

THE TONE SYSTEM OF UHÀMÌ

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Abstract

Uhàmi is an understudied endangered Edoid language spoken in Ondo State, Nigeria. Although Edoid languages have been typologised as having two-tone systems except with few exceptions, Uhàmi tone system, in particular has not been systematically typologised. This study therefore presents a description of its tone system. Pitch tracks are extensively presented as empirical evidence of identified patterns. The results show that Uhàmi has a terraced level tone system with three underlying level tones namely the high (H), mid (M) and low (L) tones. All the three underlying tones were shown to be phonemically contrastive because they appear in phonetically unpredictable environments. Uhàmi also has widespread downstepped M while only traces of downstepped H were found. However, there is downdrift H which can occur iteratively, giving the classical terracing effect. It was also found that the high-falling (HF) and mid-falling (MF) contour tones which fall from the level of the preceding H and M respectively, occur in environments that appear to be contrastive but the two contours are restricted to the final position and lack distributional fluidity expected of tonemes. They are posited to be evidence of change in progress that needs to be tracked.

Keywords: *Edoid, tone contrast, tone typology, tonemes*

1. Introduction

About 50% of the world's languages are tonal; hence, there is still much more for phonologists and others to learn from tone (Hyman, 2007). Among the languages whose tone systems need the attention of phonologists is Uhàmi. It is an Edoid language spoken in a Yoruba-dominated area of Ondo State in the Southwestern part of

Nigeria. Although Eberhard et al (2025) claim that it is spoken by about 10,000 to 1,000,000 people, a physical assessment in the course of field work suggests that the actual population of its speakers is only about 20,000. It is indigenously spoken at Ìṣùà-Òkè and Ìṣua-Ilẹ̀ in Akoko South-East Local Government of Ondo State, Nigeria. It is a West Benue-Congo language under the Akedoid group (Lewis 2013; Elugbe, 2013).

As an endangered language, very little scholarly work has been done on the general description of the language. Among the few existing studies in Uhami are Elugbe (1973), Owoyele (2016) and Afeez (2024). Elugbe (1973) posits that Uhami has two underlying level tones, that is, the H and the M with downstep and downdrift. He states that there is a third level which he could not state categorically whether it is a third level tone or a downstep. Owoyele (2016) and Afeez (2024) claim that Uhami has three level tones but with minimal proof. Therefore, an identification of the underlying tones, a description of the distributional patterns of the tones as well as the presentation of other tonal properties in Uhami become significant in outlining the typology of the tone system of the language. This is the gap that this study addresses.

2. Tone and the Tonal Typology of Edoid Languages

Pike (1948) defines a tone language as one lexically significant, contrastive, but relative pitch on each syllable; while Hyman (2001; 2006) define a tone language as one “... in which an indication of pitch enters into the lexical realization of at least some morphemes.” Tone languages are typologised into two: register and contour systems, based on the kinds of tones they exhibit. Contour systems differ from register systems in many ways. One of these is the basic tonemic unit. In a contour tone system, the basic tonemic units are gliding tones that cannot be interrupted by morphemic boundaries. Also, the beginning and ending points of gliding tones in a contour tone system cannot be equated with level tones. On the other hand, gliding or contour tones in a register system are non-phonemic, and their beginning and ending points are usually equated

with level tones (Adeniyi, 2015). Hence; a contour tone is a property of a register tone system while a contour system is an independent tone system in a language (Ajani, 2023). For instance, in Yoruba, a High tone which occurs after a Low results in a rising tone as a result of the preceding Low that spreads to it (Bamgbose, 1990). This rising tone is a variant of the High tone (1a-b).

- (1) a. ìyá → ìyǎ ‘mother’
 b. ànà → ànǎ ‘yesterday’

A register tone system can either be discrete level or terraced level in nature (Welmers, 1973). In a discrete system, tones are defined in terms of steady levels of pitch, because pitch does not fluctuate perceptually within the pitch range in such systems (Elugbe, 1985). In a terraced level tone system, the pitch ranges of tone overlap with each other, especially in a long sequence. Classical features of terraced level tone system are downstep and downdrift (Elugbe, 1985). Downstep refers to the lowering of high tones where the conditioning intervening low tones are lost (Elimelech, 1976). Elugbe (1985) defines downstep as the non-automatic lowering of successive highs, in situations where no low tone exists phonetically. In other words, downstep is a feature where a tone is realized on a lower level than preceding similar tones with no immediate phonetic indication of the cause. Such systems exhibiting this are Igbo, Tiv, Edo (Bini), Twi (Akan), and Yala (Ikom) (Adeniyi, 2009). In these languages, tones are realized on lower pitch levels than they initially were in the phrase. In (1) below, Adeniyi (2015) finds that the second H is phonetically realised as a downstep in the output in Ebirá. In Figure 1, the pitch of the first H is 122Hz while that of the second H is realised as 87Hz. This shows that the difference between the pitch of the first H and that of the second H is 25Hz.

- (2) òtá àdà → òtá⁺dá
 friend father ‘father’s ‘friend’

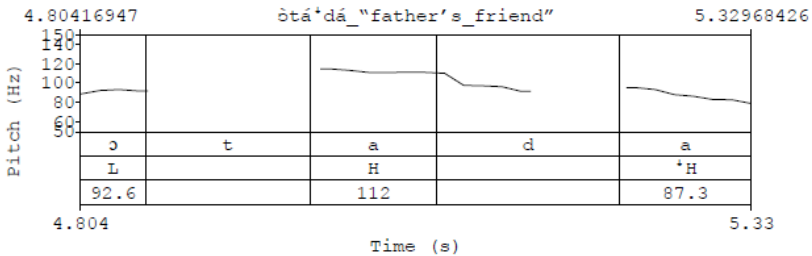


Fig 1: Pitch track of ô tá' dá' 'father's friend' showing downstep H (Adeniyi, 2015)

It has also been found that M triggers downstep in some languages such as Igala and Yala (Ikom) (Adeniyi, 2015)

Downdrift

Downdrift in tone languages is the tendency of non-initial low tones to pull the pitches of following non-low tones downwards (Armstrong 1968). That is, subsequent level pitches are progressively lowered (Urua, 2001). Downdrift is alternatively referred to as “key lowering” (Stewart, 1971) and “automatic downstep” (Clements, 1979; Elugbe, 1985). It is the lowering of the height of the same tones within a tone group (Ohala, 1978; Clements, 1979). This process commonly features in African languages, therefore, the second High in a HLH sequence is usually lower than the first (Hyman, 1975; Hyman & Schuh, 1972). Example (3) is an illustration of downdrift in an utterance in Ibibio (Connell, 2001:3), where the phrase begins with a sequence of H tones followed by a L and then another sequence of H tones. The second sequence of H tones is realized on a lower pitch than the first sequence of H as a result of the effect of the intervening L.

1. (3) ékíkéré yè úkára ídém → [— — — — — — — —]
2. 'thought and self-rule'

However, in some languages, initial L and M also trigger downdrift (Adeniyi, 2020). Edoid languages are typically two-tone system.

Elugbe (2009) typologises Edoid languages as one of the types in

- (4) a. two discrete tones, no downdrift or downstep;
 b. two tones plus downstep and downdrift;
 c. two tones and a downstep, but no downdrift.

Emai is a two-tone system with downstep (Egbokhare, 1990); Urhobo is a two-tone system with downstep (Aziza, 1997); Edo is also a two-tone system with downstep (Omozuwa, 2010); Ikhin is a two-tone system with downstep, (Oladimeji, 2010), and Ososo operates a two-tone system with downstep (Legbeti, 2022); Oloma operates a two level tone system with two contrastive contour and downstep (Ajani, 2023). From the assertion of Elugbe (2009), it is clear that downstep is a feature of Edoid languages. Edoid languages with three-tone system are very rare. Example is Ghotuo which is a three-tone language with downstep (Elugbe, 1985; Adeniyi, 2015)

Phonemic contours are uncommon phenomena in Edoid languages. Nevertheless, Ajani (2023) provides data in Oloma, an Edoid language with a discrete level tone system where contour overlap is both phonetic and phonemic. He states that the contour tones $\widehat{H}\bar{L}$ (falling contour) and $\bar{L}\widehat{H}$ (rising contour) contrast with level tones in word initial position, and they appear on nouns and disyllabic verbs. Phonetic contours on the other hand are realised from glide formation. (5a-b) are examples of phonemic contours while (5c-d) are phonetic contours that result from glide formation; hence are phonetic.

- (5) a. gôîè ‘where’
 góîè ‘road’
 b. ô[↓]mú ‘blunt’
 ô[↓]mú ‘sharp’
 c. ghíà → gbjâ ‘laugh’
 d. víè → vjê ‘weep’

While Elugbe (1973) suggests that Uhami has two level tones (the H and M tones), he did not go into the details of these tones. He also

speculates about the possibility of a third level. Awoyele (2016) posits three level tones for Uhami and is quiet about other tones and tone features in the language.

3. Methodology

Data for this study were elicited from 30 language assistants who resided in Işua-Oke. These include 17 male and 13 female language consultants within the ages of 50-70 years. Data were compared and those that deviated significantly from the majority were discarded. The SIL 1700 wordlist and Ibadan 400 word list were employed as instruments for data elicitation. In addition to the wordlists, syntactic frames and constructions purposively designed to elicit tonal phenomena were used.

Zoom H5N digital recorder was used for the recording of data. The data elicited from the language consultants were transcribed on the spot. Data were transferred from the memory card into a computer for spectrographic analysis using version (6.0.23) of the PRAAT software by Boersma and Weenink (2025). Data analysis involved both perception and acoustic investigation of pitch by using PRAAT

4. Data Presentation

Three tone levels, High (“H” [ˀ]), Mid (“M” [ˁ] usually unmarked) and Low (“L” [ˁ]) tones contrast phonemically in Uhami. Although, there are no minimal sets to establish a phonemic contrast among the three level tones at once, there are minimal pairs that show the contrast between the pairs of H and L, H and M, and L and M. This three-way contrast is shown in the disyllabic nouns in examples (6a-c). The H and the L contrast in medial position in (6a). In (6b), the H and the M contrast in initial position, while the M and L contrast in initial position in (6c).

- (6) a. ɓvóvò ‘stench’
 ɓvòvò ‘heat’
 b. ófià ‘tree’
 òfià ‘God’

- c. òvò ‘sun’
 ōvò ‘leg’

4.1 Tonemes and their Phonetic Variants

Just as segments are influenced by their environments and tend to fluctuate (Pike, 1948), tones are also influenced by their environment in Benue-Congo Languages (Adeniyi, 2016). Tones in Uhami, as a Benue-Congo language, also influence one another. This influence then reveals the phonemic status of each tone.

4.1.1 The High Tone

The H occurs in word initial, medial and final positions. It is realised as a level tone in word initial position and after another H (7a-c). The H is also realised as a level tone after M (8a-c). In all of the environments, it is neither lowered nor raised.

- (7) a. ódá ‘one’
 b. úná ‘snail’
 c. úgbú ‘a type of lizard’
- (8) a. òdé ‘house’
 b. ìkúmè ‘okra’
 c. ěgbá ‘mat’

The H is realised as anLH rising contour tone when it occurs after an L. The contour is realised through spreading of the preceding L on to the following H. In (9a-b), the initial Ls spread on to the Hs that follow them and the Hs are realised as a phonetic rising contours in the output. The pitch track in Figure (2) below shows a H that is realised as a rising contour immediately after an L, the fundamental frequency of the contour begins at 131Hz and then rises to 144Hz towards the end of the tone bearing unit (TBU). This represents a rise of 13Hz which is both perceptually and acoustically significant.

- (9) a. /ìgbé/ → [ìgbě] ‘ten’
 b. /ěvǎ/ → [ěvǎ] ‘two’

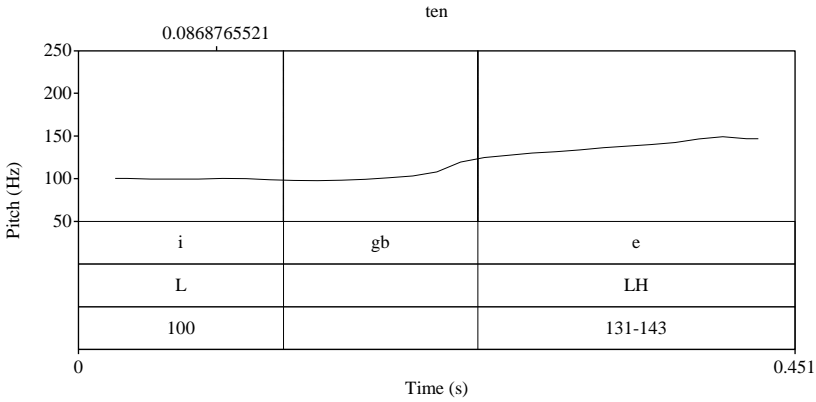


Figure 2: Pitch track of *ìgbé* ‘ten’ showing the rising of H after L.

4.1.1.2 Downdrift High

The H is downdrifted by a non-initial L that occurs before it. In (10a), the initial H on *á* in the utterance is realised at 239Hz while the pitches of the subsequent Hs on *bólá zí* are lowered after the non-initial L on *nì* are realised at 206Hz, 200Hz and 198Hz respectively. This shows that the H after the second L is downdrifted by the preceding L.

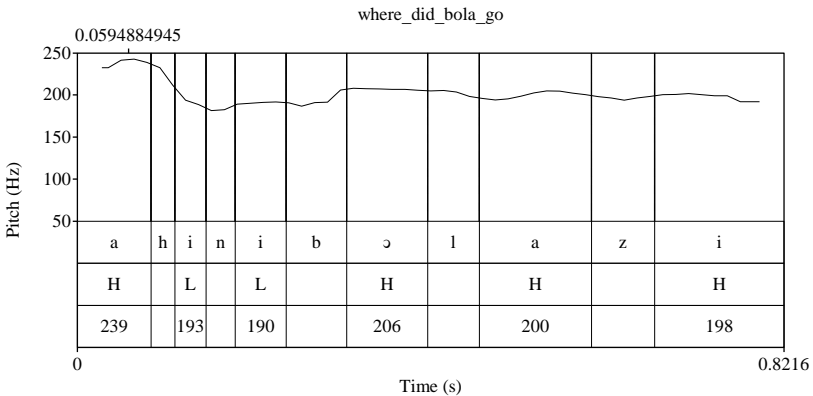


Fig. 3: Pitch track of *áhìnì bólá zí?* ‘where did Bọla go?’ showing downdrift H

- (10) a. áhìní bólá zì?
 where Bóla go-NFUT
 ‘where did bola go?’
 b. /áhìní nì úná ví/ → [áhìnínúnází]
 where be-NFUT snail be ‘where is snail?’

4.1.1.3 Downstep High?

The H has traces of downstep when it occurs after an L that is set afloat as a result of displacement. In the attributive constructions in (11) below, the Mid morpheme replaces the final L of the head noun and the L is set afloat. However, the floating L has a phonetic effect on the succeeding H such that the H is lower than the H that precedes the preceding H. Therefore, the pitch of the initial H on the modifier is lowered in the output.

- (11) a. *ólútà* - *géní* → *ólútà⁺géní*
 cassava AM little ‘little cassava’
 b. *úfiè* - *géní* → *úfjē⁺géní*
 door AM little ‘little door’
 c. *orì* - *tété* → *orī⁺tété*
 food AM all ‘all foods’
 d. *íkúmè* - *tété* → *íkúmē⁺tété*
 okro AM all ‘all okros’

The pitch track of (11a) is presented in Figure 4. Observe first that the L on the final TBU of the *ólútà* ‘cassava’ in the input is not realised in the output. Also note that the H in *gé* which is the first TBU in *géní* ‘little’ is the first tone after the slot where the final L on *ólútà* ‘cassava’ is displaced by the M tonal morpheme. The displaced L is set afloat; hence, causes the lowering of the H on *gé* in the output. Specifically, in Figure 5, the pitch of *gē* is realised at 136Hz which is 9Hz lower than *ú* in *ólútà*. This kind of lowering is a feature of downstep (Adeniyi, 2015; 2021), although, a lowering of 9Hz is not so significant to classify it under traditional downstep. Downstepped H in Uhami is characterised by either this kind of minimal lowering or an outright lack of lowering. This non-systematic nature of downstepped H suggests that it cannot be categorically said to be there.

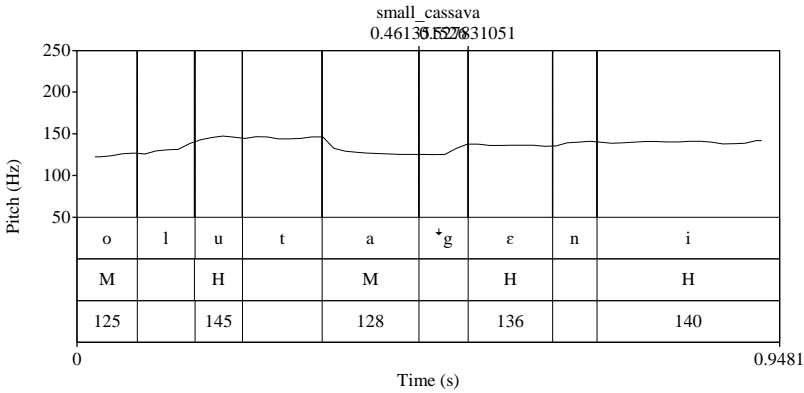


Fig. 4. Pitch track of *ōlūtā[↓] gēni* ‘little cassava’ showing downstepped H.

Figure 6 contains the pitch track of the output of example (11b), where the pitch of the second H in *úfjē gēni* ‘small door’ in Figure 5 is lower than the first H as a result of the lost L on *úfjē* ‘door’. The pitch of first H is realised on 133Hz; while the pitch of the second H is realised on 128Hz. This makes a difference of only 5Hz which is also a marginal lowering. This supports the observation above that although there is lowering in some instances of floating L, this is neither significant nor systematic enough to be regarded as downstepped H.

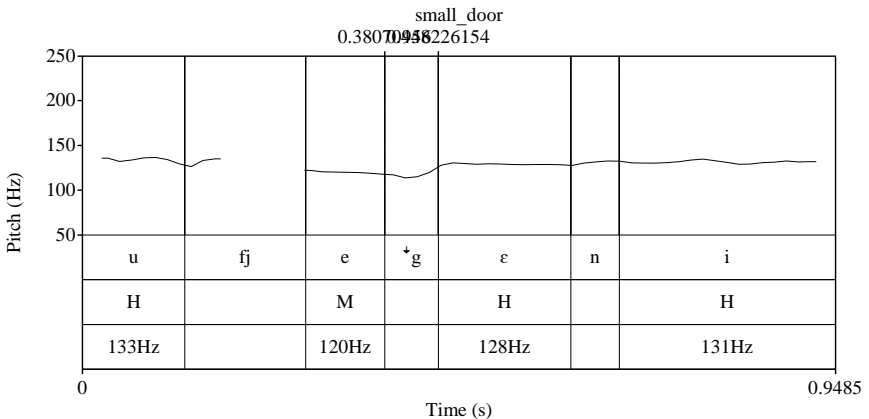


Fig. 5. Pitch track of *úfjē[↓] gēni* ‘little door’ showing downstepped H.

It is worthy of note that there is no terracing in downstep like lowering of H in Uhami. That is, there is no level setting for the subsequent Hs which occur after the supposed downstepped H. It is only the pitch of the H that occurs after a floating L that is lowered, the pitch of the subsequent H is even higher. The insignificant lowering (Figures 5 and 6) and lack of terracing are consistent in the language.

4.1.2 The Mid Tone

The M tone occurs in all positions; that is, word initially, medially and final positions. The Mid tone occurs as a level tone in the initial position and after a H. It can co-occur with the H and the L. The M occurs in initial position before H, L, and Min (12a-c) respectively. The M occurs, in medial position in (13a-b) and final position in (14a-b)

- | | | |
|---------|-----------|-------------|
| (12) a. | ōdé | ‘house’ |
| | b. ūvā | ‘bone’ |
| | c. hārā | ‘bitter’ |
| (13) a. | ējēri | ‘urine’ |
| | b. ésulé | ‘hawk’ |
| (14) a. | órō | ‘which’ |
| | b. òkpàdō | ‘groundnut’ |

4.1.2.1 Downstepped Mid

The Mid tone is downstepped when it occurs after a floating L that is displaced and in turn set afloat. There are at least two factors responsible for tones being set afloat during vowel sequence reduction (15a) or tonal docking (11a-d). In (15a-b), the Ms on the first TBU of ūlōlō and āwà are downstepped by the floating L that immediately precede them. The floating Ls are not phonetically realised in the output but their effect is seen in the lowering of the M that follows them. The floating L that precedes the downstepped M in (15a) is set afloat as a result of the deletion of the segment *ne* that carries it. The floating L in (15b) on the other hand is realised through the displacement of the L by an M tonal morpheme. The

pitch track of (15a) is presented in Figure 7, where the pitch of the downstepped M is realised at 176Hz; which is 58Hz lower than the M immediately preceding it, which is realised at 235Hz.

- (15) a. /kólá mīnè ūlōlō/ → [kólá mī⁺nūlōlō]
 Kola see-N-FUT hoe ‘Kola saw hoe’
 b. /óri - āwà rì/ → [óri⁺āwà rì]
 food AM 1-PL eatN-FUT ‘food that we ate’

Figure 6 shows further that downstepped M sets level for subsequent Ms. The pitch of the succeeding Ms on *lōlō* are realised as 163Hz and 153Hz respectively. The lowering of the pitches of the M in *nū* and the level setting of the succeeding M in *lōlō* is a clear support for postulating downstep. Also, in Figure 7, which is the pitch track of the output of (15b), the L on *óri* ‘food’ is replaced with an M tonal morpheme which is the noun-relative clause attributive marker (AM). The L is left floating in the output as a result of which the Ms that follow it are downstepped.

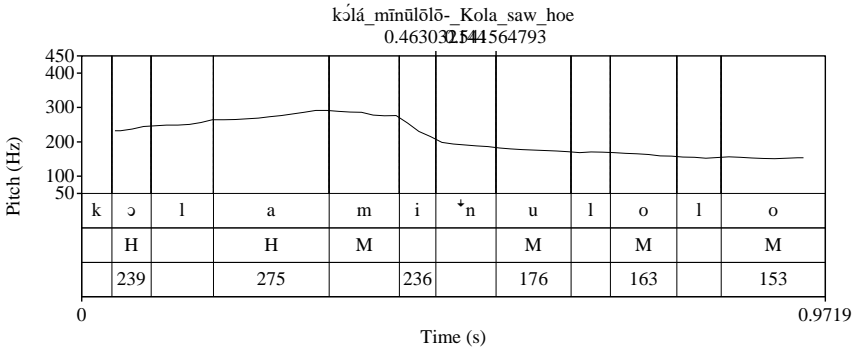


Fig. 6. Pitch track of *kólá mī⁺nūlōlō* ‘Kólá saw hoe’ showing downstep M.

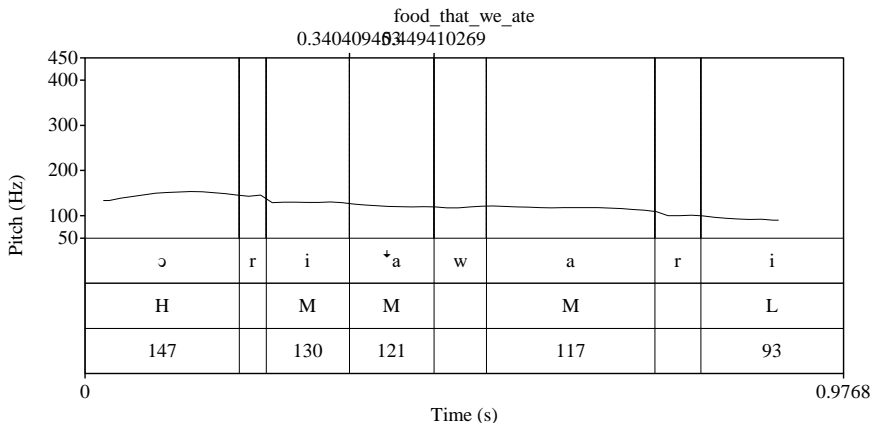


Fig. 7. Pitch track of *órí*āwā rì* ‘food that we ate’ showing downstep M

4.1.3 The Low Tone

The L occurs in all positions. It also occurs before and after other tones. It occurs in initial position followed by each of the three level forms L, M and H in (16a-c), medial position after H and M in (17a-b) respectively and final position in (18a-b). The L is realised as a high falling contour after a H in (19a-c).

- (16) a. òkpádō ‘groundnut’
 b. ìjēnā ‘seven’
 c. òkòkò ‘hen’
- (17) a. ógbàrù ‘forward’
 b. ìlèlè ‘heat’
- (18) a. ikúmè ‘okro’
 b. ēnāmi ‘meat’
- (19) a. /útʃi/ → [útʃi] ‘he-goat’
 b. /ésà/ → [ésà] ‘three’
 c. /óri/ → [óri] ‘food’

The pitch track in Figure 8 shows the falling of the L after the H in útʃi ‘he-goat’ from 125Hz to 112Hz

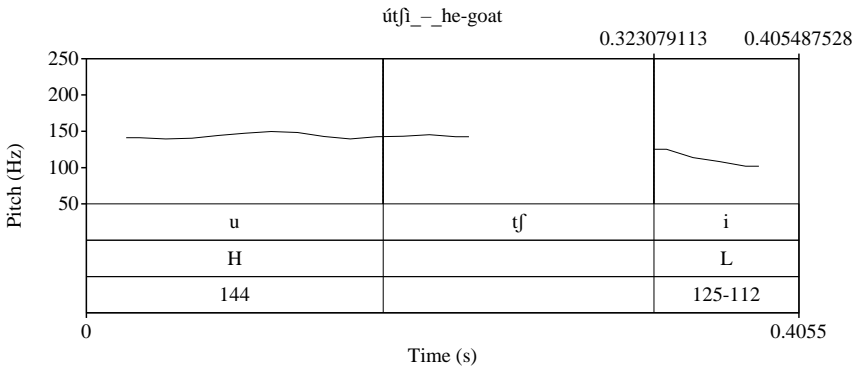


Fig. 8. Pitch track of útî 'he-goat' showing the phonetic fall of L after H.

There is declination of successive Ls occurs in Uhami. The pitches of successive Ls fall gradually as a result of reduction in sub-glottal pressure. In (20a-c), there is declination in successive Ls.

- (20) a. èrèvi 'kolanut'
 b. òkòkò 'hen'
 c. òfùfùà 'room'

Figure 9 shows the initial L is 115Hz, the medial L is realised as 113Hz, while the final L is realised as 107Hz. Although this is not significant, the decline in pitch is consistent in Uhami.

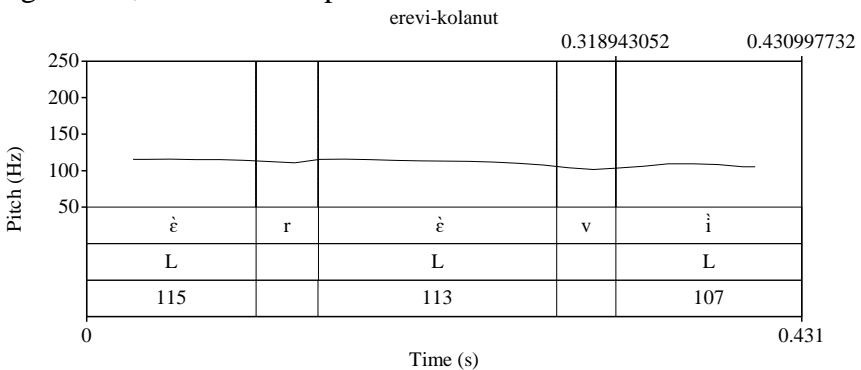


Fig. 9. Pitch track of èrèvi 'kolanut' showing the downglide and declination of successive Ls.

4.1.4 Mid-Falling (MF) Contour

The MF in Uhami occurs mainly in word final position. Although, the MF contour is in parallel distribution with the L as it contrasts with the L and H respectively in final positions as seen in (21&22), it can still be said to be phonetic because it can be simplified when it is combined with other tones in a syntactic constructions.

- (21) a. ɔ̃vɔ̃vɔ̃ ‘heat’
- b. ɔ̃vɔ̃vɔ̃̃ ‘thigh’
- (22) a. ɪkúkū ‘orange’
- b. ɪkúkù ‘dirt’

Figures 10 and 11 show the acoustic distinction between the MF contour and L in word-final position. The MF contour begins from 161 Hz and ends at 153Hz in Figure 10; while the L is realised as 138Hz in Figure 13.

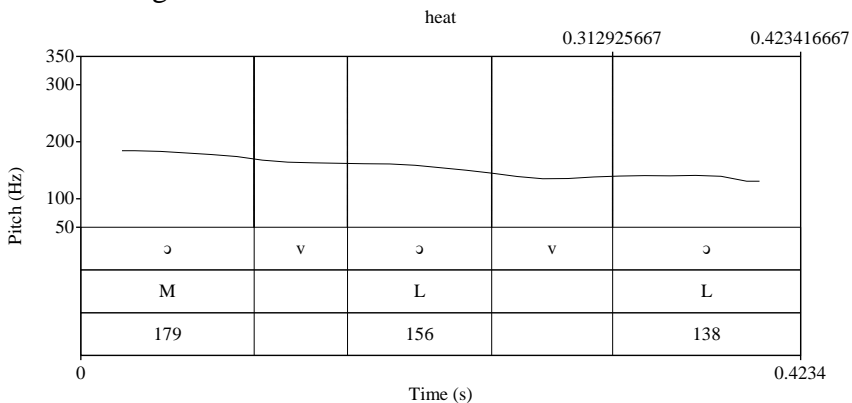


Fig. 10. Pitch track of ɔ̃vɔ̃vɔ̃ ‘heat’ showing a phonemic L in word final position.

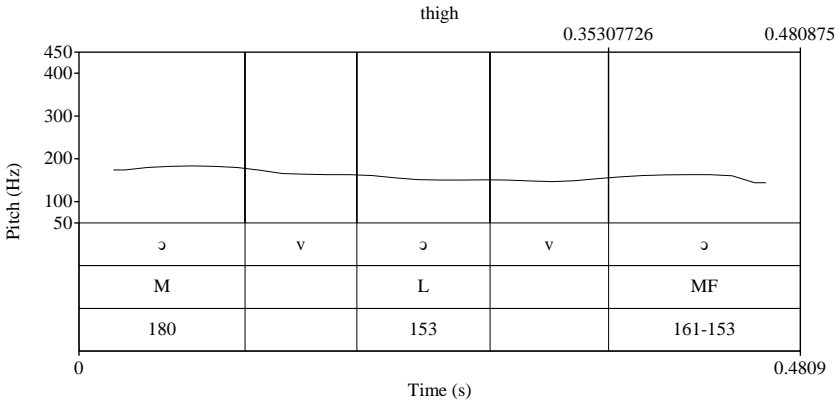


Fig. 11. Pitch track of ɔ̀vɔ̀vɔ̀́ ‘thigh’

The High-falling (HF) Contour

Uhami has a phonetic HF contour tone although it is in parallel distribution with the MF contour as in (24). It also occurs in other lexical items though not in parallel distribution in (25). The HF contour occurs only in word final position before M. This is a restricted environment which does cut across all positions in the distribution; hence, it is not phonemically contrastive.

- (24) a. ēhū́ ‘hair’
 b. ēhû ‘rival’
- (25) a. ɔ̀mê ‘female’
 b. ēvê ‘cloth’

In Figures 12 and 13, the MF contour and the HF contour are in parallel distribution. They contrast in word final position. The pitch of the MF contour begins from 197Hz and ends at 169Hz in Figure 12; while the pitch of the HF contour begins from 265Hz and ends at 167Hz in Figure 13.

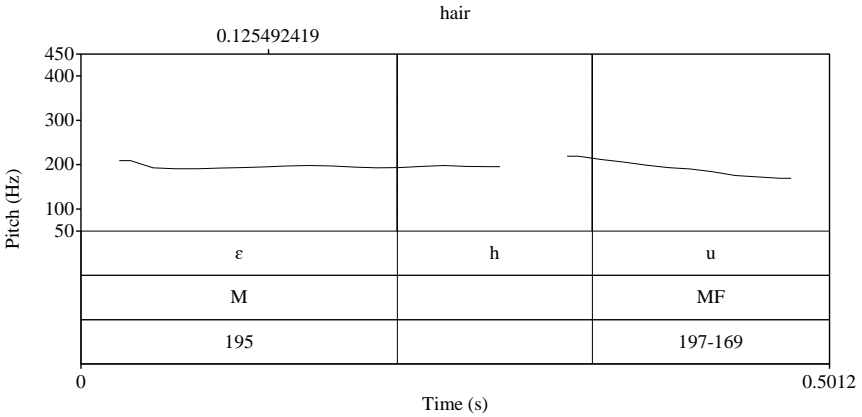


Fig. 12. Pitch track of *ēhū* ‘hair’ showing MF in word-final position

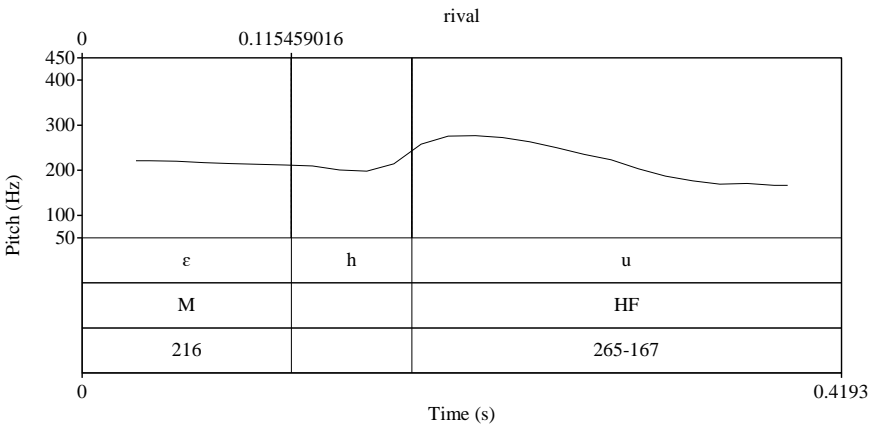


Fig. 13. Pitch track of *ēhū* ‘rival’ showing HF contour in word-final position.

The contour tones when interacting with other tones in syntactic strings become simplified. This further suggests that they are not phonemic in nature. In (26) below, the contours are simplified to level tones. In (26a-b), the HF contour is simplified to H. Therefore, the HF is a variant of H. The MF contour is simplified to M in (27a-b); hence, it is a variant of M.

- (26) a. $\bar{\omega}m\acute{e}$ $m\grave{e}$ → $\bar{\omega}m\acute{e} m\grave{e}$
 woman 1-SG-POSS ‘my woman’

b. ēhû	āwà	→	ēhú āwà
rival	3-PL-POSS		‘our rival’
(27) a. ēhū	vè	→	ēhū vè
hair	3-SG-POSS		‘his hair’
b. òv̄òv̄	gò	→	òv̄òv̄ gò
thigh	2-SG-POSS		‘your thigh’

4.2 The Typology of the Tone system of Uhami

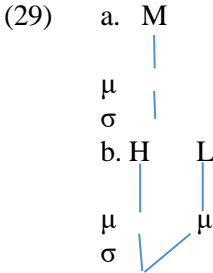
From the tonal distribution and interactions discussed so far, the typology of the Uhami tone system is summarised in (27) below.

- (28) a. There are three phonemic level tones (H, M and L) and two phonemic contour tones (Mid-Falling and High-Falling) in Uhami.
- b. The H has four allotones, which are the LH contour, the HF contour downdrift H, and the H.
- c. The M has three allotones: the downstep M, the MF contour and the M.
- d. The L has two allotones: the phonetic H-Falling contour and the L.
- e. Uhami has downdrift H and downstepped M.

4.4 Tone-Bearing Unit in Uhàmi

The finding that Uhami has contrastive contour tones throws up the question of what the tone-bearing unit is. The tone-bearing unit (TBU) is the element in the syllabic structure to which tones linked. This may be a syllable, a vowel or a mora (Yip, 2002; Gussenhoven, 2004). Moras are weight units of syllables: light syllables have one mora and heavy syllables have two moras (Salfner, 2009). Heavy syllables are those that characterise long vowels. In Uhàmi, there are syllables or vowels that bear contour tones. If the syllable is the tone bearing unit in Uhàmi, there is no way for phonemic contour tones to exist in the language. Therefore it is posited that the mora is the (TBU) in Uhami because in a situation where there is a contour tone on a vowel, the first tone in the contour is borne by the first mora; while the second mora bears the second tone in the contour. On the other hand, where there is a level tone on a syllable in Uhàmi, the syllable has only one mora. In the schema in (29a) below, first

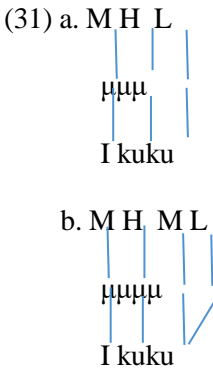
syllable has only one mora; while the second syllable in (29b) consists of two moras because it has a contour tone.



Short vowels in Uhami have one mora while long vowels have two moras. This is exemplified in the lexical items in (30) below. The last vowel on *íkúkù* ‘dirt’ is short; hence, it has one mora which bears one tone. The last vowel on *íkúkū* ‘orange’ is long; therefore, it has two moras and has a mid-falling contour tone.

- (30) a. *íkúkù* ‘dirt’
 b. *íkúkū* ‘orange’

The Autosegmental representations of (30a-b) are presented in (31a-b) respectively. The item in (31a) has mono-moraic syllables all through, therefore each mora is linked to each syllable. In (31b) the last syllable is a heavy one which consists of two moras which are linked to one syllable.



Moreover, grammatical tones can lengthen a vowel on which it docks. When a grammatical tone forms a contour with the inherent

tone on a lexical item, the vowel on which it docks becomes bimoraic. In (32) below, *mì* → *mǐ* ‘I’ a low tone changes to a rising tone because the grammatical high tone which marks negation forms a contour with the inherent low tone which makes the vowel to be lengthened.

- (32) a. *mì* *visè*
 1SG N-FUT sleep
 mì *vīsè* ‘I slept’
 b. *mì* *visè* → *mǐ* *vīsè*
 1SG N-FUT NEG sleep ‘I did not sleep’

Conclusion

This study investigated the tone system of Uhami. It is found that Uhami has threephonemically contrastive level tones H, M and L. The H has three phonetic realisations which are the HF, LR, downdrift H, andH. The M has two allotones which are MF, ⁺M and M. The L has two allotones: L and HF contour. There is only a trace of downstep H because lowering of H after a lost low is not significant and there is no level setting in such situation. Downstep M behaves in the conventional way, that is, there is significant lowering of M after a lost L and it can occur iteratively. Uhami tone system is therefore terraced level in type.

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