A PROSODIC ANALYSIS OF [WH-QUESTIONS] AND COMMANDS: *CASE OF TEMOUCHENT PARENTAL CONVERSATIONAL EXCHANGE*

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ABSTRACT

The study of speech sounds exists as long as man is interested in language. The foremost question that phonologists attempted attentively to answer is how sounds are collected to successfully transmit the intentional meaning. The current study is an original work that focuses on the auto-segmental level of Temouchent dialect as a variety of Algerian Arabic. The interest of the current study is to emphasize the prosodic view, which tends to be complex. The researchers predominantly examine one of the most prominent prosodic features, notably 'intonation'. They tried mainly to highlight the nature of Temouchent [Wh-question] and commands' intonation within parental conversational exchange, and identify the common types of intonation used to testify its effectiveness of intonation. The results revealed through the spectrographic analysis that there is H+L% rising-falling intonation within temouchent [Wh-question]; however a rising one H+H in commands.

Keywords: Intonation, parental conversational exchange, prosodic view, spectrographic analysis. Temouchent Arabic dialect.

INTRODUCTION

The broad interest of this paper is primarily to identify the Temouchent Arabic dialect prosody, and describe some of its aspects as well. Furthermore, this paper enumerates the various approaches, methods and research procedures that are applied while checking up on the Temouchent Arabic dialect prosody. As dealing with prosodic analysis, the poly-systematic principle (Firth: 1948) quoted in (Bichr, 2000: 499) is incorporated along with this study. Prosody, actually, is perceived as a super tier of any spoken language which transcends the segments and goes far beyond their confines.

Temouchent Prosodic Features: *Role and Impact*

Any language can possess syllables that are identified in terms of consonants and vowels (Rogers, 2000: 88). Temouchent Arabic dialect, like MSA, encompasses a number of syllables. There are various and distinctive categories of syllables in Temouchent Arabic dialect, counting the two different segments that construct a syllable. Some of them are frequent while the others are seldom used.

Some Temouchent Arabic dialect Syllable Types:
- CV   [ddi] 'take (imper), /læ/ 'no' (a simple answer) or:
- CL   /lɑ:/ 'no' (surprise or strong warning)
- VCV   /aya/ 'carry on', /ana/ 'me', /umma/ 'people', /ila/ 'if'
- CVC   /rab/ 'God', /hab/, /lem/ 'gather' or :
- CLC   /nɑ:s/ 'people', /ʈi:r/ 'fly or go away', /lu :m/ 'blame'

Temouchent Arabic dialect is said to be a stressed accent, it is similar to stress languages such as : *English, German, Spanish*, etc. Within RP, for instance, a word class adjusts merely by

shifting the stress position: ′**re**cord (n) re′**co**rd (v). In Temouchent Arabic dialect one may pick out these examples:

/**ʔa** (ə)ʃahom 'their dinner'
ʔa/ʃ**a**hom 'he/she invited them to dinner'
ba/rka 'stop'
ba (ə)/**rka** 'a lake'
/**la**seg (q) 'adhesive'
la/**seg** (q) (v) 'stick on' (imper)

Temouchent Arabic dialect is likely presumed to share with Arabic its prosody. For instance: '*raha tebki' 'she is crying'* can be used with a falling-rising tone when her crying is common both for the speaker and listener 'raha tebki ?' and it can be described as:

A specific statement   //   raha teBKI //   A falling- rising tone
Or a [Yes/no question]   //   RAha teBKI ?//   A rising tone
As a reply to [Wh-question] //   RAha TEbki //   A falling tone

In Arabic tones as well as pitch are represented by three equal horizontal lines over each other. The rising, neutral, and falling tones are marked by a dash (-), Crystal (1995: 248); on the other hand, used only two parallel lines to show the direction of pitch and the movement of tones. In Arabic, the (.) indicates the toneless or the neutral syllable. The following utterance is selected from Temouchent Arabic dialect to represent types of intonation:

-    //maMA XAlini NExreʒ/ hambu:k//   'mom let me go out, please'

∕ ma ma   khalini nekhrej hambouk ∕

This utterance is a request in which various tones are used. Those different tones function distinctively. While listening to the Temouchenty community, one may notice that Temouchent Arabic dialect intonation varies vigorously within an utterance. As a lucid example, vegetable and fish sellers who often use a rising tone in order to attract the attention of the purchasers.

Research Questions

The current case study attempts to answer two major research questions:
   1- *How can prosodic features influence the meaning of an utterance?*
   2- *To which extent rising and falling intonation of Temouchent Arabic dialect may adjust the meaning of an utterance?*
Several questions are adhered to the second question among which:
   1- *Whether the intonation of commands is as equal as that of Wh-questions in Temouchent utterances?*
   2- *What differences and similarities could exist between them?*

Research Approaches and Methods

This research work is regarded as a phonological study of speech, namely Temouchent Arabic as a case survey cross a case analysis. So as to find out the basic characteristics of Temouchent mainly at the auto-segmental level, there must be a number of approaches as

well as methods to abide by. There are two main approaches on which this study is based. These approaches are embodied in the quantitative and the qualitative attitudes. The quantitative approach is grounded on a statistical analysis; it deals with the process of interpreting numerical data. Qualitative approach; alternatively, seeks out the '*why*' not the '*how*'. The qualitative approach is exploited, namely in this survey, so as to obtain an insight into the similar or different types of tones within two types of utterances.

This may indicate that it is customary to begin any research work with the qualitative phase then join it to quantitative one. This paper is also based on operating the theory of prosody into practice, i.e., to detect whether the Temouchent Arabic dialect intonation goes along with the universal prosodic principles or it displays other features. For instance, using falling tones within [wh- questions], or splitting the syllable structure accurately by means of respecting the three basic universal principles for ascertaining the syllable structure. The practical framework; on the other hand, has to do with theory testing in a given situation (prosody of T. Ar) denpending on the conservative (Gumperz, 1982), descriptive conceptual analytic, and finally the comparative methods. It is worth laying an emphasis on the fact that the second chapter, within this investigation, comprises a practical surface that requires specialized experimental materials.

Research Tools

Various adjustable instruments have been used within the present study for analyzing, comparing and measuring the degree of evidence of dynamic phenomena within Temouchent Arabic. At the start, the use of phonetic transcription or analysis (Chao, 1934), (Harris, 1951), (Chomsky, 1957/1964) for portraying the pronunciation of some Temouchent sounds or such processes as assimilation are employing either as slant or square brackets. This study is characterized by the insertion of prosodic transcription by making use of different shapes of lines, tree diagrams for dissecting syllable structures, tone units and so on. The third research instrument is the recording, as an audio tool, to record the parental conversations and observe the way fathers speak when they are interacting with their children. The last tool is called '*spectrogram*'. It is an automatic optimizer which detects the original F0, it is also used to uncover the nature of Temouchent Arabic intonation through the acoustic realization of tones and pitch within two categories of utterances through the conversation of a selected corpus.

Data Collection and Procedures

In this study, the researchers fundamentally examine one of the most prominent prosodic features which is '*intonation*' across the spoken variety of Temouchent; for the purpose of identifying the common types of intonation used in the parental conversational exchange, testifying chiefly the nature of tones within two intonation types. In effect, the chosen corpus consists of a number of recorded utterances among which eight pairs are selected. Eight utterances will be analyzed, each couple of utterances is identical; however, some are marked with a question mark so as to point out the interrogative intonation; while, four of them represent commands. The researchers look in depth at the utterances making use of a prosodic phonological analysis since they pick out the utterances from contextual conversations. The Temouchent conversations are recorded to build the corpus of this investigation. The conversations are said to be spontaneous amongst homogeneous speaker groups. The experiment is applied on four native Temouchent families. The focus is mainly on the fathers' speech toward their sons (between10 and 15 years old).

RESULTS AND INTERPRETATIONS

The analysis is grounded on conceptual spectrographic analyses and acoustic methods. It attempts to supply a response to the central problematics. After the examination of data, it can be concluded that: The four recorded conversations are regarded as the basis on which the answer of the problematics is built. In an attempt to be as objective as possible, the Temouchent conversations have been analyzed as they have been actually performed. They have been also examined independently. In fact, the conversations' performers are: the four fathers who belong to an erudite class. The son; on the other hand, attend schools either intermediate or high schools. The four conversations' subject matter; in the main turns around education, learning, football. The four conversations took place at home. They were composed of various utterances, only two kinds of them were analyzed in order to detect their types of intonation and then compare them. In Temouchent Arabic there are four common sorts of questions: [*Wh-questions*], [*yes/no questions*], [*question tags*], [*negative/declarative statements using a specific intonation*]. Among these questions, the [Wh-questions] were chosen to be studied. In Temouchent Arabic [Wh-questions] are generally either monosyllabic or bisyllabic words. They usually begin with an interrogative pronoun such as:

'shawala' /ʃæwalə/, 'shawa'/ʃæwə/ or 'sha'/ʃa/ ⟶ what
'win'/wɪn/ ⟶ where
'ʕlah' /ʕlʌh/ ⟶ why
'shkoun' /ʃkuːn/ ⟶ who
'winta' /wɪnta/ ⟶ when
'kifah' /kɪfæh/ ⟶ how
'shħal' /ʃħæl/ ⟶ how many/much/long

Temouchent commands, like *Arabic, English, French* commands, are shaped by using the verb in the imperative. That is, verbs in commands, often initiate an utterance. For example:
'rouh' /ruːħ/ ⟶ go
'arwah' /ərwæħ/ ⟶ come
'shrob' /ʃrɒb/ ⟶ drink
'khrej' /xreʒ/ ⟶ go out

While listening to the recording, it has been perceived that the above categories of utterances are present; however, not as it is guessed. Only few of *wh-questions* and commands are picked up as the conversations are spontaneous. Evidence of this might be provided by the statistical analysis which offers the following numbers that can be summarized in the table below:

Table 1. *Recording's Statistics of Temouchenty Wh- questions and Commands*

Témouchenty Families	Commands	[Wh-questions]
The first family	03	00
The second family	02	03
The third family	02	04
The fourth family	02	03

To scrutinize the Temouchent intonation and its level of pitch, the selected utterances should be cited and then transcribed phonetically. Here are two utterances extracted from the first conversation:

Conversation 1:
- *Commands:*
-rouh /ruːħ/ 'go'
- ghsal wajhek / ʁsəl wəʒhek/ 'wash your face'
-khof /xɒf/ 'hurry up'
Conversation 2:
- *Wh-questions:*
-'Kisamouh?' /kɪsəmuːh/ 'what's his name?
-'shkoun houma' /ʃkuːn huːma/ 'who are they ?'
'werini nta wahd el-nass hna fi bladna hadi nejhou fel balloun?' /werɪnɪ nta wæħd ʔənnæs hna fɪ blædna hædɪ nəʒħuː fəl bæluːn/ 'show you me some people here in our country succeeded in playing football ?'. Interestingly, the researcher encounters this utterance which goes beyond the norms mentioned above to indicate a complex utterance level. The word 'werini', 'show me' in the previous utterance is not a word level. That is to say, it does not occur in isolation. If it is assumed that 'werini' arises as a word, it is then perceived as a command; whereas, the long utterance denotes that it is not. It is true that through the form one may assert that the utterance is a command ; however, the speaker used a particular type of intonation which has a higher phrase curve than the preceding utterances ; thus, the utterance can be recognized as 'who are those who succeeded in playing footaball ?'. Furthermore, the listener replies to the utterance as it is a [Wh-question]. (Listen to the recording).
- *Commands:*
- 'kemalhom' /kəmelhɒm/ 'finish them'
- 'hfad kraytek'/hfæd kræjtək/ 'learn your lessons'
Conversation 3:
- *Wh-questions:*
-'shhal raha saʕa?' /ʃħal ræha sæʕə/ 'What time is it?'
- 'shkoun, el-Barsa?' /ʃkuːn ʔəl bɑːrsa/ ' who, the Barsa ?'
-'shadarou ?' /ʃa dæruː/ 'What did they do?'
-'wirak ?' /wɪræk/ 'where are you?'
- *Commands:*
-'arwah' /ərwɑːħ/ 'come'
-'rouh' /ruːħ/ 'go'
Conversation 4:
- *Wh-questions:*
-'win kont' /wɪn kɒnt ?/ 'where have you been ?'
-'sha teshri ?' /ʃa teʃri ?/ 'buy what ?'
-'shhal shriteh' /ʃħæl ʃriːtəh/ 'how much did you buy it ?'
- *Command:*
-'ara sarf' /əra særf/ 'give me the change'
-'rouh jib leħlib lkhouk darwak' /ruːħ ʒɪb leħliːb lxuːk dærwek/ 'go to bring milk to your brother now'. The above utterances are said to be distinct. It is noted, through an acoustic analysis, that what makes the difference between them is more to do with tone use (variations).
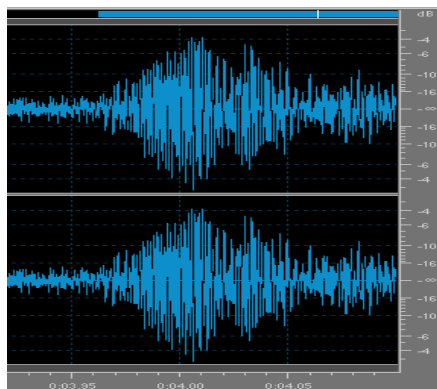
Spectrographic Analysis

In an attempt to establish the nature of tonal events occurring within Temouchent [Wh-questions] and commands, each utterance should be divided into several tones, and then these

tones should be kept to be shown at the spectrogram to determine the type of tones within those utterances.

Conversation 1:
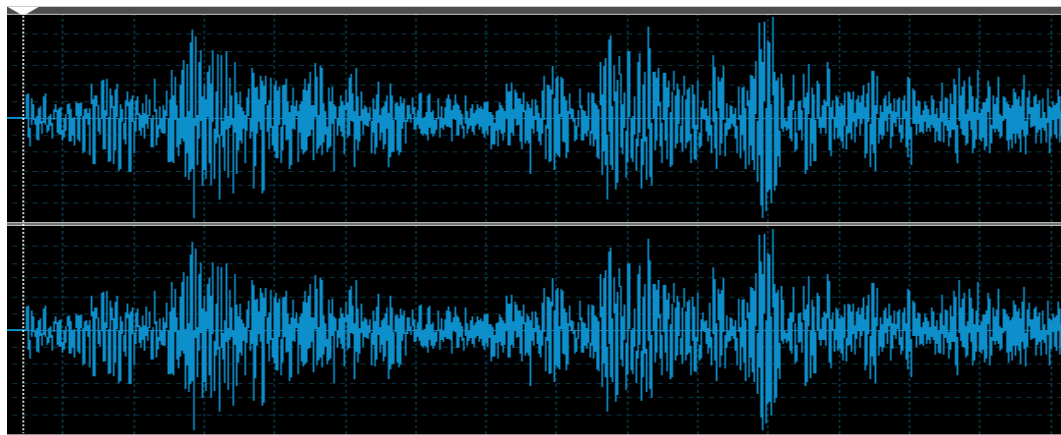
- *Command:*

'**Khof**' /xɒf/   'hurry up'

***Spectrogram 1**. A Representation of the Command 'Khof'. The piece that includes 'khof' has a greater*

amplitude, that is the sound automatically is louder.
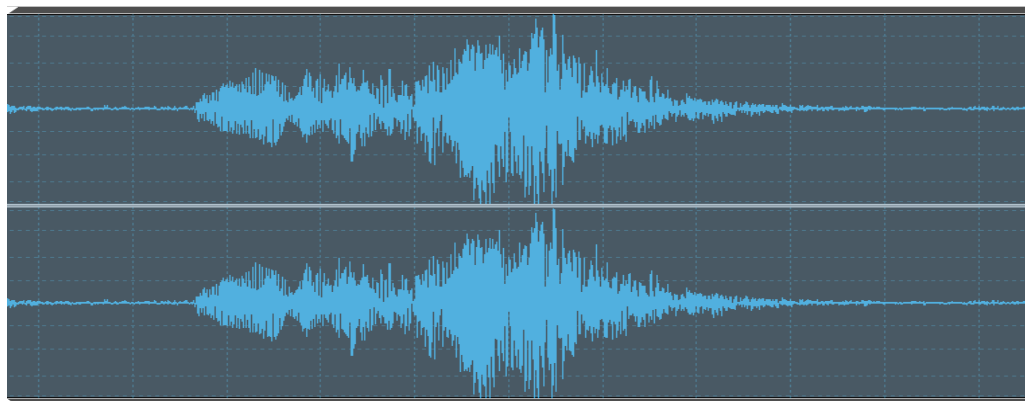
Conversation 2

- *Command:*

'**kamalhom** wa **hfad** kraytek' /kəmælhɒm w ħfæd kræjtək/   '**finish** them and **revise** your lessons.

***Spectrogram2**.An Illustration of the Tone of 'Kemelhom' and 'Hfad'*

Conversation 3:

- *Command:*

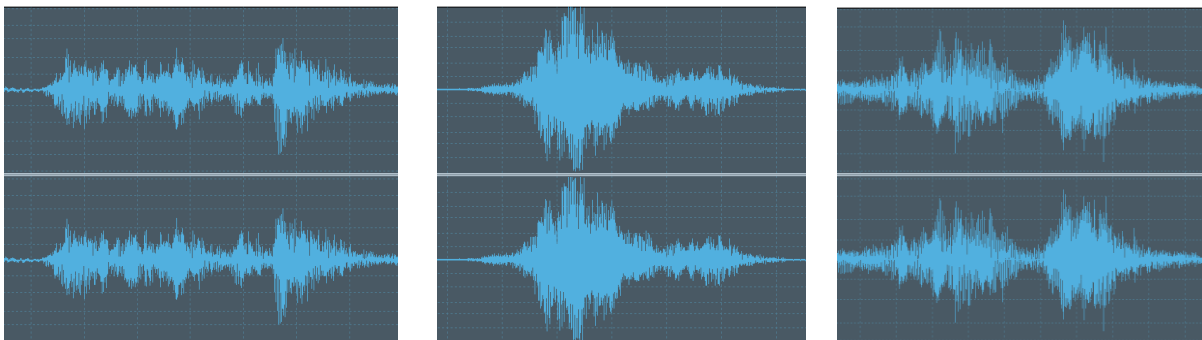
***Spectrogram 3**. An Imperative Utterance 'Arwah'*
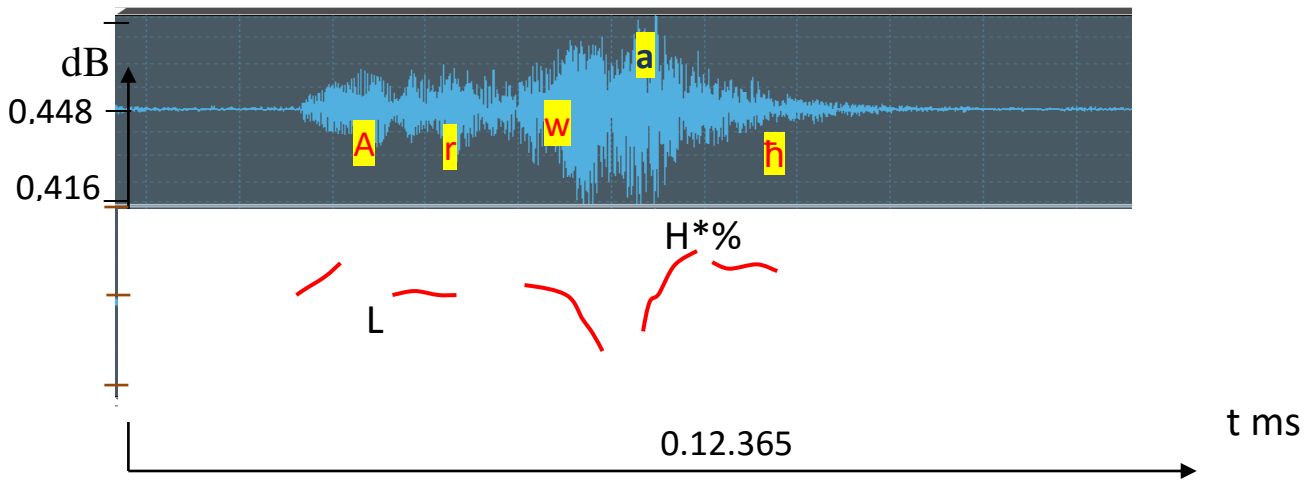
Graph1. *Shapes of the Pitch of the word 'Arwah'*

It is clear that the voice of the father rises suddenly from the lower bound of his frequency to the limit of the upper bound. 'a' tends to be the intensity of this word (here about 215 Hz). The tone within this word can be represented as H+H*
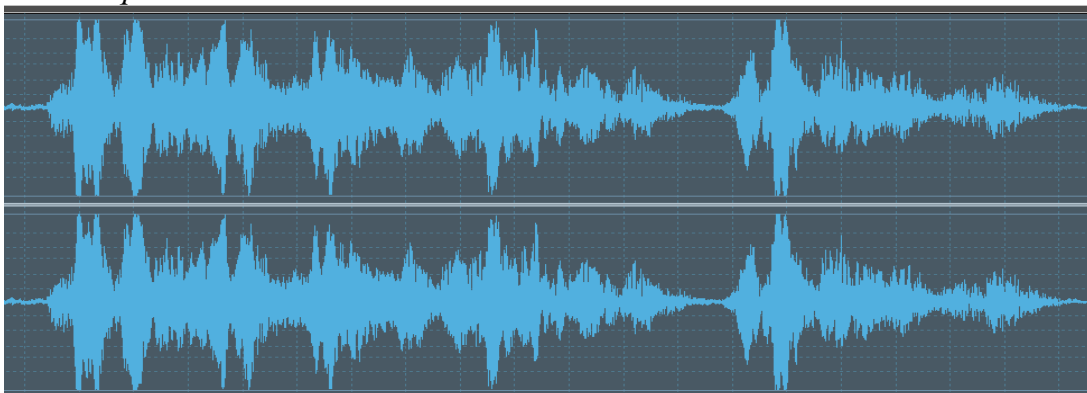
Conversation 4:

- *Command:*

Spectrogram 4. *A Repetitive Command of 'Rouh'*

The second Command is said to be the prominent one as it is higher than the others.
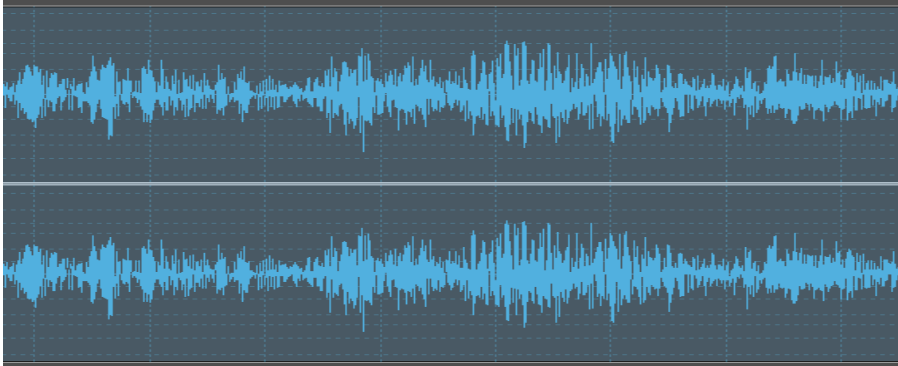
Conversation 2:

- *Wh-question*

Spectrogram 6. *A Representation of 'Werini Wahd Anass Hna fi bladna nejħou fel ballon ?'*

Tones are harmonically complex. The spectrogram shows that there are various frequencies and different amplitudes. According to Rogers (2000) this is referred to as complex repetitive waves since it is not a simple sine wave.
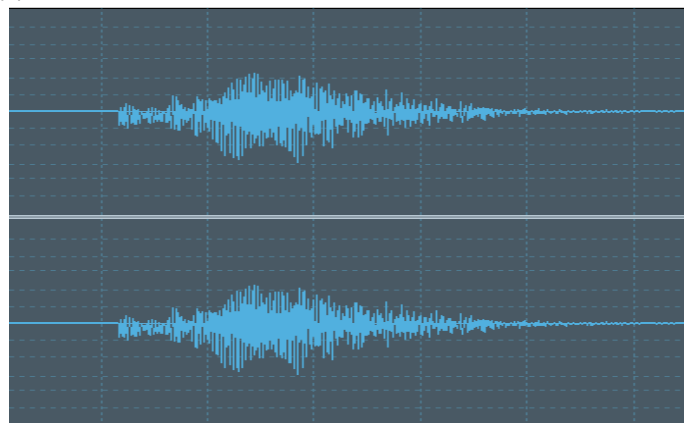
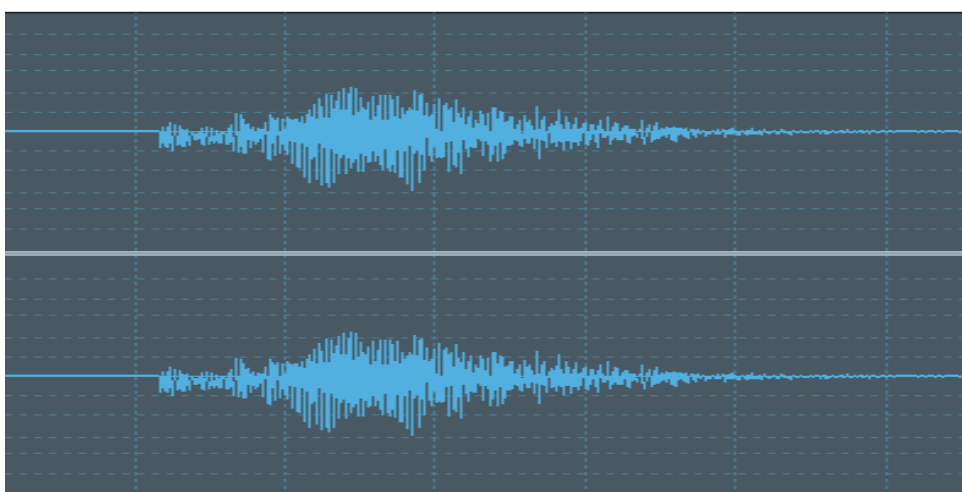**Conversation 3:**

- *Wh-question:*

Spectrogram7. *A Representation of the Utterance 'Shħal Raha Saʕa ?*

Conversation3:

- *Wh-question :*

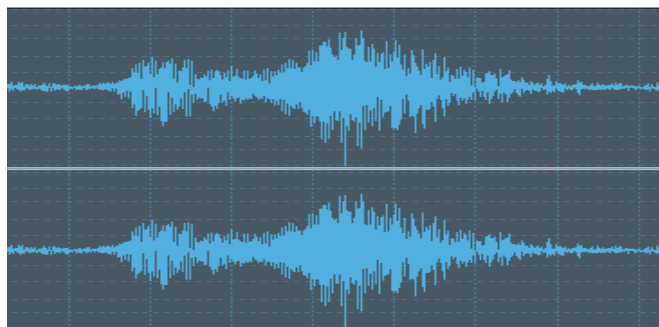**Spectrogram 8.** *AnIllustration of the utterance 'Win Kont'*

Graph 2. *A Demonstration of the Pitch Level of the Utterance 'Win Kont ?'*

Conversation 4:

- *Wh-question:*

Spectrogram 9. *An Interrogative Temouchenty Uterrance 'Sha Teshri ?' having a falling Tail*

RESULTS AND INTERPRETATIONS

Through the current spectrographic analyses there seems to be a complex interaction between a tone and intonation, especially at the level of an utterance. It is apparently noticed that all commands are said with a high rising tones. In prosody, this is referred to as HRT or HRI which is regarded as one characteristic of speech (Ching: 1982). It is labeled as '*uptalk*' or '*upspeak*' and characterized by a high frequency (Ladd: 1996) that is, the rising tone followed the accented syllable of the IP at a very high tier, it often occurs after a low pitch (Warren: 2005). HRT is mostly used among leaders, assertive, and authoritative speakers (McLemore: 1991, Cheng et al: 2005 and Warren: 2005).

HRI is seemed to be one of the features of Temouchent commands; as an example, the HRI in '*Arwah*' '*come here*'. It is only a short step from the belief that HPI serves in transmitting the intended meaning within a conversation; but, a more important step is that as the fathers use this kind of intonation within their commands, it is usually followed by a pause which disheartens an interruption and indicates that they have not finished their speech. This was the same result of the previous work of Allen (1990) and Guy et al (1986). Additionally, One of the foremost characteristics of Temouchent command in the parental conversations, is that parents tend to repeat their commands more than one time, for example, the utterance: '*rou rou regliha, regliha, regliha*' '*go and set up the image*' in conversation 3, and others such as: conversations 1&4.

The main reason behind such repetition is to accentuate a command. This phenomenon affects the pitch level of an utterance. The pitch level differs significantly as the word is replicated. As it has been mentioned earlier, commands get a high rising tone H*; however, the repeated command sounds lower H- than the preceding one. Yet, what happens in conversation four (spectrogram 3.7) is very interesting. As the father was interacting with his son, he used the verb '*rouħ*' '*go*' three times with a high pitch. The second '*rouħ*' is said to be the highest one. The reason for that use is that the son interrupted his father and refused his command as a result, he increased the level of pitch higher than the previous and the followed ones so that his order is emphasized. Hence, it is worth stressing, in this vein, that there is an intimate relationship between the harmony of voice which denotes the shape of pitch and its context.

In Temouchent *wh-questions,* it is perceived that *wh- pronouns* such as: *Win 'where', shħal 'How much', sha 'what'* usually initiate the utterance to form the question; consequently, the pitch of *wh- pronoun* sounds higher on the accented syllable, the pitch of the rest of the utterance ; on the other hand, decreases. That is, there is a low fall leading to L% and

accordingly, the f0 has a lower frequency than the previous one. Unfortunately, frequency and time axes are hidden as the researcher cuts and zooms in on the interrogative utterances from the whole spectrographic representation. It is quite important to mention that the words occurring before *wh-pronoun* conserve their natural and original pitch. Through the spectrographic analysis, it is quite obvious that the curve of the pitch within [Wh-question] utterances differs from that of commands. They are uttered differently; this is evidenced by the results, cited in the conclusion.

CONCLUSION

To conclude, this paper was an attempt to elucidate the spectrographic representation of the recorded utterances and words. Furthermore, it arrived at citing some results and providing overall ideas to interpret them. It contains two steps, the first one is the dissection of the experiment to discover the nature of intonation within *wh-questions* as well as commands; moreover, measure pitch curves. The second step is to study the difference between intonation and tones. The results reveal that there is H+L% rising-falling intonation within Temouchent *wh-question* utterance; however, a rising one within H+H% tones within commands.

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