

The Upstep Tone in Abankeleke Igbo: An Acoustic Investigation

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ABSTRACT

The upstep tone is not common in the Igbo language but there had been a suspicion of its existence in the Abankeleke dialect cluster. In a recent study though, the upstep tone is not recorded in these dialects at the level of the word. This paper therefore investigates the existence of the upstep tone in sentences in two dialects of the Abankeleke dialect cluster; Izii and Ezaa. The data are collected from four adult L1 speakers of each of the two dialects through structured oral interview. The data is recorded with the Audacity software and analyzed with the Praat. In the findings, the upstep tone is not recorded rather the high raising tone is evidenced. Therefore, the paper concludes that the upstep tone is not a feature of these dialects.

Keywords: Igbo, upstep tone, acoustic analysis, and dialect.

INTRODUCTION

The Igbo language is a Nigerian language of the Benue-Congo phylum in Niger-Congo language family. It is spoken mainly in five states in southeast Nigeria namely; Anambra, Abia, Ebonyi, Enugu and Imo and in some communities in Delta, Rivers, Bayelsa and Akwaibom states. According to the 2006 Census of Nigeria, the Igbo population is estimated to be around 21 million, whereas the land area is about 15,800 square miles. They occupy the area between latitudes 5.8° north and 6.8° east. [1] in a linguistic and geographical classification of Igbo dialects identifies six dialect clusters: Northern/Waawa Igbo (N/WI) with varieties spoken in Enugu, Nkanu, Nsukka, Awgu, Udi, Achi, Abakaliki and so on.

- Niger Igbo (NI) with varieties spoken in Asaba, Agbor, Ukwuali and so on.
- Inland West Igbo (IWI) with varieties spoken in Onitsha, Awka, Aguata and so on.
- Inland East Igbo (IEI) with varieties spoken in Umuahia, Orlu, Owerri, Ngwa and so on.
- Aro Igbo (AI) with varieties spoken in Arochukwu and other Aro settlements.

Riverine Igbo (RI) with varieties spoken in Rivers State of Nigeria. The official orthography is the Onwu orthography. Igbo has thirty six phonemes out of which twenty eight are consonants while eight are vowels. It runs a vowel harmony system neatly divided into two sets of four vowels each; +ATR (a i o u) and -ATR (e i o u).

Igbo is classified as a tone language with two level tones (HIGH ['] LOW [ˊ]) and the down stepped high tone (DSTEP [↓]). These tones feature in all the dialects. However, the upstep has been reported in very few of the dialects mainly in IWI and N/WI dialect clusters. Also, contrary to more recent studies by scholars such as [2], [3], [4], [5] who classified the speech forms of Abankeleke people as Igbo, earlier scholars of the N/WI dialect cluster such as [6] [7] had classified these dialects as a different linguistic system other than the

Igbo language based on their perceived difference in the speech form of these dialects. [8] therefore opines that the upstep tone featured in these dialects may have been the reason for the earlier classification of the N/WI cluster as a different language. In spite of these speculations, no report of a formal linguistic study had been presented to clarify these claims. The most recent study to this effect is that of [9] which studied two of these dialects using wordlists and came up with the report that the upstep is not featured in the data. There is therefore the need to further study structures higher than the word in these dialects to clarify the existence of the upstep tone in the dialects.

Objectives

This study therefore intends to study 100 selected sentences from two of the most widely spoken and popular dialects of the N/WI cluster of the Igbo language; Izii and Ezaa dialects. These sentences are drawn from [9] list. The acoustic method of analysis will be used to analyze the data to find out the truth of the claim that the upstep tone exists in these dialects.

METHODOLOGY

The study is on two most widely spoken dialects of the N/WI dialect cluster of Igbo which are spoken mainly in Ebonyi and parts of Enugu states of southeast Nigeria. Purposive sampling method was used to select 100 sentences from [10] lists. The acoustic and perceptual methods of analyses were applied. Through structured oral interview, eight adult speakers of these dialects - two males and two females each were sampled. They were asked to study, translate into their dialects and read the selected 100 sentences which were also recorded electronically and analyzed with Praat software version 5.3.56 developed by Paul Boersma. Two tokens of each sample were taken. The pitch height of the syllables were measured and compared with the perceptual assessment to determine the overall result. The raising of the pitch of a high tone after a high tone is a high raising tone while the raising of the pitch of a high tone when it follows a low tone is to be recognized as upstepped high tone.

Tone in Igbo language

[11] defines a tone language as a language having a lexically significant, contrastive but relative pitch on each syllable. [12] opines that a tone language is that which utilizes tone as a necessary and integral part of every syllable which makes for differences in meaning and marks grammatical distinctions between otherwise identical constructions.

Tone in Igbo language has attracted a lot of attention from Igbo language scholars mainly because of the pivotal role it plays in Igbo as a register tone language. [13] point out that the level tone or register 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. [14] points out that one of the factors that determine the pitch of high tone is a phenomenon termed the "start up effect" which causes tones in utterance initial positions to be realized at a higher pitch than similar tones later in the utterance. This is also known as downdrift or tone terracing. It is this effect that enables the recognition of the occurrence of high raising and upstep tones. The high raising tone occurs after high tone while the upstep tone occurs after a low tone in a position in an utterance other than the utterance initial or final positions.

Scholars assumed that Igbo operated a two tone system; High and Low while the downstepped high was said to be a grammatical tone. However, further studies of the dialects revealed that downstepped high tone features as inherent tone for some words generated at the base component in some Igbo dialects such as IWI. [15] also cites some examples from Enu Onitsha dialect;

HH	HS
a. álu, 'a bite'	á↓lu 'abomination'
b. áma 'open place'	á↓ma 'mark, sign' street'
c. n̄gó 'reward, pay'	n̄↓go 'upper part'
d. n̄né 'mother'	n̄↓ne 'many, plenty'
e. ódu, 'advice, warning'	ó↓du, 'pestle'

Much the same way, earlier scholars of the Igbo language as mentioned earlier speculated that the N/WI was a different linguistic system other than Igbo, pointing at the existence of the upstep tone as being responsible for this. So far, the claim has not been substantiated empirically. This research hopes to contribute in the resolving of the speculation using the acoustic method.

[16] shows that 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). [17] on the other hand states that 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.

[11] also discusses the advantages of incorporating instrumental investigation in the analysis of prosodic language data. This is necessary because phonetic experimentation has to be as objective and scientific as possible. Instrumental experimentation is therefore an extension and aid to our bodily faculties. In other words, we first make observations through our senses of hearing and sight; then we make hypothesis which the instruments confirm, negate or modify.

Acoustic analysis of the data

The data gathered were analyzed to determine the pitch levels of tones and the environment of their occurrence. The context and position of occurrence of the tone in the utterance is essential in determining the status of the tone. Thus, the effect of tone terracing or down drift plays a vital role in the assessment of the results of the analysis. The result of the analysis is presented in table one below;

Table 1: This is a sample of result from Ezaa dialect data showing pitch height of tones.

Utterance Number	Tone	Highest H Tone Pitch in utterance	Pitch Height realized for sample	Position of tone in Utterance	Preceding Tone
2..	H	336.3 Hz	293.6 Hz	middle	L
3.	H	296.3 Hz	234.8.Hz	Middle	L
4.	H	327.1 Hz	286.3 Hz	Middle	L

The data in Table 1 shows the height of pitch of the high tone following a low tone in the utterance. Initial high tones or high tones not preceded by low tones were not considered as these are not likely to qualify as upstep tone even if there is perceived raise in pitch for the reason of the definition of upstep tone. The highest pitch recorded for the sampled utterances are 336.3 Hz, 296.3 Hz, and 327.1 Hz respectively for utterances 2, 3, and 4. When placed side by side, the pitch heights of the high tones following low tones in the utterances are lower by 42.7 Hz, 61.5 Hz and 40.8 Hz respectively. Perceptually, there was no perceived raise in the pitch of the sampled tones. This was also confirmed by the

spectrographic evidence of lowering of the pitch heights. Effect of downdrift may have been responsible for the lowering of the pitch of the tones.

Table 2: This is a sample of result from Izii dialect data showing pitch height of tones.

Utterance Number	Tone	Highest H Tone Pitch in utterance	Pitch Height realized for sample	Position of tone in Utterance	Preceding Tone
1.	H	296.9 Hz	273 Hz	Middle	L
2.	H	426.7 Hz	245.Hz	Middle	L
3.	H	315.5 Hz	315.5Hz	Middle	L

The Izii data showed almost the same phenomenon as that of Ezaa dialect. The pitches of the high tones following low tones were lower than the pitch of the highest high tones. However, for the third utterance, the highest pitch was also a high tone following a low tone. The pitch values for the high tones with highest pitches in the utterances are 296.9 Hz, 426.7 Hz, 315.5 Hz while the highest pitch for high tones following low tones are 273 Hz, 245 Hz, 315.5 Hz. The differences in the pitches are therefore 23.9 Hz, 140.7 Hz while for the last utterance, there is no difference in pitch value. The data therefore shows that there are no raising of pitch of tones in the high tones following low tones for the Izii dialect.

CONCLUSION

The upstep tone is characterized by the raising of the pitch of tone of a high tone when it follows a low tone. In the data from Ezaa and Izii dialects of Igbo presented in this paper, there is no evidence of the any raise in the pitch of tones that follow low tones. This paper therefore concludes that there is no upstep tone in Izii and Ezaa dialects of the N/WI dialect cluster.

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