour	Native speaker's pitch contour
 *Figure 15 It specifies the pitch contour and the corresponding words of question 2 produced by participant 1*	 *Figure 16 It shows the pitch contour and the corresponding words of question2 produced by a native speaker.*
 *Figure 17 It shows the pitch contour and the corresponding words of request 1 produced by participant 5*	 *Figure 18 It shows the pitch contour and the corresponding words of a request produced by a native speaker.*
 *Figure 19 It specifies the pitch contour and the corresponding words of question 1 produced by participant 8*	 *Figure 20 It specifies the pitch contour and the corresponding words of question 1 produced by a native speaker.*

Participant 1

Q1. Were you born in Buenos Aires?

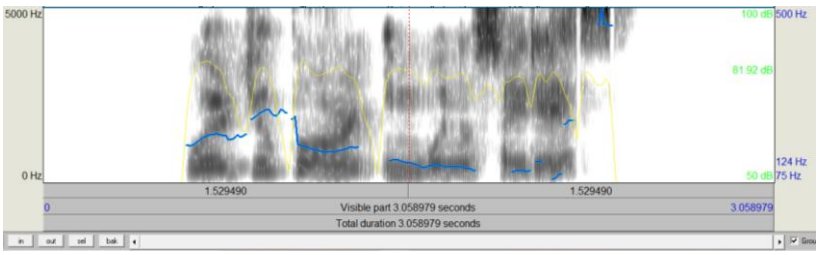


Figure 21 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 1

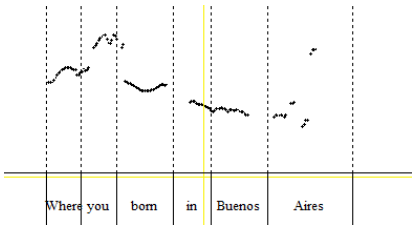


Figure 22 It specifies the pitch contour and the corresponding words of question 1 produced by participant 1

The pitch is higher in the word "you", and it descends in the words "born, in and Buenos", the contour is different from the native speaker model in terms of height. In the end, the voice rises and the last pick is higher that the model one. Indeed, the mean pitch is higher than the model audio. There is a difference of 49,44 Hz. In the maximum pitch the double of the model, which means that the pitch is really high which means that the rising pitch does not sound natural.

Q2. Did you take English classes in Argentina?

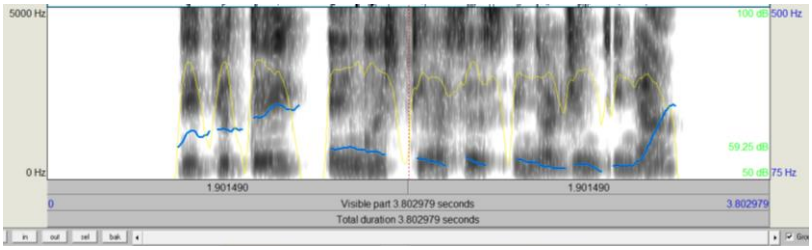


Figure 23 Spectrogram of the pitch contour in blue and the intensity in yellow of question2 produced by participant 1

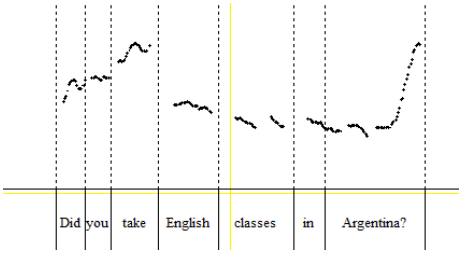


Figure 24 It specifies the pitch contour and the corresponding words of question 2 produced by participant 1

The pitch is as high as the model audio in the word “take”. However, the voice descends and it rises again in the second syllable of the word “Argentina”. The highest peak, moreover, is located is take, and it should be in “tina” at the end of the question. In regards to the mean pitch, this is a little higher from the model audio. The difference is 13,77 Hz

R1. Could you tell me where the nearest ATM is?

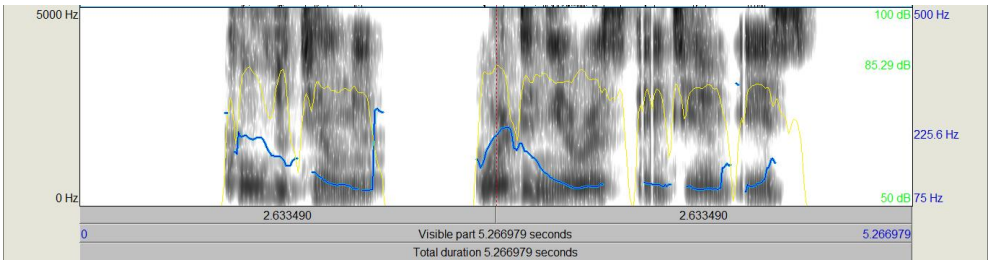


Figure 25 Spectrogram of the pitch contour in blue and the intensity in yellow of requests produced by participant 1

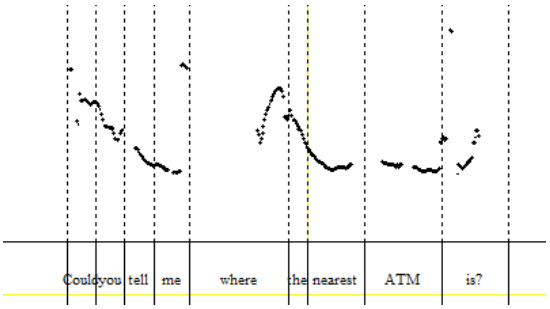


Figure 26 It shows the pitch contour and the corresponding words of request 1 produced by participant 1

The participant starts rising the pitch of the voice. However, the question does not follow the natural intonation when pronouncing a direct question. There is a space in “where”. The mean pitch is lower than the model audio.

R2. Can you tell me how often the buses run?

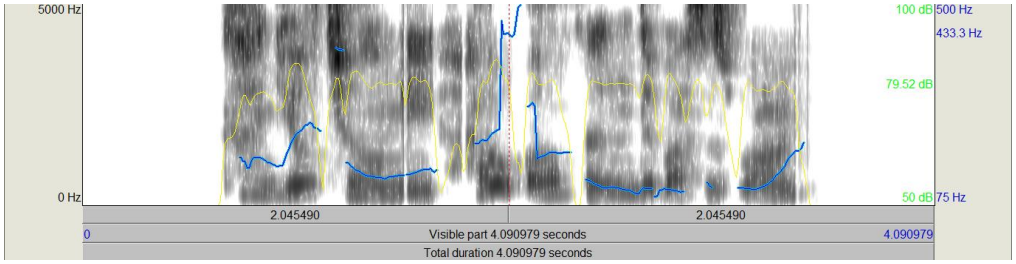


Figure 27 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 1

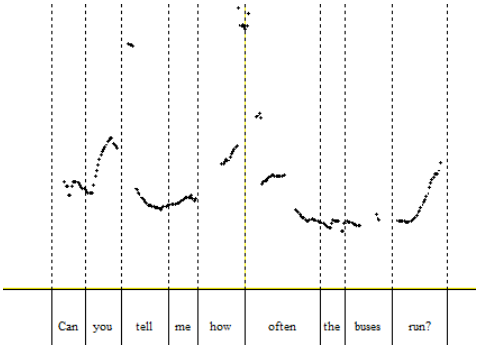


Figure 28 It shows the pitch contour and the corresponding words of request 2 produced by participant 1

The mean pitch (173,49 Hz) is lower than the standard one (208.55 Hz). The participant tends to rise his voice in you while in the standard audio, the voice rises in the words "me" and "run", the last one is located in the end of the request.

Participant 2

Q1. Were you born in Buenos Aires?

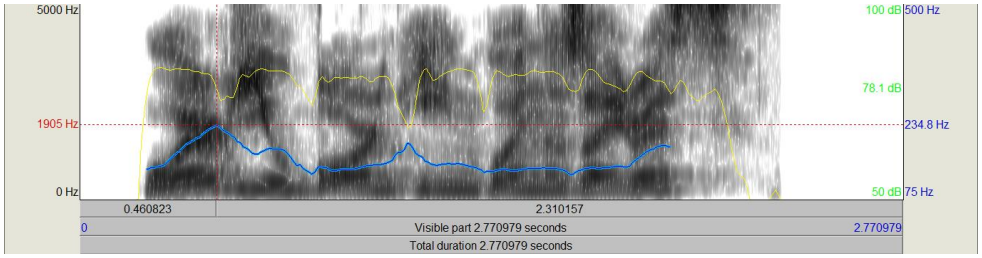


Figure 29 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 2

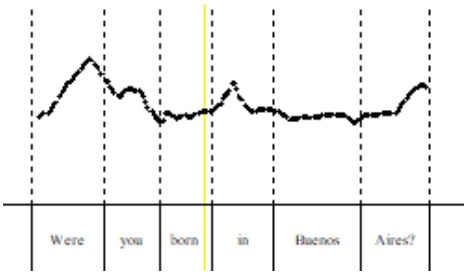


Figure 30 It specifies the pitch contour and the corresponding words of question 1 produced by participant 2

It can be seen that the pitch of the voice at the beginning is high, which differ from the model audio, the highest pick should be at the end since it is a yes/no question. The student might get confused with a HW question since Where and were have a similar sound. The total average of this question is 122,95 Hz, this participant's frequency is 173,39 Hz, 37 Hz more than the standard pitch.

Q2. Did you take English classes in Argentina?

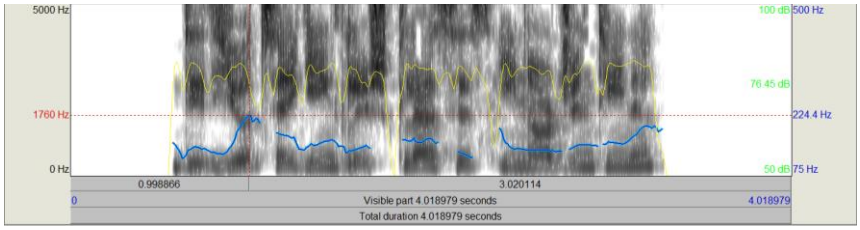


Figure 31 Spectrogram of the pitch contour in blue and the intensity in yellow of question2 produced by participant 2

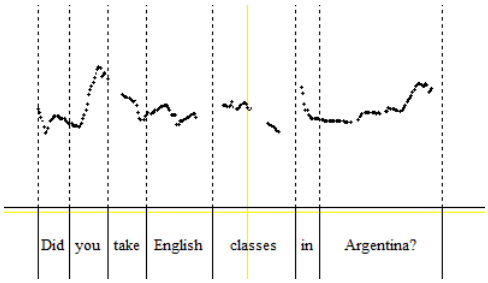


Figure 32 It specifies the pitch contour and the corresponding words of question 2 produced by participant 2

This participant tends to rise the voice in the word "you" while the model audio shows that the voice should be high in "take". Moreover, the highest peak of the voice is not located at the end of the question as in the model audio. In regards to the mean pitch, it is a little higher, there is a difference of 11.43 Hz.

R1. Could you tell me where the nearest ATM is?

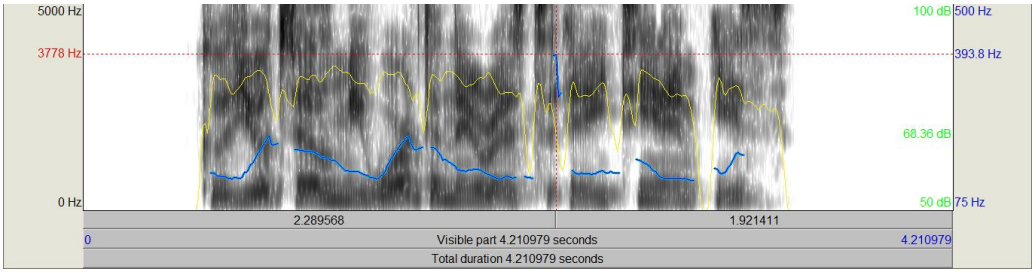


Figure 33 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 2

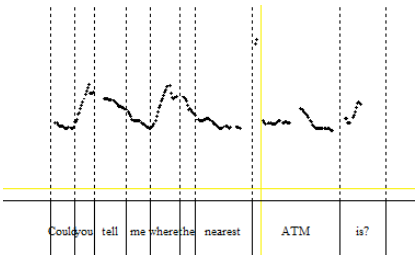


Figure 34 It specifies the pitch contour and the corresponding words of request 1 produced by participant 2

The pitch contour is pretty similar to the model audio. However, the voice in the participant is low in the beginning, while in the model audio is high. In regards to the mean pitch, the participant's average is lower (169.07 Hz) than the model audio (214.74 Hz).

R2. Can you tell me how often the buses run?

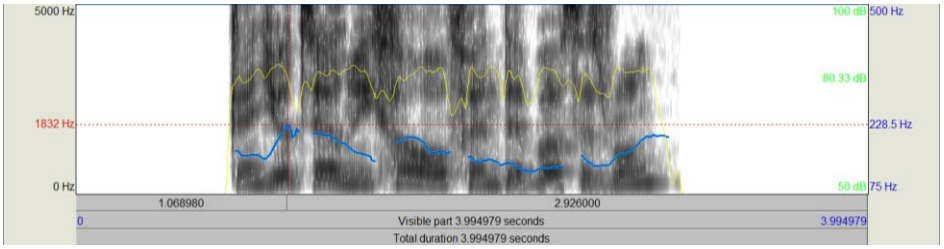


Figure 35 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 2

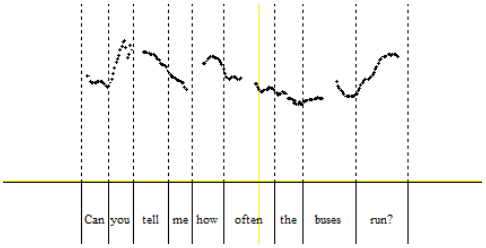


Figure 36 It specifies the pitch contour and the corresponding words of request 2 produced by participant 2

The pitch of the voice is high and low in the end (HL) while in the model audio, the voice shouldn't fall. The mean pitch is lower than the model audio.

Participant 3

Q1. Were you born in Buenos Aires?

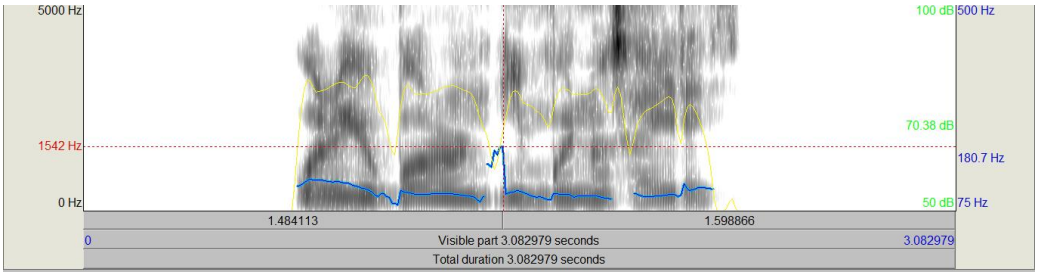


Figure 37 Spectrogram that shows the pitch contour in blue and in yellow produced by Participant 3.

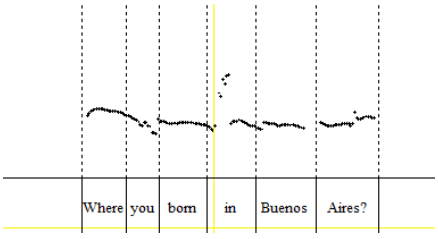


Figure 38 It specifies the pitch contour and the corresponding words of the question 1 produced by participant 3

In the case of participant 3, it occurs the opposite of the two first participants. The pitch maintains a medium intonation, the voice does not falls nor rise. The highest peak is in the word "in", a word that shouldn't be stressed. The mean pitch is 115.72 Hz, there is a difference of 56.46 Hz if it is compared with the model audio.

Q2. Did you take English classes in Argentina?

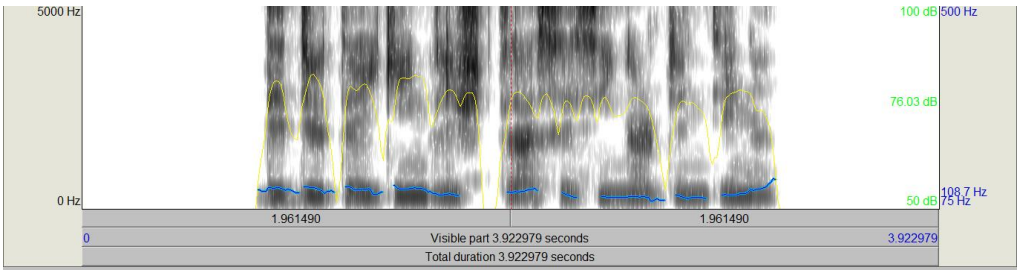


Figure 39 Spectrogram that shows the pitch contour in blue and in yellow produced by Participant 3.

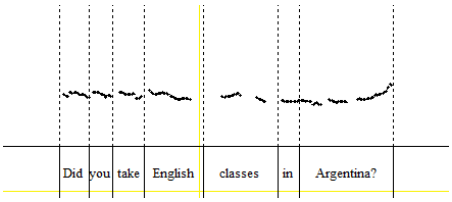


Figure 40 It specifies the pitch contour and the corresponding words of the question 2 produced by participant 3

It seems that this participant has problems with intonation because the pitch contour is very different from the model audio. The voice is lineal and there are not falling or rising waves. However, the pitch of the voice rises a little in the end. As a consequence, the mean pitch (109.38 Hz) is lower than the model audio (144.50 Hz).

R1. Could you tell me where the nearest ATM is?

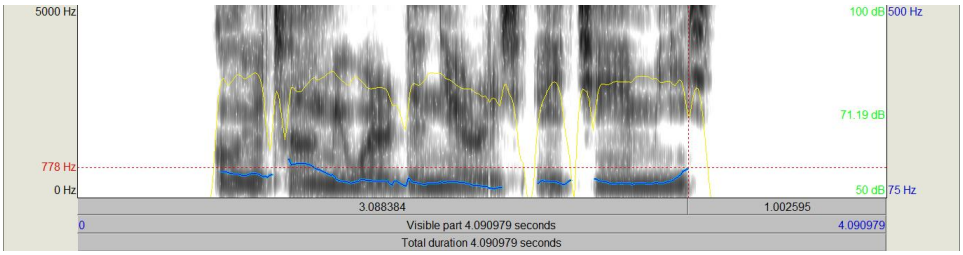


Figure 41 Spectrogram that shows the pitch contour in blue and the intensity in yellow produced by Participant 3.

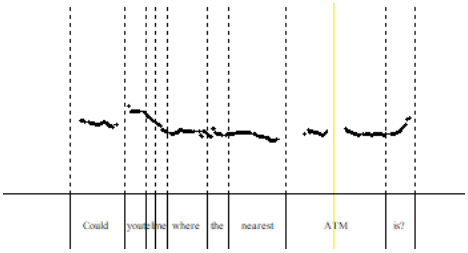


Figure 42 It specifies the pitch contour and the corresponding words of the request 1 produced by participant 3

The mean pitch is lower than the model audio. The voice doesn't rise nor fall, the pitch of the voice maintains a medium level. He highest peak is located in the word you while in the model audio the highest peak is in the word "me".

R2. Can you tell me how often the buses run?

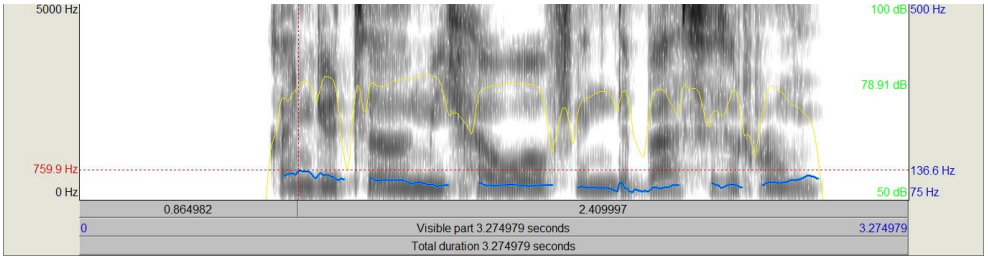


Figure 43 Spectrogram that shows the pitch contour in blue and the intensity in yellow produced by Participant 3.

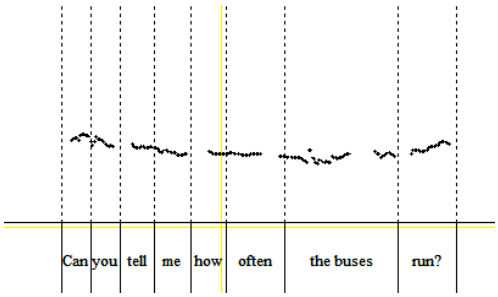


Figure 44 It specifies the pitch contour and the corresponding words of the request 2 produced by participant 3

In regards to the mean pitch, the participant has a lower frequency than the model audio. Their voice does not rise nor fall. It just starts with the voice high, but the voice does not rise in the end of the request.

Participant 4

Q1. Were you born in Buenos Aires?

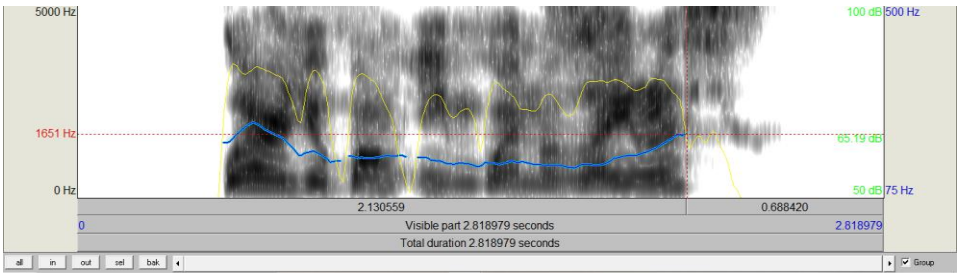


Figure 45 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 4

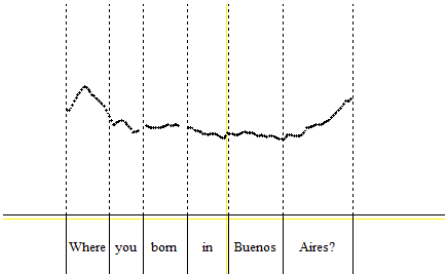


Figure 46 It specifies the pitch contour and the corresponding words of question 1 produced by participant 4

In participant 4 utterance, it happens the same as participant 2, the first word “were” is high while in the model audio, the pitch contour is lower. The pitch of the voice is high at the end as the standard model, but the highest pitch is in the beginning of the questions. There is a difference of 47,56 Hz more when it is compared to the model audio

Q2. Did you take English classes in Argentina?

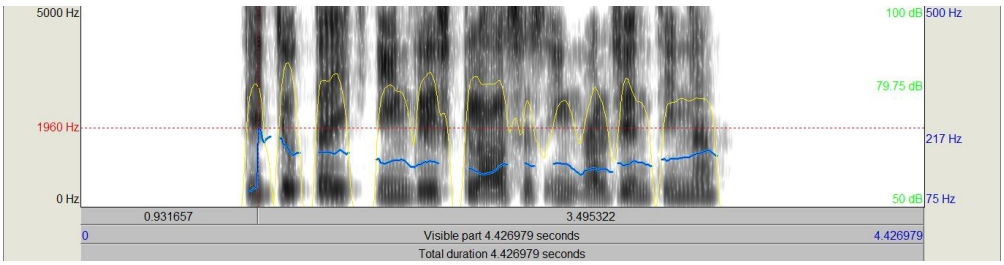


Figure 47 Spectrogram of the pitch contour in blue and the intensity in yellow of question2 produced by participant 4

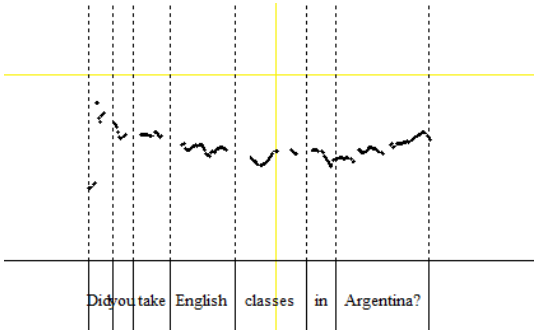


Figure 48 It specifies the pitch contour and the corresponding words of question 2 produced by participant 4

This participant rises the pitch of the voice at the very beginning, and at the end of the question, the pitch is low. As a consequence, the highest peak is not located at the end as in the model audio. In regards to the mean pitch is pretty higher.

R1. Could you tell me where the nearest ATM is?

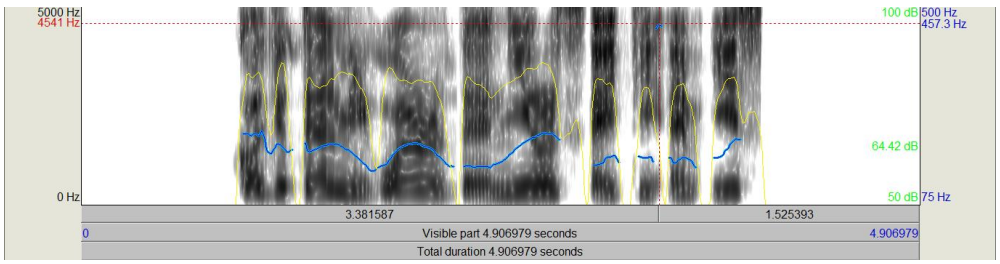


Figure 49 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 4

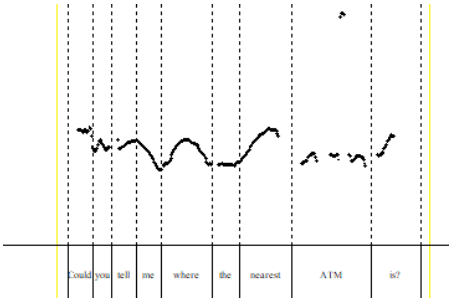


Figure 50 It specifies the pitch contour and the corresponding words of request 1 produced by participant 4

The mean pitch of this participant is lower than the model audio. The highest peaks are in the words "nearest, tell and where". The voice rises in the end of the request.

R2. Can you tell me how often the buses run?

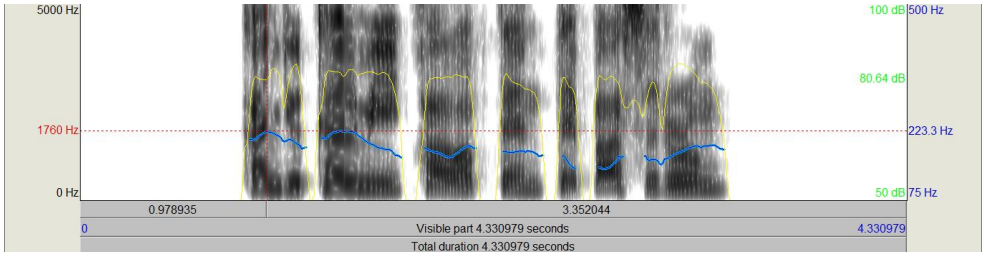


Figure 51 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 4

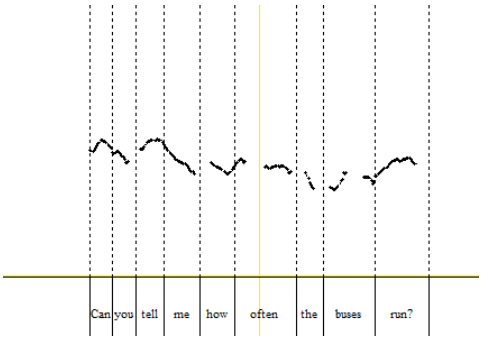


Figure 52 It shows the pitch contour and the corresponding words of request 1 produced by participant 4

The mean pitch is 186.42 Hz, it means that the frequency is lower than the model audio. The highest peak of the voice is located in the word "tell". In the model, the highest peak is in the end.

Participant 5

Q1. Were you born in Argentina?

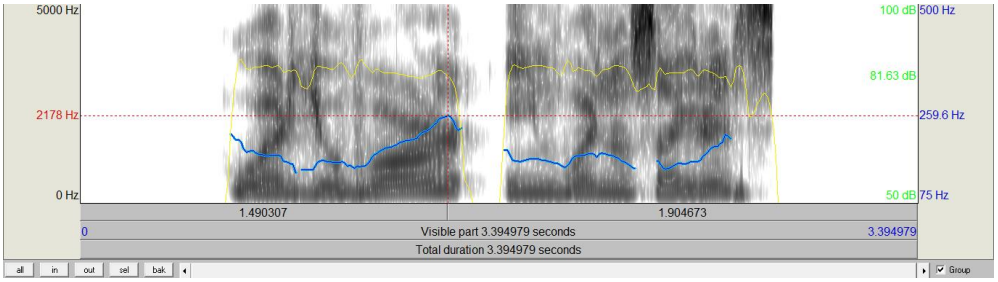


Figure 53 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 5

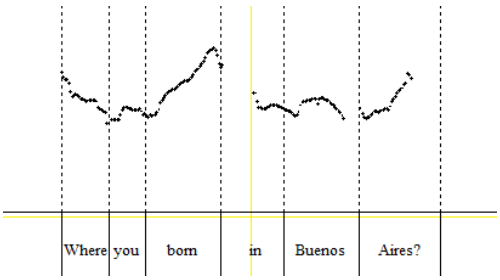


Figure 54 It specifies the pitch contour and the corresponding words of question 1 produced by participant 5

In this case, the participant stars rising the voice, so the first peak is higher than the model audio. The voice is less high in the end, when the highest peak should be located at the end. In regards to the mean pitch, the model has 122.95 Hz while this participant's mean pitch is 179.65 Hz. It's a little higher than the model.

Q2. Did you take English classes in Argentina?

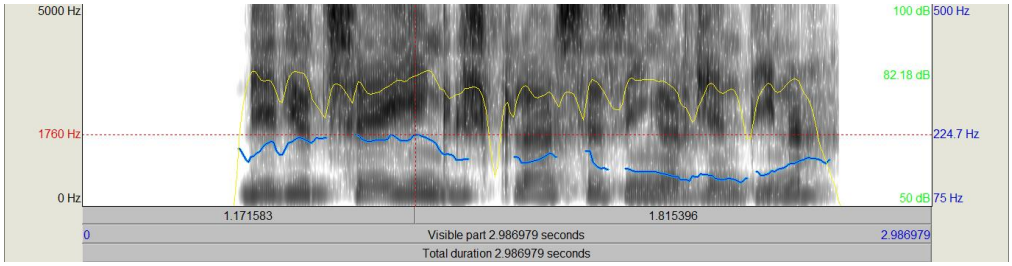


Figure 55 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant 5

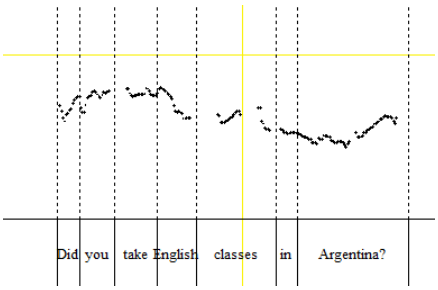


Figure 56 It shows the pitch contour and the corresponding words of question 2 produced by participant 5

The pitch is high in the words "you, take and the first syllable of the word "English". The highest peak is in the first syllable of the word "English". However, in the model audio, the voice rises at the end. In regards to the mean pitch, his frequency is higher than the model audio.

R1. Could you tell me where the nearest ATM is?

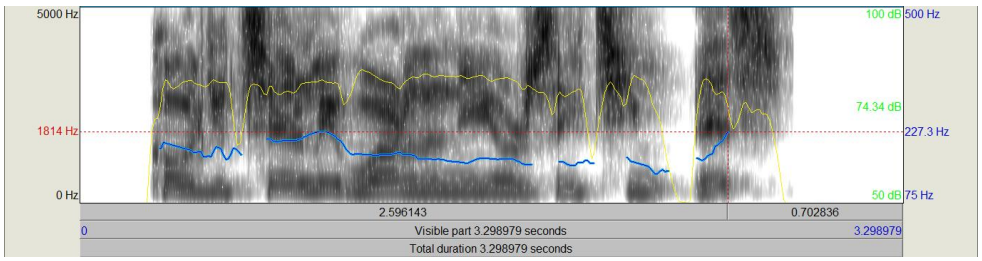


Figure 57 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 5

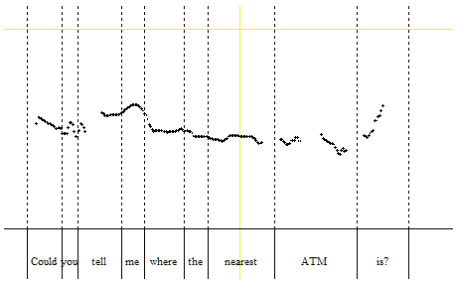


Figure 58 It shows the pitch contour and the corresponding words of request 1 produced by participant 5

It can be seen that the word "you" is not pronounced clearly. The voice is high in the beginning and the end which shows a similarity with the model audio. In regards to the pitch of the voice, it is still lower than the model audio.

R2. Can you tell me how often the buses run?

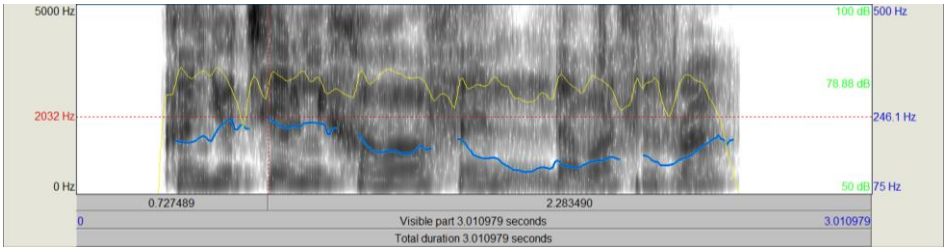


Figure 59 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 5

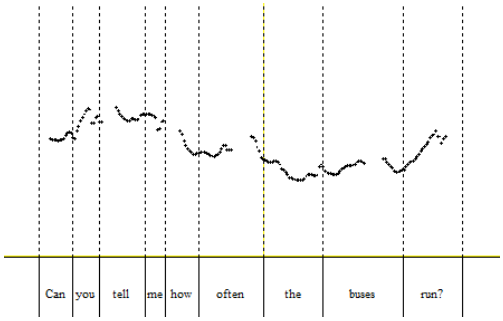


Figure 60 It shows the pitch contour and the corresponding words of request 2 produced by participant 5

The voice is stresses in the words "you and tell". The last word is not stressed at all as it can be seen in the model audio. The mean pitch is still lower than the model audio.

Participant 6

Q. Were you born in Buenos Aires?

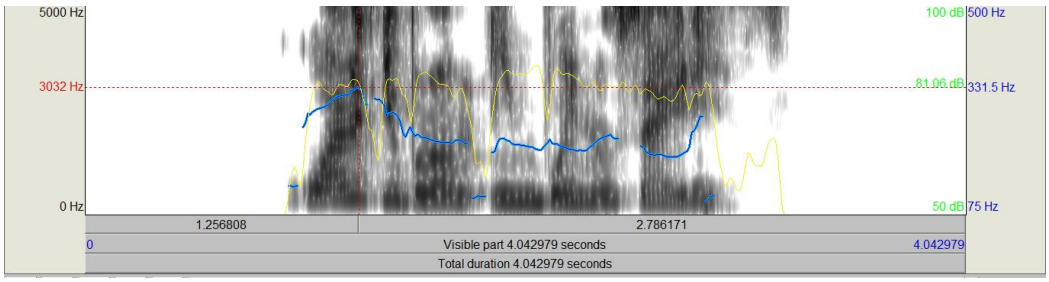


Figure 61 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 6

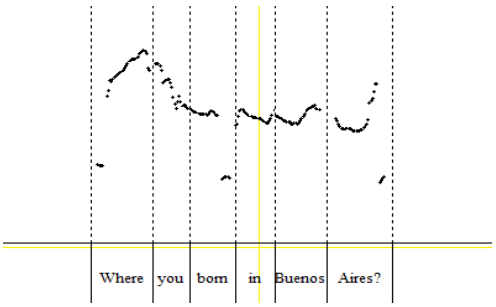


Figure 62 It specifies the pitch contour and the corresponding words of question 1 produced by participant 6

The highest peak of the voice is located in the last syllable of the word “were” while in the model, the highest peak is located at the end. As it can be seen in the spectrogram, it differs from the model audio because the mean pitch is 22,78Hz, which is pretty higher than the mean pitch of the model.

Q2. Did you take English classes in Argentina?

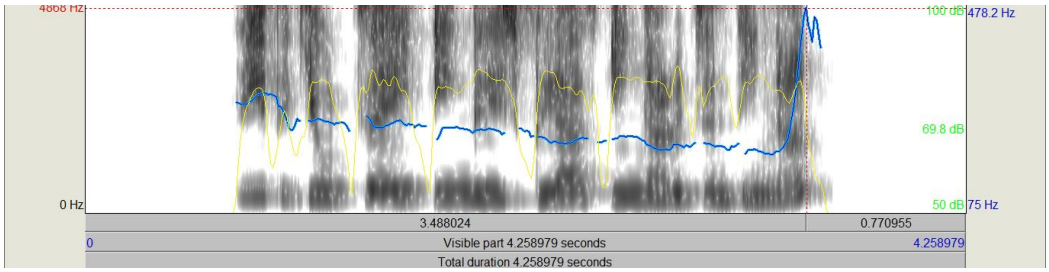


Figure 63 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant 6

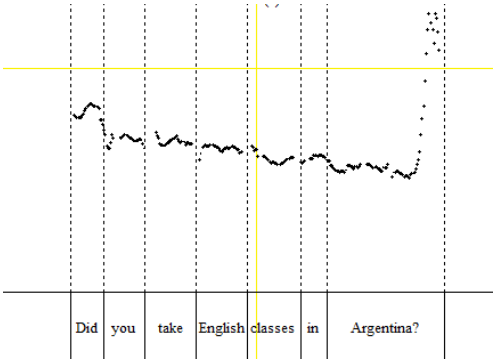


Figure 64 It specifies the pitch contour and the corresponding words of question 2 produced by participant 6

There are not the peaks that the model audio presents. The voice rises at the beginning, but the voice falls in the middle of the question. It can also be seen that the voice rises at the end, but the height is extremely high, this is the reason why the mean pitch is higher than the audio model.

R1. Could you tell me where the nearest ATM is?

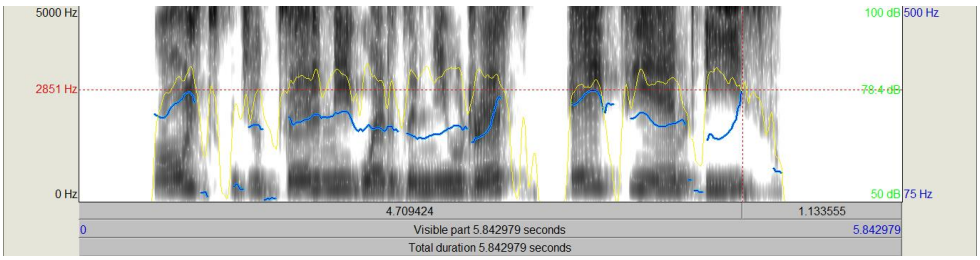


Figure 65 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 6

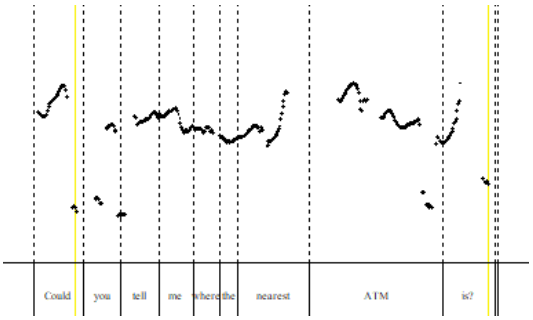


Figure 66 It shows the pitch contour and the corresponding words of request 1 produced by participant 6

The mean pitch is higher than the model, there are some intonation problems that can be seen. The voice constantly falls which means that the intonation is unstable. There are many rising and fallings in parts that shouldn't be pronounced in that way.

R2. Can you tell me how often the buses run?

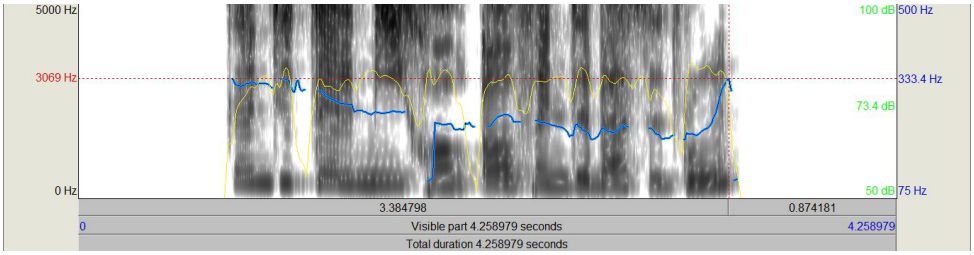


Figure 67 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 6

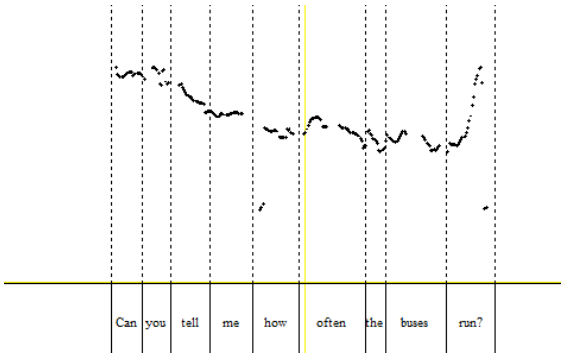


Figure 68 It shows the pitch contour and the corresponding words of request 2 produced by participant 6

The mean pitch is higher than the model audio. The voice rises in the end as in the model audio. However, the pitch in the beginning is higher than pitch in the end.

Participant 7

Q1. Were you born in Buenos Aires?

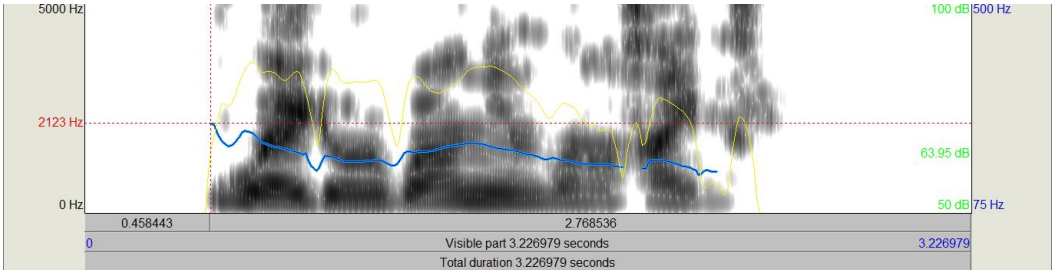


Figure 69 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 7

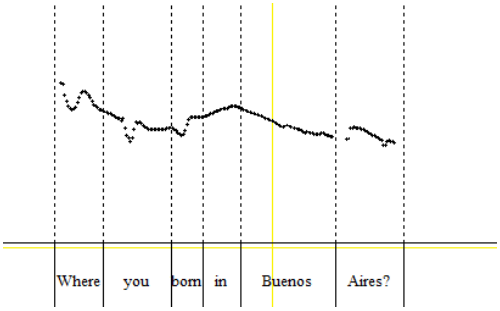


Figure 70 It specifies the pitch contour and the corresponding words of question 1 produced by participant 7

The pitch of the voice descends and the highest peaks are in the beginning of the question. The mean pitch is still higher than the model. And the pitch contour seems to be different from the model. The voice is low at the end and it should be stressed.

Q2. Did you take English classes in Argentina?

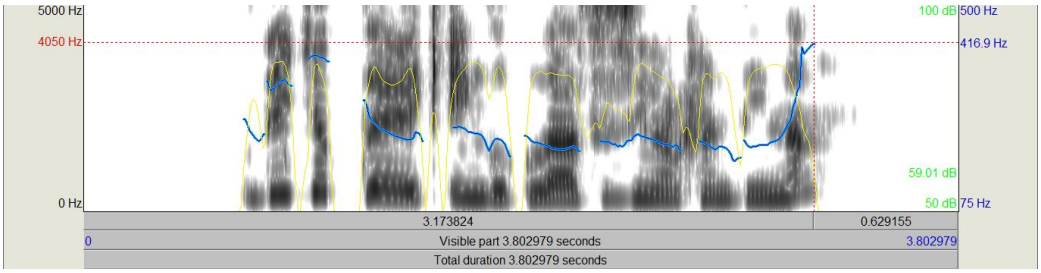


Figure 71 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant 7

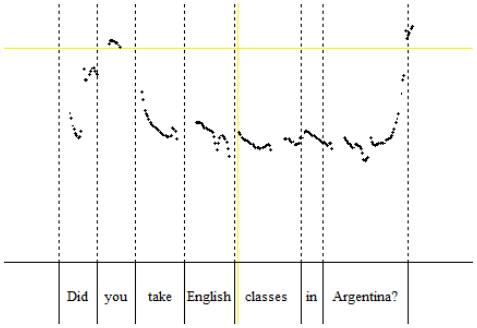


Figure 72 It shows the pitch contour and the corresponding words of question 2 produced by participant 7

The participant rises the pitch at the end, and the highest peak occurs in the end as the model audio. However, the level of frequency in the word “you” is higher. As a consequence, the mean pitch (243.12 Hz) is higher than the model pitch (144.50 Hz)

R1. Could you tell me where the nearest ATM is?

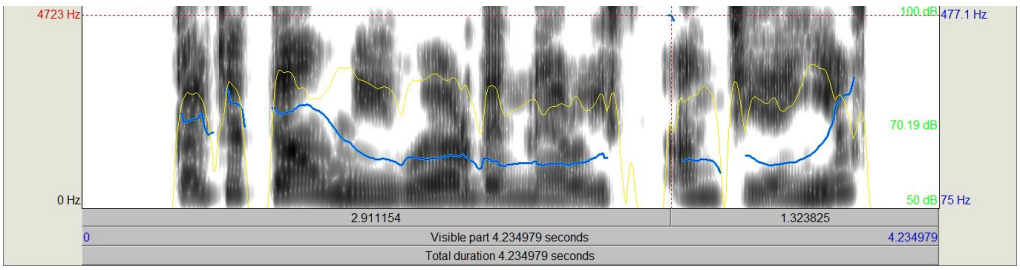


Figure 73 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 7

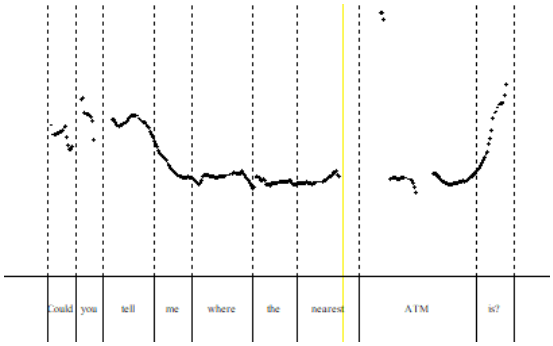


Figure 74 It shows the pitch contour and the corresponding words of request 1 produced by participant 7

The first words “could and you” are not intelligible, the contour line is not clearly drawn. There are some peaks that should not be there as in the word “ATM”. However, the voice rises at the end as in the sample. The mean pitch is lower than the model audio.

R2. Can you tell me how often the buses run?

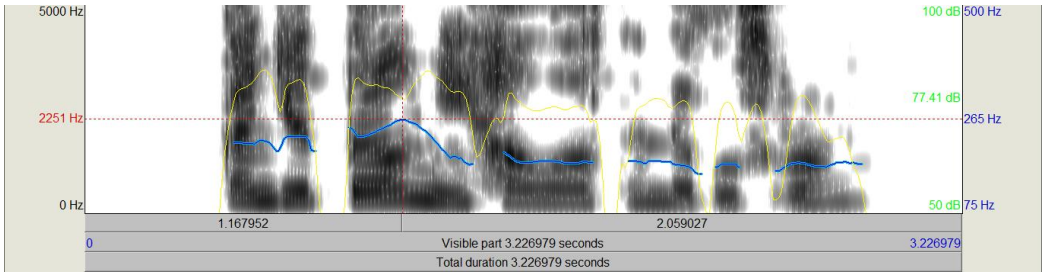


Figure 75 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 7

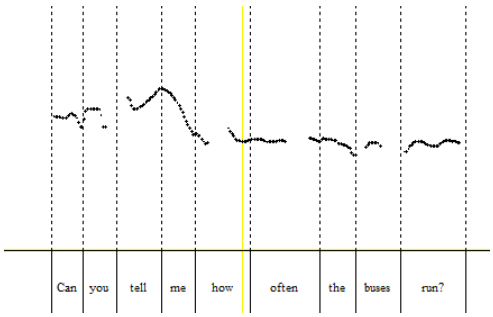


Figure 76 It shows the pitch contour and the corresponding words of request 1 produced by participant 7

The voice does not rise in the beginning, the highest peak is the word “me”, a similar pattern occurs in the pitch contour of the model audio. However, the pitch does not rise at the end of the question as it happens in the model audio. The mean pitch is lower than the pitch of the native speaker.

Participant 8

Q1. Were you born in Buenos Aires?

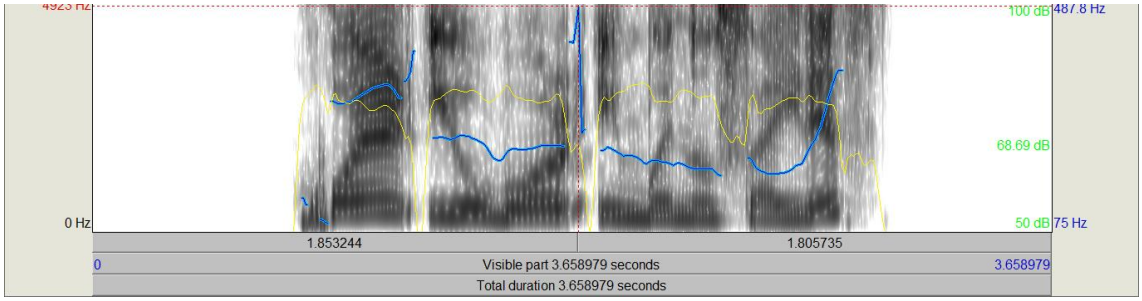


Figure 77 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 8

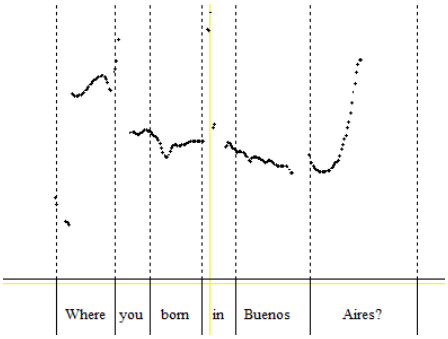


Figure 78 It specifies the pitch contour and the corresponding words of question 1 produced by participant 8

Participant 8 also seems to get confused between "when", the WHQ and "were" the past of verb to be. The pitch is higher, and the highest peak is in the preposition "in" that should not be stresses because it does not represent a significant word in the question. In regards to the mean pitch, it is pretty higher than the audio model, actually the maximum is 510,29 Hz while in the model the maximum is 207,10 Hz.

Q2. Did you take English classes in Argentina?

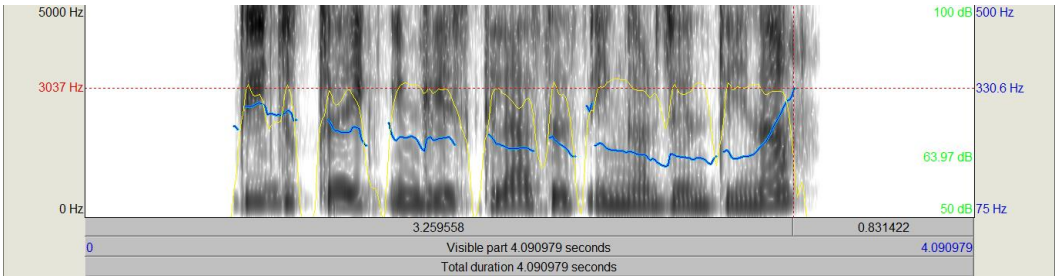


Figure 79 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant8

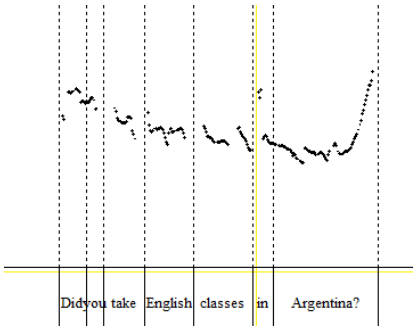


Figure 80 It shows the pitch contour and the corresponding words of question 2 produced by participant 8

This participant starts rising the pith and then it falls, in the sample, it can be seen that there should be some peaks in the words. However, the voice rises at the end which is similar to a native speaker. Indeed, the highest pitch should be at the end. The mean pitch is higher that the native's one.

R1. Could you tell me where the nearest ATM is?

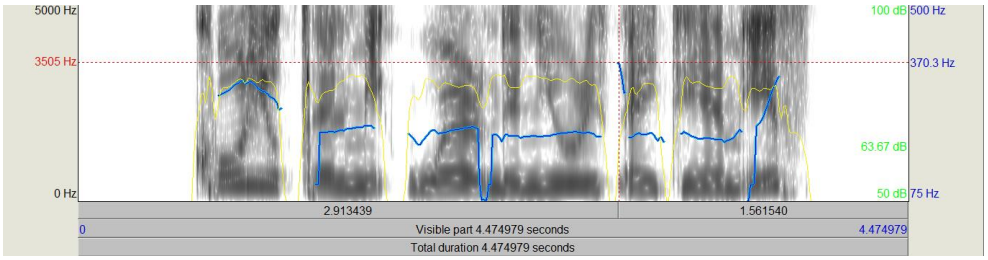


Figure 81 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 8

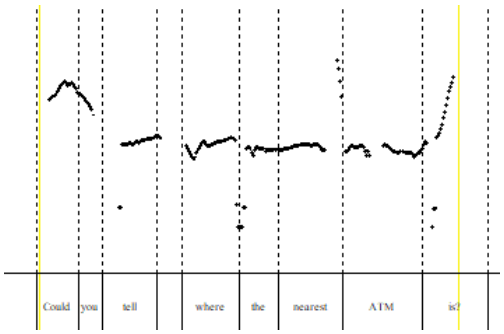


Figure 82 It shows the pitch contour and the corresponding words of request 1 produced by participant 8

The mean pitch is 231.39b Hz which is higher than the model audio. There are some low sounds that should not be produced. However, the voice rises at the end.

R2. Can you tell me how often the buses run?

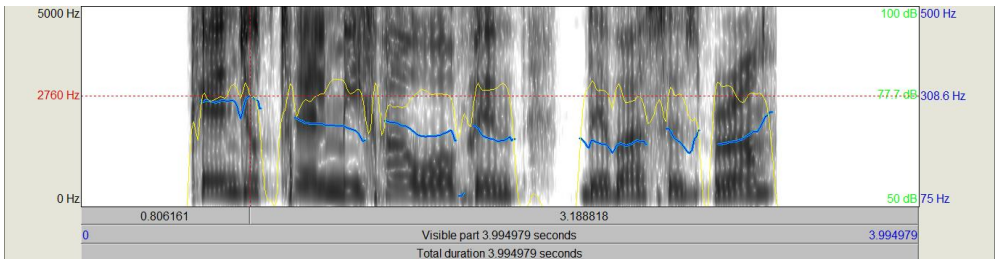


Figure 83 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 8

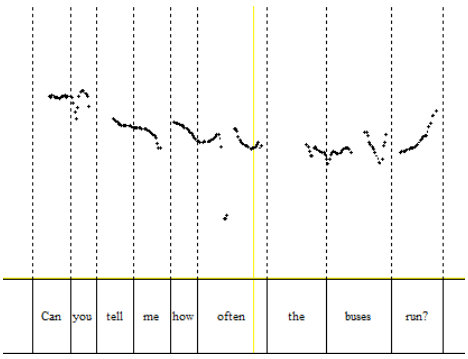


Figure 84 It shows the pitch contour and the corresponding words of request 2 produced by participant 8

In regards to the mean pitch, the frequency is higher than the pitch of the native speaker. The pitch of the voice rises, but it is not as high as the model audio.

Participant 9

Q1. Were you born in Buenos Aires?

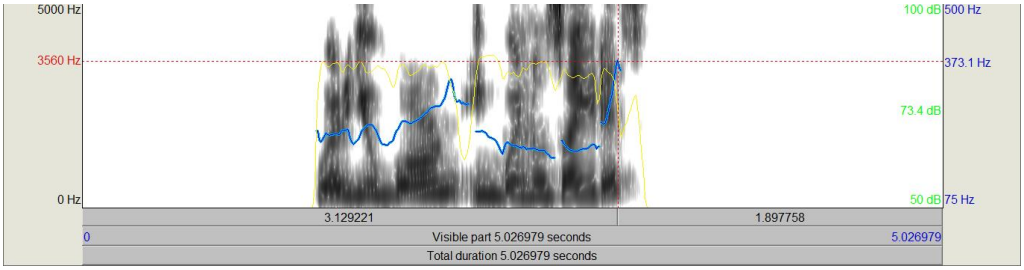


Figure 85 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 9

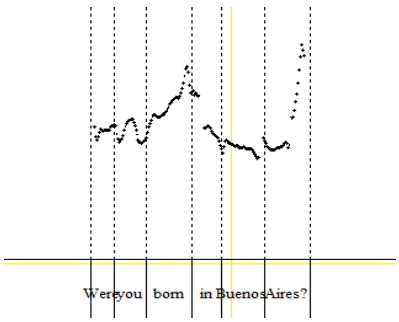


Figure 86 It specifies the pitch contour and the corresponding words of question 1 produced by participant 9

The highest peak of the voice is located at the end of the question, the pitch contour is similar to the model, and the voice rises at the end of the word “born” as the native speaker pattern. The mean pitch is high but it is needed to be taken into consideration the difference of frequency between men and women.

Q2. Did you take English classes in Argentina?

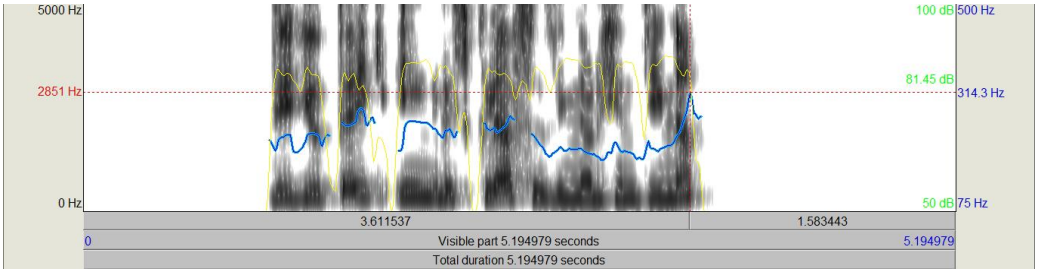


Figure 87 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant 9

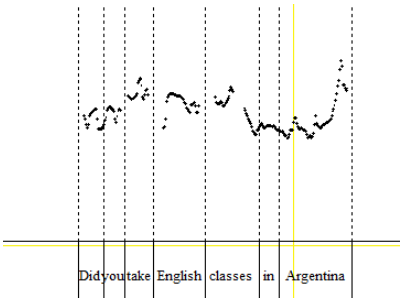


Figure 88 It shows the pitch contour and the corresponding words of question 2 produced by participant 9

It can be seen that the voice is not clear, as a consequence the pitch contour tends to vanish. However, the highest peak is at the end as in the model audio. The mean pitch is higher.

R1. Could you tell me where the nearest ATM is?

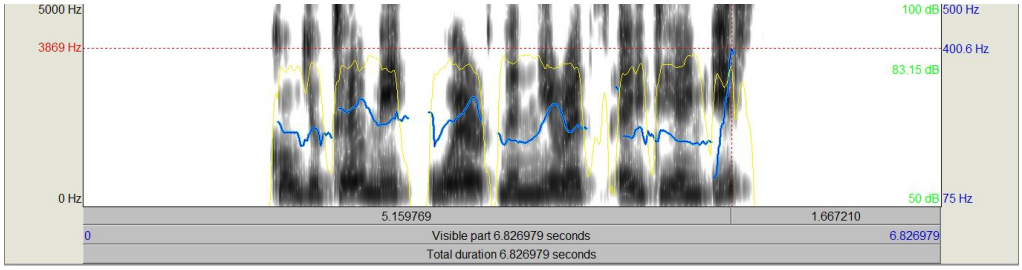


Figure 89 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 9

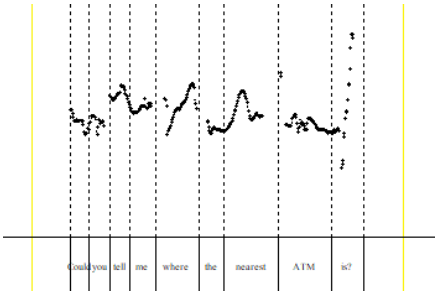


Figure 90 It shows the pitch contour and the corresponding words of request 1 produced by participant 9

The speech is pronounced too fast, as a consequence the words are not understood. This participant seems to have problems with pronunciation. The mean pitch is higher than the model audio.

R2. Can you tell me how often the buses run?

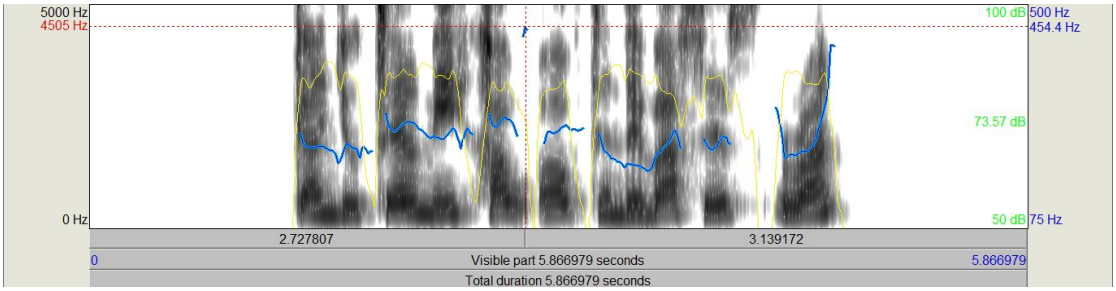


Figure 91 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 9

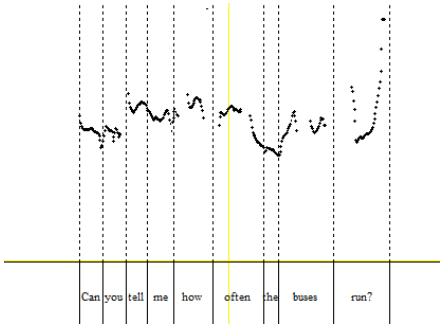


Figure 92 It shows the pitch contour and the corresponding words of request 2 produced by participant 9

The mean pitch is higher than the model. The intonation is unstable, it raises and falls too fast. However, the pitch of the voice rises at the end of the request.

Participant 10

Q1. Were you born in Buenos Aires?

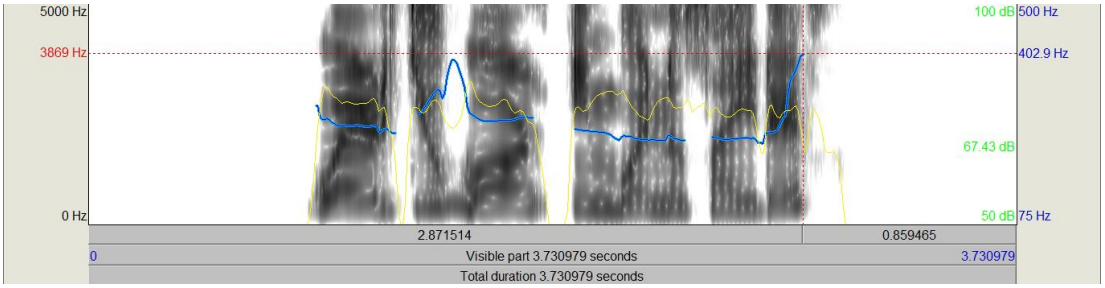


Figure 93 Spectrogram of the pitch contour in blue and the intensity in yellow of question 1 produced by participant 10

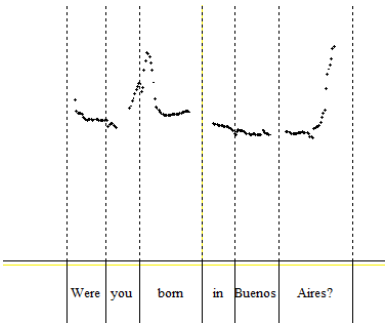


Figure 94 It specifies the pitch contour and the corresponding words of question 1 produced by participant 10

The highest peak is located at the beginning of the word born as in the model, however, the falling of the voice is different, it seems not to be natural. The voice rises at the end and the meant pitch is higher than the model audio.

Q2. Did you take English classes in Argentina?

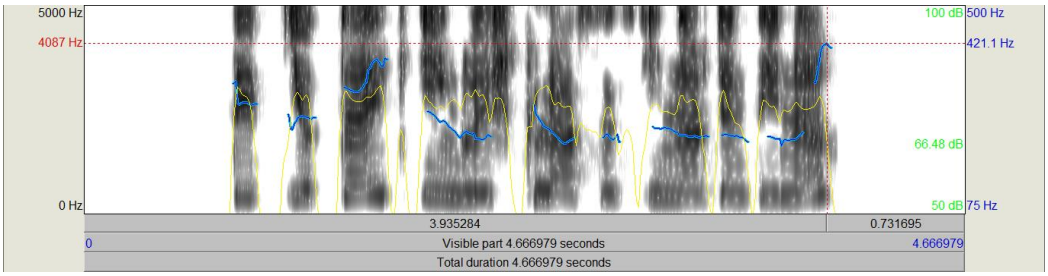


Figure 95 Spectrogram of the pitch contour in blue and the intensity in yellow of question 2 produced by participant 10

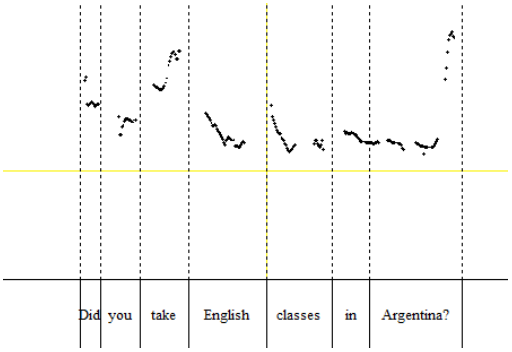


Figure 96 It shows the pitch contour and the corresponding words of question 2 produced by participant 10

The pitch contour is similar to the model audio. The highest peak is at the end of the question as the model audio. The mean pitch is higher.

R1. Could you tell me where the nearest ATM is?

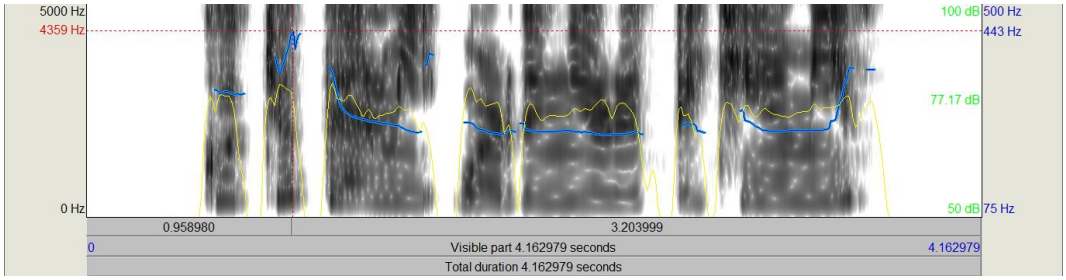


Figure 97 Spectrogram of the pitch contour in blue and the intensity in yellow of request 1 produced by participant 10

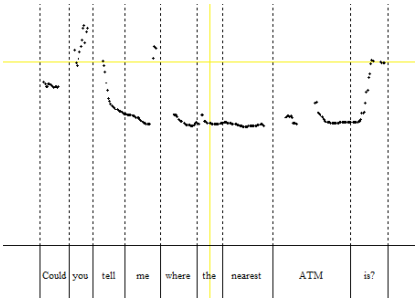


Figure 98 It shows the pitch contour and the corresponding words of request 1 produced by participant 10

The mean pitch of the voice is pretty high compared to the model audio. The highest peak is in the word "you". However, the voice rises at the end of the request.

R2. Can you tell me how often the buses run?

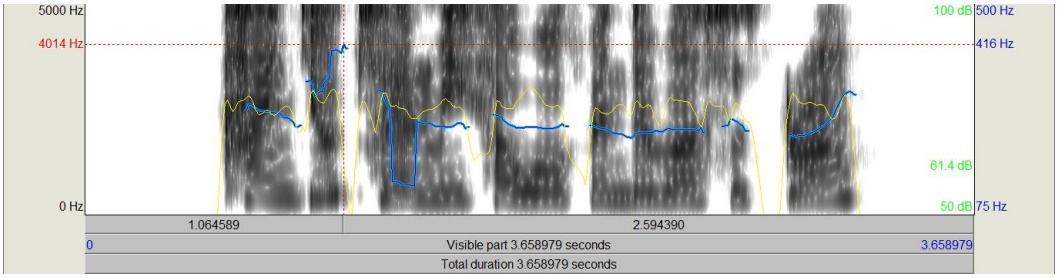


Figure 99 Spectrogram of the pitch contour in blue and the intensity in yellow of request 2 produced by participant 10

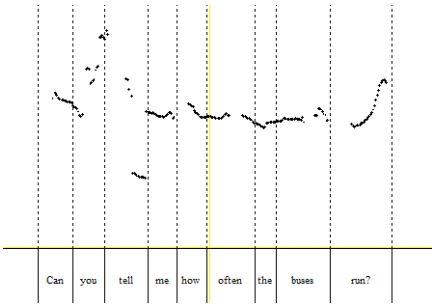


Figure 100 It shows the pitch contour and the corresponding words of request 2 produced by participant 10

The mean pitch is higher than the model audio. The voice falls too much in the word "tell" and the highest peak is located in the word "you". At the end, the voice rises as in the model audio.