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TONE IN ABANKALEKE IGBO: AN ACOUSTIC ANALYSIS

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ABSTRACT: *There have been speculations among scholars in the past on the reason for the perceptible difference in the tonal pattern of the Abankeleke Igbo. Prominent among these is that there is a feature of the upstep tone in this dialect group especially in Izii and Ezaa dialects that is absent in most other Igbo dialects. This paper therefore sets out to investigate the truth or otherwise of this claim in Izii and Ezaa dialects by analyzing the tone levels operational in these dialects and in the Standard Igbo and to compare them with those of the Standard Igbo. The data are collected through personal interview. Three respondents are randomly selected; one for Izii, Ezaa and Standard Igbo respectively. An adapted version of the Ibadan wordlist of 400 Basic Items was used and the data were recorded electronically. The data were transcribed and analyzed electronically using the Speech Tools Analyzer version 3, 0.1 (1996-2007) and the Phonology Assistant version 2.2 (1995-2005) software packages developed by the Summer Institute of Linguistics (SIL) International. The result of the perceptual analysis, which is confirmed by the instrumental analysis reveals that there is a feature of the high raising tone in Izii and Ezaa which is absent in most other Igbo dialects (among other factors) that contributes to the peculiar tonal phenomenon perceptible in the speech form of this dialect group*.

KEYWORDS: Acoustic analysis, Tone, Pitch, Dialect, Speech form

INTRODUCTION

Izii and Ezaa are two major dialects of the Northern/Wawa Dialect Cluster of the Igbo language according to Ikekeonwu (1986) classification. They are the most popular and most controversial of the other dialects of the cluster. They are controversial, (especially Izii) because some of the speakers believe that their speech form is another linguistic system other than Igbo. This is based on the early studies of the Izii by missionaries/scholars such as Meir and Meir (1964-1970) and Bendor Samuel (1975). However, this claim is not supported by more recent linguistic and historical findings by scholars including Ikekeonwu (1986), Ukpabi (2003), Udoh (2004), Anyanwu (2005), Nwaozuzu (2008) and Obianika (2012). Moreover, Ikekeonwu (1986) points out that the Izii dialect is of particular interest because of its tonal patterning. According to her, the phonological phenomenon called the "upstep" is a feature of the Izii dialect and she suspects that it may account for much of the perceptible difference between Izii and many other dialects of Igbo. It is against this backdrop that this study intends to find out the tonal patterning perceptible in the dialects of Izii and Ezaa and to inculcate the acoustic analysis so as to authenticate the perceptual findings.

Objective

The research sets out to investigate, using both the auditory and acoustic methods, the tone levels operational in Izii and Ezaa dialects of the Igbo language with a view to finding out the particular

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tone levels, the range of the pitch at which each of the tone levels is realized for each of the dialects and the effect of specific consonants on the tone levels.

Acoustic Analysis, Pitch and Tone

Acoustic phonetics mainly has to do with speech reception, that is, what happens from the time speech leaves the mouth, goes through a medium (water, glass or air) to reach an object (the hearer).We cannot discuss acoustics in isolation without also bringing in speech perception. He states that these two are so related that some speech perception researchers do not make clear distinctions between the two. What the listener perceives are a set of acoustic stimuli containing information ranging from relatively low to high frequencies at varying intensities. Sound perception is wholly concerned with the conversion of acoustic stimuli from sound pressure to units of meaningful speech units. Acoustic properties include frequency, intensity (acoustic measurement for loudness), duration and phase. The use of instruments in acoustic investigations has been viewed as an indispensable aspect that the process is also referred to as instrumental phonetics. Acoustic Experimentation is therefore a system of investigation which involves the use of acoustic instruments in describing and analyzing language data.

Pitch is the extent to which a sound is high or low and it depends on the rate of vibration of the vocal cords. The tauter the vocal cords are, the faster they vibrate and the higher the pitch of the perceived sound (Katamba (1989:186). The speed at which the vocal cords vibrate can be measured in terms of the number of times they complete cycles of opening and closing per hundredth millisecond. The unit is called the fundamental frequency (f_o). It is also the rate at which the speech pressure waveforms repeat. Ladefoged (1982) and Ashby and Maidment(2005) agree that the rate of vibration of the vocal cords determines the F_o and the higher the pitch, the higher the F_o and the higher the pitch perceived by the hearer. The unit of measurement for the F_o is the Hertz (Hz). It is not the absolute Hz values of a fundamental frequency contour that matters but the relative values because female speakers generally produce sounds with higher pitch than males. This is because typically, women have smaller larynx and shorter vocal cords than men (Ashby and Maidment (2005:154).

Languages utilize pitch in different ways. Pitch may mark words in tone languages or categories higher than the word such as sentences, clauses et cetera. In such a case, the language is said to be an intonation language. In intonation languages, pitch may also perform other functions such as accentuation (allocation of primary stress to the most salient syllable of a word) and syntactic functions. It could also be used to convey attitudinal meanings and structure discourse (Uguru (2006). On the other hand, pitch may function mainly on the domain of the syllable. Within the lexicon, every syllable is marked for a relative contrastive pitch height. Such a language is said to be a tone language.

Pike (1948) defines a tone language as a language having a lexically significant, contrastive but relative pitch on each syllable. Goldsmith (1982:49) opines that in a tone language, the lexical entry present in a given structure includes (or, conceivably consists simply of) complete tonal melody….." a tone language is that which utilizes tone as a necessary and integral part of every

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syllable which makes for differences in meaning and marks grammatical distinctions between otherwise identical constructions

Welmers (1959:2) suggests that Pike's (1948) definition may be too strong. He therefore proposes that the definition be modified thus: "a tone language is a language in which both pitch phonemes and segmental phonemes enter into the composition of at least some morphemes". The need for the amendment of Pike's definition becomes apparent when we consider the fact that some morphemes in tone languages 'lack a pitch phoneme (tone), while other such morphemes may consist solely of a tone (with no segment)'. However, Hyman (1975) points out that in tone languages sometimes, there are restrictions on the occurrence of tones. These restrictions can either be phonological or grammatical and because of these restrictions, there will be redundancy in the distribution of tone.

Yip (2007) quoting Hyman (2001) defines a tone language as one in which an indication of pitch enters into lexical realization of at least some morphemes. With this definition of Hyman, is the motive to also capture accentual languages such as Japanese or Lithuanian (Blevins 1993 and Welmers 1973) as a sub-type of tone language in which words have one tone (or several) or no tones, and the tone is associated with a particular syllable or Mora. Tone languages are of two types: the contour tone languages and register tone languages. The classical definition of tone language by Pike (1948) and echoed by Katamba (1989), Nwachukwu (1995), Uguru (2006) and Mbah and Mbah (2010) has it that contour tone languages are languages which involve the changing state of the transition from one pitch to the other in their description of tone. Hulst and Smith (1982) point out that the level tone languages recognize only the points at which the pitch is either raised or lowered. These levels range from high through mid to low. The intervals between these pitches are assumed to be automatic and so of little significance.

The above stance gives the false impression that there is an exclusive dichotomy between level tone languages and contour tone languages: that contour tones do not occur in level tone languages and vice versa. In practical terms though, instances of contour tone may be observed in level tone languages and vice versa. In addition to Welmer's (1959) contribution, Mazaudon (1973) in Hyman (1975) studies Tamang, one of the languages of Nepal and comes up with the fact that of the four contrastive tones of Tamang, there is not always a perfect one-to-one correspondence in pitch between a given tone on a monosyllabic versus a disyllabic word. For instance, tone 4 is realized as a L tone in a monosyllabic word where it usually falls on utterance final position while on two syllables it is realized as a L followed by a falling tone from H to M, that is L-HM. In her argument, it is not possible to assign an individual tone to each syllable, recognize a two-way tonal contrast with a moveable accent, or to assign tone only to the first syllable of each word through a phonological rule or a rule spreading each tone over a word. According to Mazaudon, either of these approaches would fail in one way or the other.

Furthermore, while it is possible to classify tone languages into register and contour tone languages, it is not the case that register tone languages lack contour tones as mentioned earlier. Hyman (1975:217) points out that such languages (register tone languages) frequently have rules of tonal assimilation ("spreading" rules) by which falling and rising tones are derived. Register

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tone languages may also have contour tones as a result of two morphemes coming together. In the Igbo language, examples in 1 below illustrate this point:

1.

ụtụ́tụ̀ → ụ̀ụ́tụ̀ → ụ̌tụ̀ morning

→ àgbọ́ghọ̀ → àgbọ́ọ̀ àgbọ̀ young girl

In the example above, first, consonant deletion takes place then vowel elision occurs. These processes result in a floating tone which gets associated to the initial vowel. The output is a rising glide. For àgbọ́ghọ̀ also, the consonant 'gh' / ɣ / is deleted followed by the elision of 'o' / ɔ /. The tone on the vowel is left floating and is then associated to the final vowel resulting in a falling glide.

Some Igbo language scholars such as Emenanjo (1978) and Mbah and Mbah (2010) uphold the view that Igbo language has two basic tones; high and low plus a downstepped high which is regarded as a grammatical tone. However in more recent works, the downstep tone in Igbo has been shown to perform lexical functions indicating that it is an independent tone.

The following examples in Williamson (1986) are from Onitsha dialect of Igbo:

2.

HH	**HS**
a. álụ́ 'a bite'	á↓lụ 'abomination'
b. ámá 'open place'	á↓ma 'mark, sign' street'
c. ńgó 'reward, pay'	ń↓go 'upper part'
d. ńné 'mother'	ń↓ne 'many, plenty'
e. ọ́dụ́ 'advice, warning'	ọ́↓du ¸ 'pestle'

The above data further confirms the fact presented by Mbah and Mbah (2010) that dowstepped high tone in Igbo is not just a grammatical tone but also an inherent tone for some words generated at the base component. In addition to Williamson's (1986) examples one could cite other examples where the downstep contrasts with low tone in some lexical items.

3.

a. ọ́↓dụ – pestle ọ́dụ̀ – tail/market stall

b. ẹ́↓lo – mushroom élò – suggestion/advice

c. É↓zu – lake (Agulu Lake) ézù – to meet

These examples are from Aguata dialect of the Igbo language and further clarify the claim that downstep is an independent tone in Igbo and not just a grammatical tone.

In another related work, Okorji (2002) examines the Inland West Igbo dialects with a view to finding out their phonological and prosodic similarities and dissimilarities. Six dialects are selected to represent the dialect cluster. These are Umuchu, Ekwuluọbịa, Ọka, Enugwuukwu, Ọraukwu and Enuọnịcha dialects. Only the tonal aspect of her analysis is of major interest to this present work. She examines the tonal interaction in segments, words, phrases and sentences and finds out that the high and low tones are basic tones in Inland West Igbo dialects while the down step, the high –falling glide, the low-rising glide and upstep are non-basic. Furthermore, she discovers that there is a direct link between syllable and tonology in the dialect cluster and that downdrift and downstep are applicable to all the representative dialects while upstep obtains only in Aguata-Amaiyi dialect representatives.

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Having discussed tone in languages in general and particularly in the Igbo language and its features in some dialects of the Igbo language, let us now see the tone levels that are operational in the dialects under study; Izii and Ezaa dialects.

METHODOLOGY

The study will combine both perceptual and acoustic methods of analysis in this study. The sampling technique used is random sampling. The data for this study is gathered from the Izii and Ezaa dialects of the Northern/Waawa group of Igbo dialects according to Ikekeonwu (1986) classification. Izii and Ezaa dialects are chosen because they are the most controversial and the most popular of the dialects of the Northern group of dialects of the Igbo language. These two dialects are spoken in Ebonyi State in the South Eastern part of Nigeria. Izii is spoken mainly in Ebonyi, Izii and Abakaliki Local Government Areas while the majority of Ezaa speakers live in Ezaa North and Ezaa South Local Government Areas. However, there are Ezaa speaking communities in Edda, Ohaukwu, Ishielu and Ivo Local Government Areas.

Two adults who are L_1 speakers of Izii and Ezaa respectively are sampled. Structured personal interview is adopted to elicit three tokens of each word from the three respondents. One hundred and fifty words of basic items adapted from the Ibadan 400 Basic items wordlist are used and the data are recorded electronically. The data analysis is carried out with the Speech Tools Analyzer version 3, 0.1 (1996-2007) and Phonology Assistant version 2.2 (1995-2005) software packages developed by the Summer Institute of Linguistics (SIL) International. These are used in recording, transcribing and in the acoustic analysis of the data.

Tone in Izii and Ezaa Dialects

Tone levels perceptible in the two dialects are outlined in the following section. First, the Izii tonal system will be presented followed by that of Ezaa.

Tonemes of Izii Dialect

The Izii dialect has the high, the low and the downstep tones just as it is in the Standard Igbo. In addition to these, the high raising tone is observed in the Izii dialect. It is a level tone that occurs in languages. While the upstep occurs after high tones, the high raising occurs after low tones and is usually a feature of tonal dissimilation. In the Izii dialect, it occurs between two low tones and also occurs as a result of dissimilation and so is not phonemic in the Izii dialect. The examples are as follows;

4.

/ìgbéŕì/	‘guinea corn’
/àʃímóḱù/	‘groundnut’
/ḿkpúŕù/	‘room’
/ɛ́ɲʷéàa/	‘guest/stranger’
/èkǿtàra/	‘right (side)’
/ɛ̀kíćà	‘left’
/rìáɔ̀rìrì/	‘cry’

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Table 1: Izii Dialect Tonemes

The examples of the other tones are presented below as they occur in the Izii dialect;

High Tone	Low Tone	DownStep	High Raising
/□□ʃìɛ□□□□□□□□/ arm /ɛ□□□ʃʊ□ʃ□□ hair /□□□ɔ□□ʊ□/ cookingpot /ŋ̀tʊ□/ ashes /ʊ□□□□/ bow	/àgba□/ jaw /ɪ□□□□g□□□ɔ□/ pepper ɛ□□□ʊ□□ʊ□/ bush /àl ɪ□/ earth /òkpu□/ cap/hat	/ɔ́kwo□↓ɦe/ grinding stone /Útú↓te/ mat /ɔ̀kpɔ́↓kʊ́/ compound	/àʃímʹókù/ groundnut /ḿkpʹúrù/ room /èɟʷéàa/ guest /èkʹọ́tàra/ right /èkíćà/ left

Tonemes of Ezaa Dialect

Ezaa dialect has the high, the low and the down step tones as they occur in the Standard Igbo. In addition to these, the high raising tone is also observed in the Ezaa dialect and is exemplified below**;**

/ìgbéri□□□/	guinea corn
/àkáhò /	old
/èkʹọ́tàr/	right (side)
/èkíca□/	left

Table 2: Tonemes of Ezaa Dialect

The other tones that are mentioned above as observed in the Ezaa dialect are presented in the following table.

High Tone	Low Tone	DownStep	High Raising
/ɔ́ka□/ hand /ʃ̀i□i□/ small /ŋ̀wɦɔ□kh/ crab /úhwu □/ village /ɔ́nó/ mouth	/ɔ□gra□ɲà/ old person /ɔ̀ga□□/ guineafowl /ì□□□□/ ashes /èdʒ/ bad	/méé/ blood /mgbɛ□e□ɲá/ sleep /ɛ́whʊ□rʊ □o□gwi□hwé/ grinding stone	/ìgbéri□/ guinea corn /àkáhò/ old /èkʹọ́tàr/ right(side) /èkíʧa□/ left

Also in Ezaa dialect we observe the existence of gliding tones. Basically, there are rising glides and marginally falling glides. The examples are as follows:

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Table 3: Gliding Tones in Ezaa Dialect

Gliding Tones in Ezaa

Rising Glide Rising Glide	Falling Glide
/ɛ̌hwà/ name /ědʒ/ snail /íʃìŏts/ dawn /ěwv/ fear /ɔ̀kpà/ leg	/ŋwêtʃa□/ dog /a□ka□hwò/ old

In the above data, only two of the examples /íʃìŏts/ and /ŋwêtʃa□/ could be explained as occurring as a result of elision. /íʃìŏts/ 'dawn' may have occurred as a result of intersegmental coordination in the pronunciation of the two words /ísí/ and /òtsótsò/ after the deletion of the first /ts/ and the elision of the first /ʊ/. The high tone which is left floating now attaches to the next vowel. The last vowel / ò/ does not surface because the dialect allows closed syllables. The example on falling glide is very marginal in the dialect and could be explained as a product of assimilation process. The two words 'nwá' and 'èchà' when pronounced as one word are realized as 'nwêchà' /ŋwêtʃà/ as the last vowel of the initial word is elided and its tone which is left floating is now associated to the following vowel (the initial vowel of the second word). The result is a falling glide on the vowel /ê/.

Spectrographic Evidence of High Raising Tone in Izii and Ezaa Dialects

In this section, we present the spectrographic evidence of the high raising tone in Izii and Ezaa dialects. First, that of Izii will be presented followed by that of Ezaa and finally the gliding tones in Ezaa dialect.

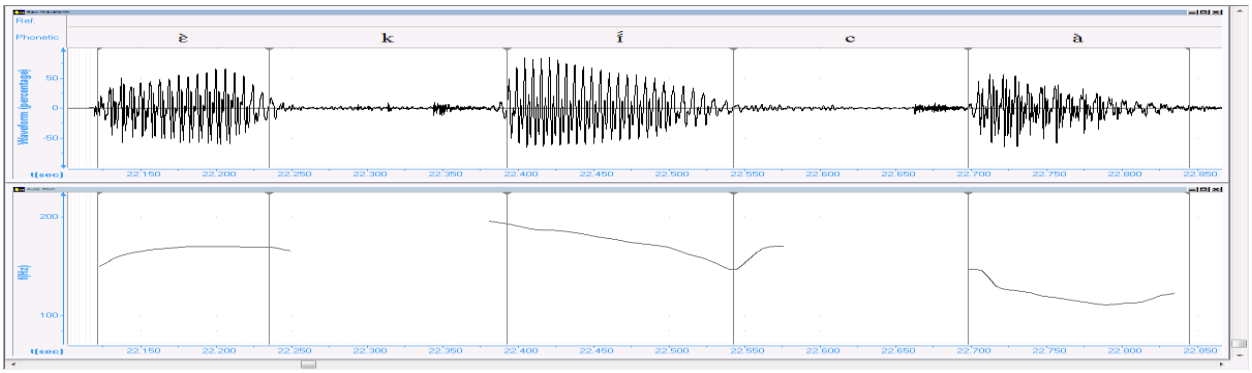

Figure 1 showing high raising tone /□□□□□□□□/ 'left side' in Izii dialect (second syllable).

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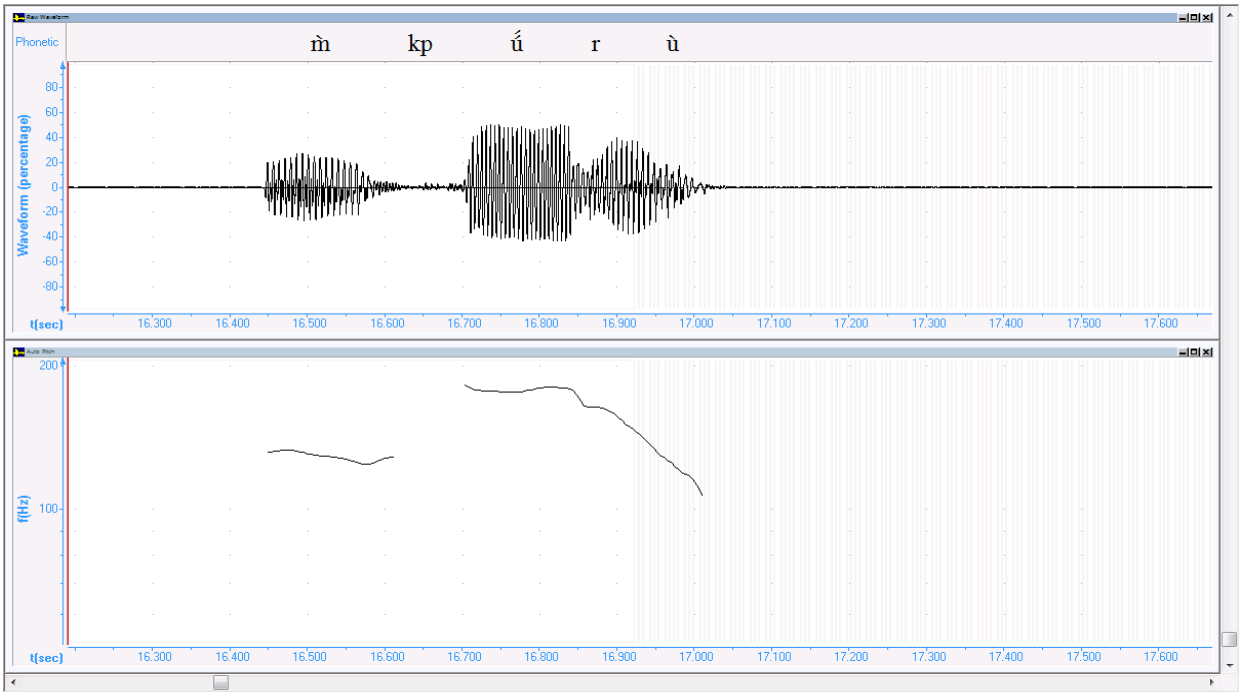

Figure 2 showing high raising tone /□□□□□□□□□□□□□□□□ in Izii dialect (second syllable)

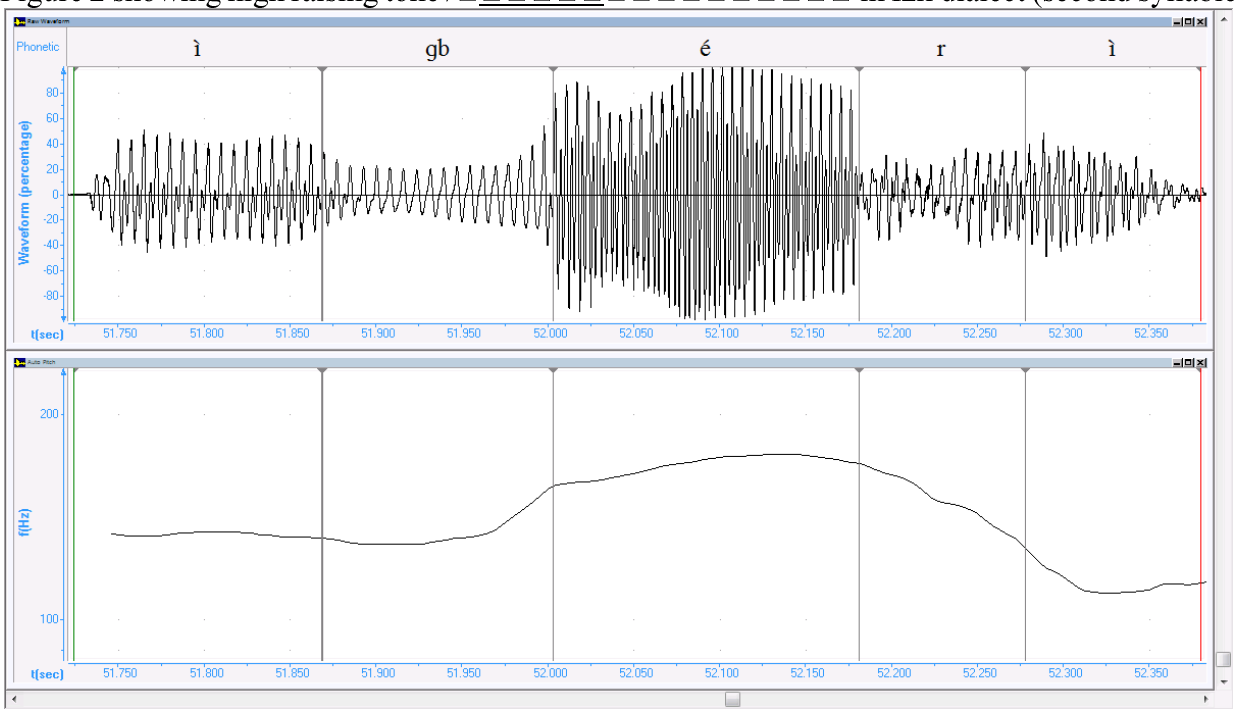

Figure 3 showing high raising tone □□□□□□□□□□□□□□□□□□□□□□□□□□□□ in Izii dialect(second syllable).

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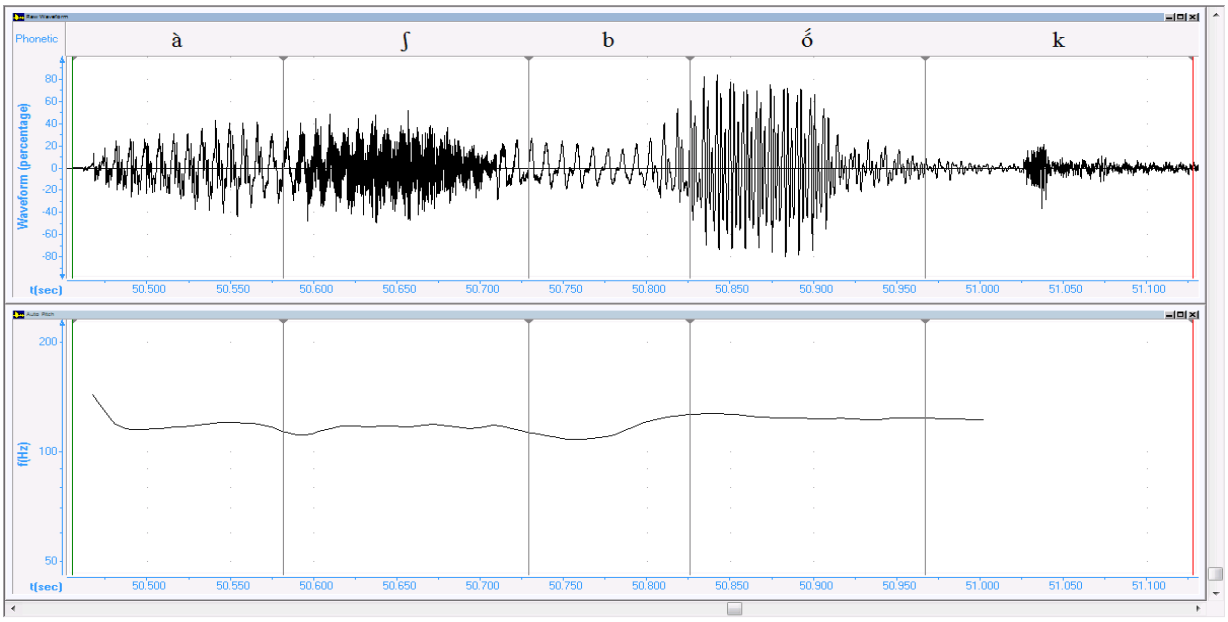

Figure: 4 showing high raisig tone
/□□□□□□□□□□□□□□□□□□□□□□□□□E□□□□□□□□□□□□□(last syllable)□

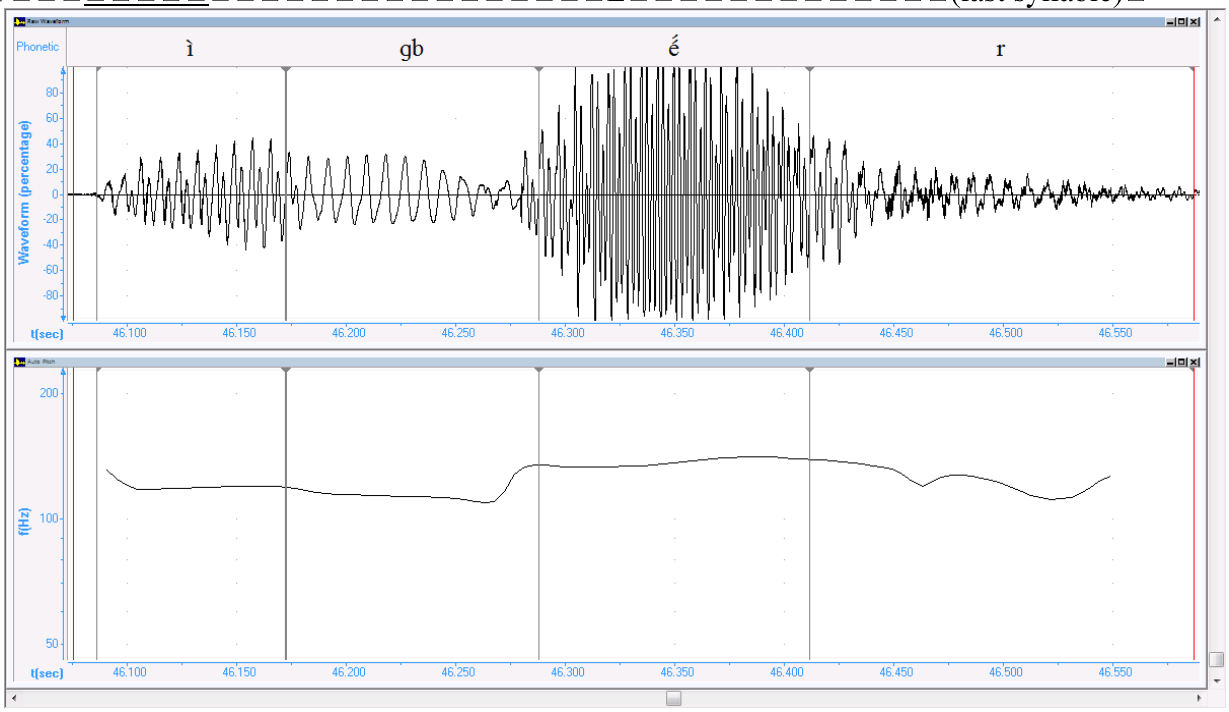

Figure 5 showing high raising tone /i□□□□□□□□/ 'guinea corn' in Ezaa dialect (second syllable)

In figures 1-5 we see that the pitch levels of the second syllables which are following low tones should have been a bit lowered ordinarilly as high tones following low tones are known to have lowered pitches induced by the preceeding low tone but this is not the case. Given the fact that

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velar plosives are known to raise the pitch of vowels following them, it should be noted that it is not all the syllables that bear the high raising tone that follow velar plosives. Figure 6 above /□ □□□□□□□□□□□□□□□□□□□□□is an example in both Izii and Ezaa dialects. The pitch is rather raised to between 15-20Hz, an unusual hieght for a high tone following a low tone. The usual pitch range of high tones following lows is about 10hz. The indication is that the tone is a high raising tone and not just a high tone. The high raising tone is known to follow a low tone unlike the upstep which follows a high tone. However, the high raising tone is not observed to be phonemic in the Izii dialect.

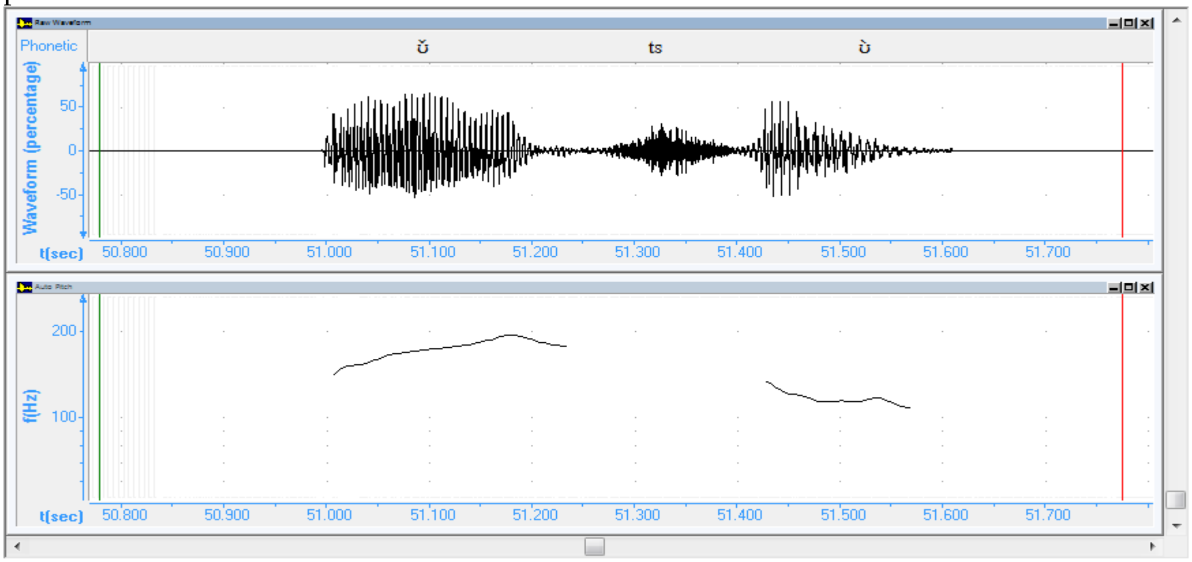

Figure 6: Low rising glide in Izii dialect

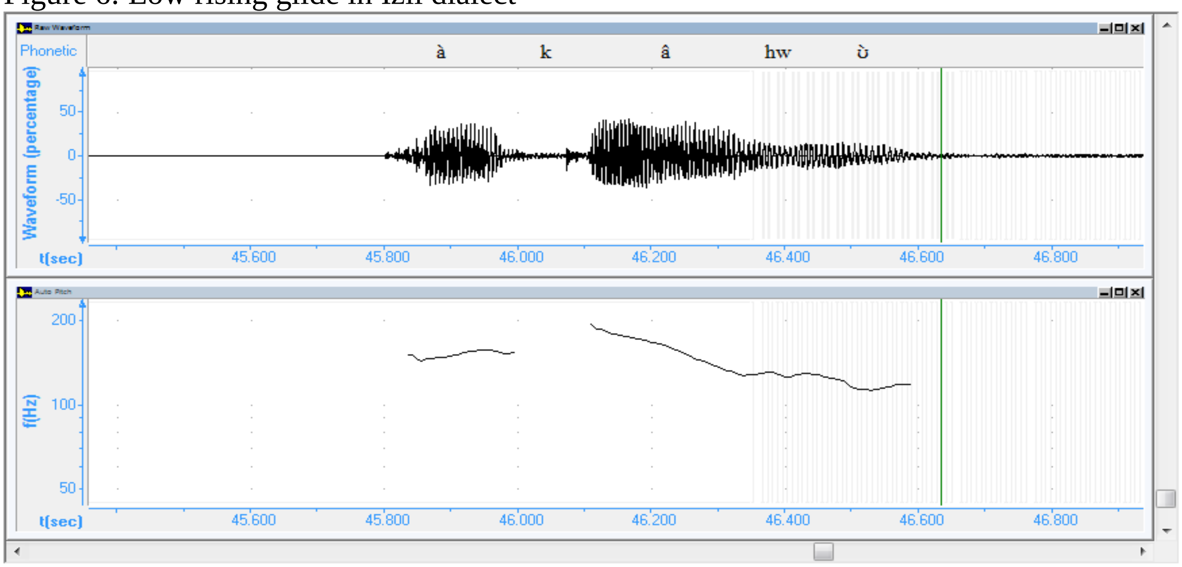

Figure 7 High falling glide in Izii dialect

In figures 6 and 7 above, we observe that the glides could be explained to occur as a result of phonological processes of elision and deletion as explained in 3.3 above. We shall look at nouns in the dialects and in SI to observe the pitch levels and compare how they vary in Izii, Ezaa and

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the SI. The data selected are those which are cognates in at least two varieties. The pitch level indicated in each word is the syllabic element with the highest pitch and is underlined.

Table 4: Tone and Pitch Levels in Specific Linguistic Items in Izii, Ezaa and the Standard Igbo

Pitch Levels of Tone in Specific Linguistic Items

Izii	F_o	**Ezaa**	F_0	**SI**	F_o	**Gloss**
1./í □ʃi□□□□□ / □	170hz	/í □ʃi□/	140hz	/ ísí /	150hz	'head'
2./ ɛ́ŋa□/	155hz	/ɛŋa□/	130hz	/áŋá/	148hz	'eye'
3./ńtʃì/□	198hz	/ńtʃ/	160hz	/ńtì/	170hz	'ear'
4./éz↓e/	160hz	/éz↓e/	130hz	/éz↓e/	155hz	'teeth'
5/ótùbò	199hz	/o □tùbò/	170hz	/ótùbò/	150hz	'navel'
6./ ́ŋ □vɔ/	197hz	/_____ŋ □́vɔ□/	120hz	/ ŋ □́bɔ□/	155hz	'nail(finger/toe'
7./íkpère□	200hz	/íkpère□ /	170hz	/□□□□□ □□□□□/	180hz	'knee'
8./óo □ʃi□/	165hz	/óʃívu □ru □e □vʊ □r/	155hz	/úkwùósisi	165hz	'tree'
9./ɔ́bà/	160hz	/í ʃiɔ □bà/	170hz	/ɔ́bà/	150hz	'calabash'
10/ɔ́gò/	180hz	/ɔ́g/	145hz	/ɔ́gò/	160hz	'hoe'
11/ótá/	170hz	/ótá/	120hz	/ótá/	165hz	'bow'
12/áʃʷa□/	160hz	/áfwa□/	140hz	/áhi □a□/	155hz	'market'
13/è □gbʊ □dʊ□/	145hz	/ɔfwɪ □a□/	165hz	/ɔhɪ □a□/	160hz	'bush'
14/úbvu□	160hz	/útvu/□	155hz	/úgwu□/	155hz	'mountain'
15/àlɪ/□	145hz	/édʒ↓a/	150hz	/ànɪ□/	135hz	'earth(soil)'
16/épòtʃɪ□/	187hz	/ékpɔ □tɔ□/	195hz	/ápìtɪ□/	160hz	'mud'
17/ìku □ku□	150hz	/ìku □k/	165hz	/ìku □ku□/	130hz	'wind'
18/ébvò	192hz	/ěwv/	180hz	/égwù/	170hz	'fear'
19/ŋ̀ʃì/□	170hz	/ɔ́v/	195hz	/ɔ́gwò/	180hz	'medicine(charm)'

In the examples in Table 4 above, all the cognate linguistic items have similar tone patterns. Even in a few cases where the word for one item is not a cognate in one of the varieties, the tone pattern

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is the same: /épù̲tʃi/ (Izii), /ékpò̲tɔ/ (Ezaa) and /á̲pìtɪ/ (SI) (No.16). The same goes for Nos 12 and 14. For No 18, the tone pattern for 'fear' in Izii and SI are the same (HL) but in Ezaa, it is a rising glide. Also, No15 has the word as cognates for Izii and SI but a different word and tone pattern for Ezaa. In Nos 13 and 19, the words are different in the three varieties and the tone patterns are also different. In all, for the examples given, 14 lexical items are cognates in the three varieties, 2 are different words (Nos 8 and 16) but the same tone patern in the three varieties, 5 items are different words for Izii and Ezaa. Five of the words are different in Izii and SI while four are differ in Izii and SI. A total of five words are different in Ezaa and SI. Other words that are not cognates have different tone patterns.

Variation in Pitch Levels

The average of the three recorded tokens is presented here. The range of pitch levels in the varieties is not the same. In Izii dialect, the highest pitch level reached is 200 hz (No. 7) and the lowest is 145 hz (No. 13 or 14). For Ezaa, the highest pitch is 195 hz (No.16) and the lowest is 120hz (Nos.6 and11). In SI, the highest pitch recorded is 180 hz (No. 7) and the lowest is 130hz (No. 17). Generally, the pitch range for low tone in word initial position for the three varieties is between 150-140 hz for midial position is 200-145 hz and for final position is 140-120hz. It is of interest to note that the highest pitch recorded for Izii and Ezaa dialects are for low tones and that they come after the voiceless labio-velar plosive /kp/ though in different words. This shows that absolute pitch may not be relevant in delineation of level tones in tone languages. Another fact here is that consonants do have effect on the pitch levels of the vowels with which they occur. In this case, the pitch is raised where there should have been a pitch lowering (that is, lower than the preceding high tone) considering the fact that the low tone is following a high tone in this environment.

Effect of Consonants on the F_0 of Tone

Selected words are analyzed below to determine the level of influence exerted on the fundamental pitch levels at which tones are realized and the role of adjacent segments in determining the pitch levels. We observe that in general, when a vowel follows a consonant (especially voiceless plosives) the vowel starts with high pitch then drops to the normal level but because tone levels are not determined by absolute pitch, the perception of the tone level of the syllable is not affected.

Examples;

The word /ótù̲bo/ (navel) Table 4 No. 5) in the three varieties starts with a high tone but we discover that the second syllable starts with the voiceless alveolar plosive /t/ and influences the low toned /ù/ to start with the highest pitch in the word recorded for the three varieties: Izii 199hz, Ezaa170hz and SI 150hz. Other examples are Nos. 7, 12, 14, 16, (Izii) Nos. 12, 13, and 17(Ezaa). For SI we have Nos. 11, 12 and 13 on Table 14.It is of interest to note that the highest pitch recorded for Izii and Ezaa dialects are for low tones and that they come after the voiceless labio-velar plosive /kp/ though in different words. This shows that absolute pitch may not be relevant in delineation of level tones in tone languages. Another fact here is that consonants do have effect on the pitch levels of the vowels with which they occur. In this case, the pitch is raised where there should have been a pitch lowering (that is, lower than the preceding high tone) considering the fact that the low tone

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is following a high tone in this environment. The spectrogram below is a further illustration of this fact. The example is from the Ezaa dialect.

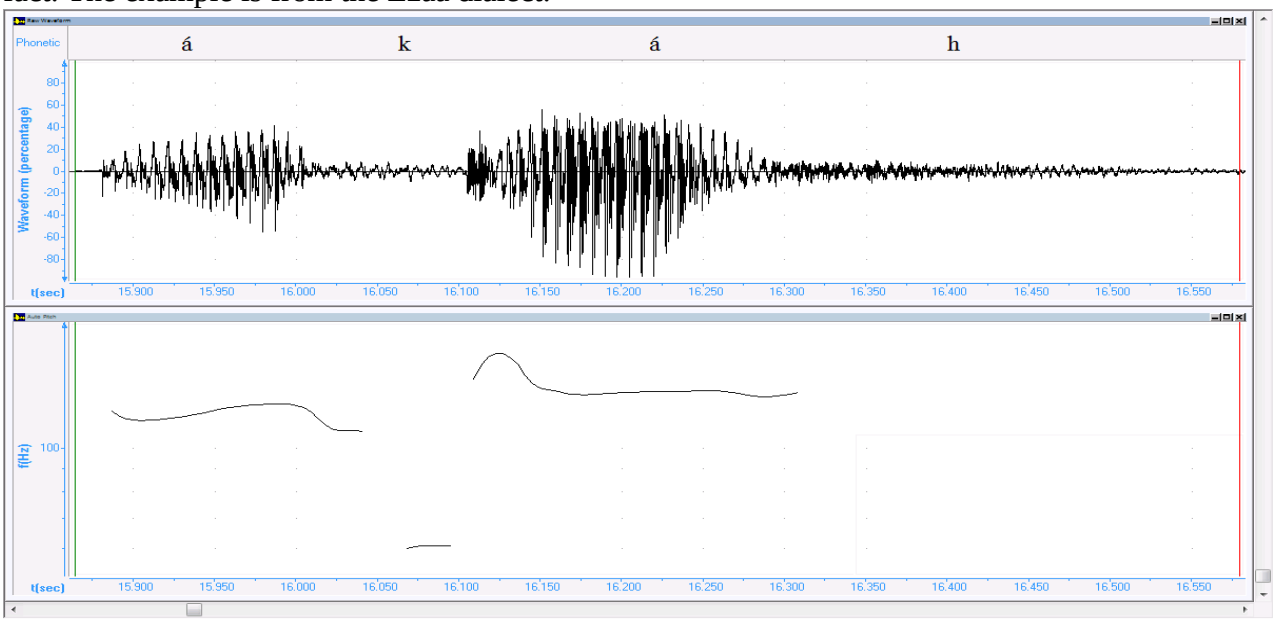

Figure 8: Ezaa data showing effect of [k] on the pitch of the following vowel [a] in the word /□□□□□□□.

In figure 8 above, we notice that the two syllables are high toned but the second syllable which should have been lower than the first in pitch because of the effect of downdrift is higher by at least 30Hz because of the influence of the preceding voiceless velar plosive /k/ .

IMPLICATIONS TO RESEARCH

In the literature, there have been speculations on the reason for the perceived peculiarity in the speech form of the Abankaleke Igbo. Prominent among these is the suspicion that the peculiarity is due to the occurrence of upstep tone in these dialects. By this research, it is now cleared that this feature is not observable in these dialects especially at the lexical level in Izii and Ezaa dialects.

CONCLUSION

From the discussions above, we conclude that the tone levels operational in the Izii and Ezaa dialects of the Igbo language are the high, low, downstep and the glides (rising and falling glides) and that though the high raising tone occurs in these dialects that it is not phonemic as evidenced from our data in both the perceptual and acoustic analyses. Furthermore, we conclude by inference that the upstep is not obtainable in these dialects at least at the lexical level since it is not observed in our data. Also, the pitch range for the different tone levels in the dialects are recorded as follows; for Izii dialect, the highest pitch level reached is 200 hz (No. 7) and the lowest is 145 hz (No. 13 or 14). For Ezaa, the highest pitch recorded is 195 hz (No.16) and the lowest is 120hz (Nos.6 and11). In SI, the highest pitch recorded is 180 hz (No. 7) and the lowest is 130hz (No. 17). Generally, the pitch range for low tone in word initial position for the three varieties is between

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150-140 hz for medial position is 200-145 hz and for final position is 140-120hz. Finally, we conclude that in line with what is obtainable in the literature that the pitch of tone on vowels following voiceless consonants especially when aspirated is usually raised. This is exemplified in Numbers 7, 11, 12, 13 and 16 in Table 4 for the three varieties and in figures 6 and 7.

FUTURE RESEARCH

In as much as this work studied the tone levels obtainable in the Abankaleke dialects, it focuses on the lexical level. Moreover, as the suspected source of the peculiarity of the speech form is not observed at the lexical level which this work pursued, it would be worth while studying the tone patterns operational in these dialects at other levels of higher constructions such as phrases, clauses and sentences as the upstep may well be a grammatical tone or a feature of intonation.

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