

Downstep in Ikhin, An Edoid Language

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Abstract

The typology of the tone system of Ikhin is ‘two tones plus a downstep’. Winston (1960) discovered ‘downstep’ in his work on Efik. In this language, the two tones, high (H) and low (L) are distinctive while the phenomenon, downstep is not phonemic. It is derived from ‘automatic downstep’, which is itself called ‘downdrift’. It occurs where a series of high tones are progressively lowered by intervening low tones. Data were collected using the 1000 wordlist of the Summer Institute of Linguistics and the University of Ibadan 400 wordlist. This paper confirms that the underlying source of downstep derives from downdrift through the loss of low tones set afloat by phonological processes. The study observes that downstepped high tone is created in Ikhin morphemes when a low tone vowel preceding a high tone vowel is deleted as in Ikhin examples such as óyò ‘day’ → /óyò + óyò / óy!óyò ‘everyday’. A previous study on Ikhin dwells mainly on the phonetics of the language. This study therefore, investigates the phonological processes accounting for the non-phonemic status of the phenomenon ‘downstep’ in Ikhin. Further investigation on the occurrence of downstep in morphemes and sentences in this language confirms that the hallmark of a downstep system is the terracing of the H tone. The study concludes that downstep is traceable to floating low tones, therefore, downstep is only a tonal phenomenon and not a toneme on its own. This is ably displayed in autosegmental representation used in analyzing and presenting the data.

Keywords: downstep, downdrift, ikhin, floating low tones, autosegmental representation

Introduction

Ikhin is one of the languages spoken in the Southern Nigeria. It belongs to Edoid language family. According Oladimeji (2013), it is a daughter language that belongs to the North-Central group of Edoid languages that was formerly known as Eastern Kwa. Categorically, Oladimeji (2010) states that the Ikhin language is spoken at Ikhin in Owan East LGA of Edo State. For Blench (1989), the Eastern Kwa languages are recently classified as Benue-Congo (BC) and they form putative West Benue-Congo (WBC). However, the Edoid languages are majorly grouped into four. For Lewis (2013:160), they are North Central (NC), Northwestern (NW), Southwestern (SW) and Delta (D). Additionally, Elugbe (1989) recorded that the Edoid languages spread from the eastern Niger Delta in the Rivers and Bayelsa States through Delta State and Edo State into parts of Ondo and Kogi states (<http://www.ling.mq.edu.au>).

This paper observes that Ikhin operates a terraced-level system with two tones, high (H) and low (L). These two tones downdrift. A sequence of low tones down-

drift. The low tone ends with a glide in a final position. This final position may be at the end of a word or at the end of a tone phrase. Apart from the downgliding of a low tone in a final position, another phonetic realization of a low tone in Ikhin is the pitch lowering from one low tone to an immediately following low tone. Thus a sequence of low tones without and intervening high tones also drifts down. In Ikhin, a high (H) tone is realized at a lower pitch than a preceding H tone, a phenomenon coined as ‘downstep’ by Winston (1960). Ikhin also has rising [ǎ] and falling [â] tones referred as contour tones which are triggered by syllable structure processes of vowel elision and glide formation. This study notes that the two tones high (H) and low (L) are distinctive while the phenomena ‘downstep’ and ‘contour tone’ are not phonemic. The paper seeks to investigate the sources or triggers of downstep in Ikhin.

Going forward in this paper, downstep will be abbreviated as DS and symbolized with a floating L ([™]) in underlying forms, and with a raised exclamation mark (!) in surface forms.

Methodology

This paper’s approach is both descriptive and empirical. The data were collected from seven purposely chosen native speakers in Ikhin town and one from Ibadan, using the Summer Institute of Linguistics’ 1000 wordlist and the University of Ibadan’s 400 basic item wordlist as it can be seen in www.open-science-repository.com (Oladimeji 2013). Traditional stories, interactions, descriptive remarks and isolated unelicited utterances all provided additional data. The data were analyzed using the computerised speech laboratory’s speech filing system (Oladimeji, 2021).

Literature on Downstep

Ikhin literature is rare. Folarin (1982) is the only existing linguistic study on this language. It focuses on the sound system of Ikhin. The alternate name for downstep is ‘non-automatic downstep’. It is derived from ‘automatic downstep’, which is itself called ‘downdrift’ (henceforth DD). It occurs where a series of High tones are progressively lowered by intervening low tones. The concept of downdrift is exemplified by Hyman (1975: 226) with a Hausa example:

1) Downdrift in Hausa

Bala da Shehu za su zo “Bala and Shehu will come”

L H L H L H L H

In this example, Ls and Hs are in decline and the final H is lower than the first L of greater importance is the fact that Hausa has DD but not DS, similarly, there are tone systems with DS but not DD. As we shall see below, only the Hausa type with DD but not DS is missing in the Edoid repertoire. Armstrong (1968), who was de-

scribing a three-tone Ikom (Yala) system, defined DD as the tendency of non-initial low tones to pull successive high and mid tones downwards in pitch.

Winston (1960) was the first scholar to discover downstep. That was when he was confronted with a confusing 'Mid' tone in Efik. This was followed by Steward (1965). His works on downstep were published in his booklet titled *The typology of the Twi tone system*, a pre-print of an article of the same title in the *Bulletin of the Institute of African Studies* of the University of Ghana at Legon. There he presented the outline of 'two tones plus downstep' systems. Thus, based on the confusion or complexity encountered in the review of a language with two tones that, scholars had assumed that downstep could not be expected in a three-tone language. That stand was short-lived as Armstrong (1968) presented a very convincing case for analysing Yala (Ikom) as a 'three tones plus downstep' system in the *Journal of West African Languages*. Courtenay (1969) described Yoruba as having a downstep while Adeniyi (2020) claims that downstep is part of the lexical composition of many Yoruba words. In a joint study by Adeniyi and Elugbe (2018) on Gwari, a West Benue- Congo language, spoken in Nigeria, they observe that high and mid tones are subject to downstepping. The debate as to whether or not Yoruba has a downstep is on going.

The genetic unity of the Edoid languages cannot be gainsaid. Geographically, Ghotuo is the closest language to Ikhin but they diverge typologically. Edoid language tone systems are one area where an interesting comparison can be made (Elugbe, 1989). Various scholars on Edoid languages have commented on their tone systems, however none has made any reference to Ikhin language in whatever form. Elugbe (1985) reports 'the classic terraced level type system is common in Edoid and is in fact the most widely reported'. This kind of system has automatic downstep (i.e. downdrift) as well as non-automatic downstep. This kind of system is reported for two languages in SWE – E,ru#wa (Akinkugbe 1973) and Urhobo (Aziza 1997). In NCE, it is reported for Edo (Amayo 1976), Yekhee (Etsako) (Elimel-ech 1976), and for Emai (Egbokhare 1990). The Oloma (NWE) system is very similar to that of Ye#khee. Our knowledge of tone in NWE is not as advanced or accurate as in the other arms of Edoid. As said earlier, no mention of Ikhin language is made in any of these scholarly works. Therefore, this study is the first linguistic investigation of 148downstep in Ikhin.

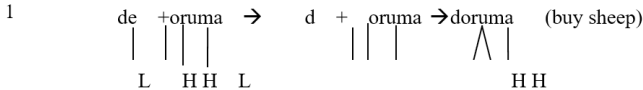
Theoretical Framework

Goldsmith's autosegmental theory (1990) is adopted in analysing and presenting the data on downstep in this language. Autosegmental representation is adopted for analysis of downstep in Ikhin because it is more of a theory of tone. Goldsmith (1990) claims that this theory is a direct continuation of the traditional work of generative phonology that was codified in Chomsky and Halle's *Sound Pattern of*

English (1968). In generative phonology, a complete set of features was proposed and principles for writing phonological representation were also proposed. However, phonological representation was still linear in the sense that it was a single line of representation.

John Goldsmith (1990) proposes two or more parallel tiers of phonological segments. According to him, each tier itself consists of a string of segments but the segments on each tier differ with regard to the features specified on them. Therefore, tonal features are represented on a separate tier independent of segmental tier, thus making tone autonomous such that vowels can delete while tone remains on its own tier and moves to an adjacent syllable in obedience to convention on maximal association.

Example:



The most fundamental characteristic of autosegmental theory is that phonological representation is non-linear, that is, that a phonological representation is composed, not of a single sequence of entities but of several parallel sequences of entities arranged in two or more tiers, each of which is said to be independent of the others (Aziza 1997). Hierarchical model of this theory is used in presenting the data.

Typological classification of Ikhin tone system

There are two tones and a downstep in Ikhin. The two tones, high (H) and low (L), are distinctive while the phenomenon ‘downstep’ is not phonemic. These basic tones are used contrastively. The analysis of Ikhin tone system as containing two tones and a downstep means that it is a terraced level tone system. Well known languages with the same type of tone system include Edo (Bini), Emai, both also North Central Edoid, Igbo (Igboid) and Akan (Akanoid). It, however, differs from Edo (Bini) in that downdrift (automatic downstep) affects only low tones in Ikhin while Edo (Bini) has downdrift that affects low (L) and high (H) and has a phenomenon of a disappearing low tone (Oladimeji, 2013).

Characteristics of Downstep in Ikhin

The basic trait of a downstep system is the gradual descending of the H tone in particular, in terrace-like steps (Elugbe 1985).

Some typical characteristics of downstep include;

- a. Downstep preserves an affected tone's phonological identity. A downstepped High tone remains a high tone.
- b. Downstep affects not a single tone but the tonal sequence in its domain.
- c. Downstep's effect is to change the register of what follows.
- d. It is phonologically different from a mid tone.

Ikhin is a terraced level tone system. The following characteristics are observed in Ikhin

as a language with terraced level tone system.

- after a L, the following tone can be a L, a H, but not a DS.
- after a H, following tone may be L, H, and a DS, and
- after a DS, only a L, a H of the same level as the DS, or another DS.

The third property implies that a DS sets a level above which no other subsequent tone can go.

Ikhin

- i. édá [- -] HH 'river'
- ii. ágbà [- _] HL 'jaw'
- iii. òrú [_ -] LH 'season'
- iv. ìmò [_ _] LL 'child'
- v. óy!óyò [- -] HDL (óyò + óyò → óy!óyò) 'everytime'

In the above data, the downstepped high tone (!H) is as a result of the deletion of the low toned vowel preceding the high tone at morpheme boundary following complete reduplication. This implies that downstep is not phonemic. It is as a result of a lost low tone.

The above restrictions are applicable to most languages with two tone and a downstep. However, in some other languages with two tones and a downstep such as Efik, the phenomenon 'downstep' is phonemic, that is, distinctive as it is shown in Efik data below:

Efik

- i. iyak [- -] H H 'fish'
- ii. ufɔk [_ -] H L 'house'
- iii. iwa [_ -] L H 'cassava'
- iv. eso [- -] L L 'pot'
- v. ɔbɔŋ [- -] H D 'chief'

The above shows that there are three contrasts after a high tone and two contrasts

after a low. The downstepped high tone in the above Efik examples contrasts with both low and high. Besides, It shows that there is no overt low tone at the surface to indicate the source of the key lowering.

Downstep and Downdrift

In current mainstream analysis, a two tone plus downstep system is regarded basically as a two system because the feature called ‘downdrift’ is simply the effect of low tones on the following high tones or in some cases high tones on the following low tones as well. Edo (Bini) and Hausa provide classical well defined effect of two tones system with downdrift. Edo has downdrift that affects low and high and has a phenomenon of a disappearing low tone. In Edo, when two low tones are separated by one or more high tones the second low is realized on a slightly lower pitch level than the first. The lowering of high and low tones can be shown in the following tonetic marking.

Examples:

Edo(Bini)

i) òwásè lé [- - _] ‘the leg of a cricket’

A sequence of low tones without an intervening high tone also drifts downward. However, the pitch lowering from one low tone to an immediately low tone is normally very small as shown below:

i. ògèdè [- - _] ‘plantain’

ii. òzòkpògyèvà [- - - _] ‘second-in-command’ (Amayo 1976)

Also, in Edo, a low tone that has lowered a high tone is lost in the surface structure. The loss of this conditioning low tone gives rise to many surface representations in which a tone is immediately followed by a lowered high tone.

Example:

/ édé + èné/ édé!né [- - -]

‘crown’ ‘four’ “four crowns”

The surface representation bears three high tones but the third high tone is lowered than the first two. The lowering of the third high tone is as a result of the deleted low tone. Data from Emai, another North Central Edoid language with two tones and a downstep , confirms that a lost low tone accounts for a downstepped high tone.

Emai (Reduplication)

/ édè/ édé + édé → édé!édè

‘day’ ‘daily’
 / ɔ̀dǎ́/ ɔ̀dǎ́ + ɔ̀dǎ́ ɔ̀dǎ́
 ‘different’ ‘many different’

Downstep in Morphemes and Sentences in Ikhin

Downstepped high tone is created in Ikhin morphemes when a low tone vowel preceding an high tone is deleted following complete reduplication.

Examples:

Input by reduplication by vowel elision

i) ɔ̀ɣò ɔ̀ɣò ɔ̀ɣò ɔ̀ɣò ɔ̀ɣ! ɔ̀ɣò

‘day’ ‘everyday’

ii) áǎǎ́ áǎǎ́ áǎǎ́ áǎ! áǎǎ́

‘night’ ‘everynight’

iii) éɣè éɣè éɣè éɣ! éɣè

‘time’ ‘everytime’

In Ikhin, downstep also occurs in sentences and is as a result of vowel elision. A high tone may be downstepped when a low toned vowel preceding the high toned vowel across a morpheme boundary is desyllabified:

i. ɔ̀ jǎ́ ètè → ɔ̀ j!ètè

he climb mountain ‘he climbs mountain’

ii. ɔ̀ dè é!à → ɔ̀ d!é!à

he buy cow ‘he buys a cow’

iii ɔ̀ gbè ákì → ɔ̀ gb!ákì

he kill toad ‘he kills a toad’

The low tone on each of the verbs above has lowered the following high tone in the underlying structure. The same low tone is lost in the surface structure. Various scholars have postulated a floating low tone as the main cause of downstep. Stewart (1965) holds that DS originates from a floating low tone preceding a higher or identical tone.

The above examples confirm that a high tone is realized at a lower pitch level than a preceding high tone without any apparent conditioning factor (Connell and Ladd 1990). This implies that low tone is a very important trigger of key lowering in most languages with downstep. Even in Yoruba, Adeniyi (2020) claims that ‘Yoruba is developing downstep via assimilated Low Tone, and that this process has now reached an advanced stage’

Therefore, to postulate a floating low tone for downstepped high tone in Ikhin is not out of place. When languages undergo processes of vowel elision, there

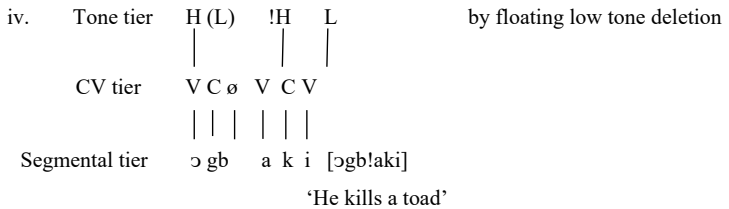
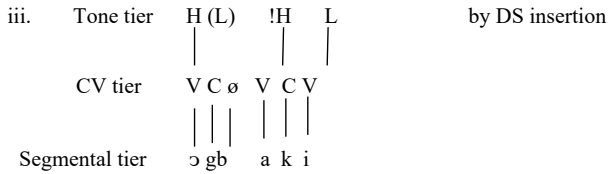
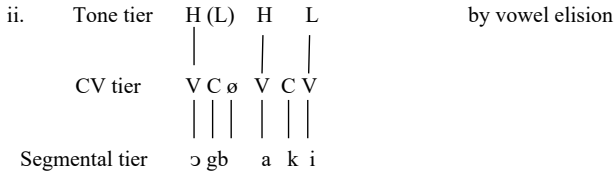
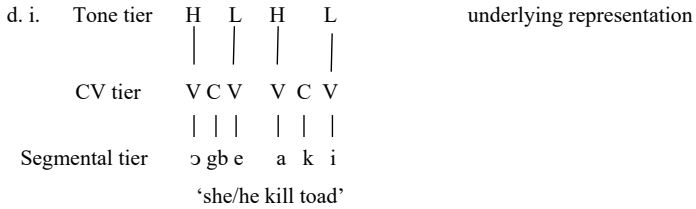
iv.	Tone tier	H (L)	!H	L	by floating low tone deletion	
	CV tier	V C	∅	V C V		
	Segmental tier	ε γ	ε γ	ε	[éγ!éγè]	

c. i.	Tone tier	H	L	H	L	underlying representation	
	CV tier	V C V	V C V	V C V	V C V		
	Segmental tier	ɔ	d	ε	ε	l	a

ii.	Tone tier	H (L)	H	L	by vowel elision		
	CV tier	V C ∅	V C V	V C V			
	Segmental tier	ɔ	d	ε	ε	l	a

iii.	Tone tier	H (L)	!H	L	by DS insertion	
	CV tier	V C ∅	V C V	V C V		
	Segmental tier	ɔ	d	ε	l	a

iv.	Tone tier	H (L)	!H	L	by floating low tone deletion		
	CV tier	V C ∅	V C V	V C V			
	Segmental tier	ɔ	d	ε	l	a	[ɔd!ɛla]



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