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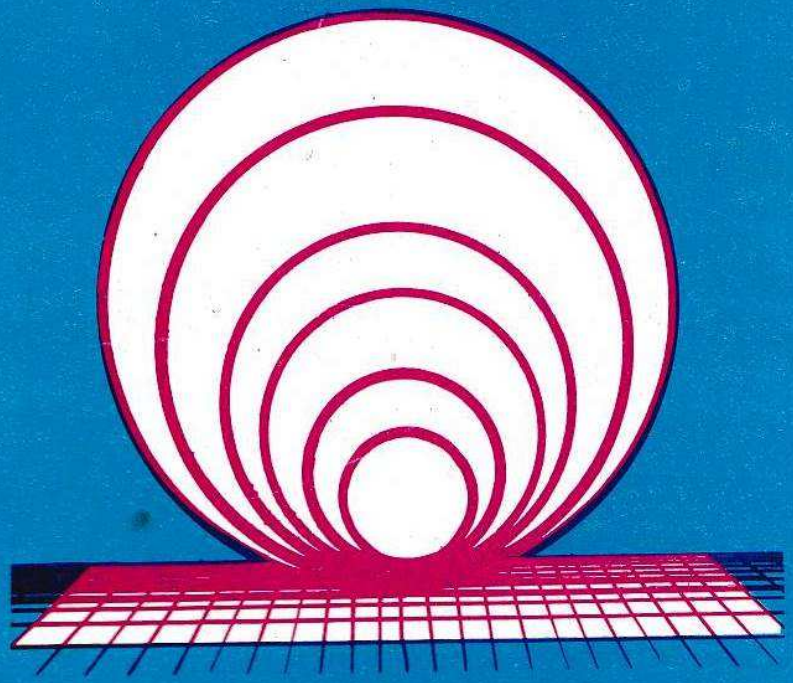

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VOWEL DELETION IN ANAANG[1]

By

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Abstract.

Vowel deletion, a rather common phonological process in most languages is the loss of some vowel segments in certain environments. Its occurrence in Ibibio has been explored in Urua (1987, 1990), Essien (1990), with particular reference to its conditioning. Since Anaang, like Ibibio and Efik, is a Lower Cross Language of the Delta Cross (Williamson, 1989), it follows by implication that vowel deletion in Anaang may also be so conditioned. This paper attempts to explore this phenomenon in Anaang and to find out whether its occurrence is conditioned in the same way as in Ibibio. Attempts are also made to look at some processes related to vowel deletion such as: tonal relinking, vowel coalescence and glide formation, among others. This is done within the Autosegmental framework.

1.0 Introduction.

Deletion is the omission of sound segments in certain environments in connected speech. It is also sometimes referred to as 'elision'. (Crystal, 1991:119). Although this can affect both consonants and vowels, our emphasis here is on the deletion of vowel segments and other phonological processes associated with such deletions in the Anaang language.

The Anaang variety of The Lower Cross languages is one of the varieties spoken in the present Akwa Ibom State of Nigeria. It is one of the varieties which is very closely related to Ibibio and Efik. Several genetic classifications have been put up for it. Greenberg (1963) groups Anaang - Efik -Ibibio as a cluster of the Benue-Congo branch of the Niger-Congo language family. Williamson (1989) subgroups Anaang-Ibibio-Efik under the Lower Cross of the larger Benue-Congo subgroup of the Niger-Congo. More recently, Urua1994, classified the Ibibio - Anaang as dialect clusters among other varieties spoken in Akwa Ibom State. Between these classifications, there have been many modifications; all of which group the three varieties together. This gives credence to the fact that considering purely linguistic data, the three varieties are very closely related. However, since linguistic decisions are very much tied down to ethnicism and the need of the speakers of the language to create some kind of identity for themselves, it is not surprising that speakers of these varieties consider their different varieties as distinct languages.

We are here considering purely linguistic phenomena. We would like to refer to Anaang and Ibibio as varieties of the Lower Cross Language for the purpose of

comparison of deletion and the attendant phonological processes associated with it in these two varieties.

The data for this paper were got from several sources. The Ibibio data are drawn mostly from Urua 1990. Since one of the aims of this paper is to show whether deletion in Anaang is as conditioned as deletion in Ibibio, it became necessary to compare data from Ibibio and Anaang. The Anaang data were got from Anaang native speakers.[2]

Anaang has a twelve-vowel system represented in 1 a, b (Idem 1994). The pure vowels in 1a glide towards /ʉ/ to form the five glides in 1b. They also have germinates which they contrast with given in 1c.[3]

1. a. / i e a ɔ o u ʉ /
   b. / ai ɔi oi ui ʉi /
   c. / ii ee aa ɔɔ oo uu ʉʉ /

Note that there is length opposition in Anaang. Generally, length indicates plurality and many other words are distinguished by length as the following examples show:

d.	díp	-	hide something
	díip	-	hide many things
e.	bòm	-	break something
	bòòm	-	break many things
f.	bàk	-	be early
	bààk	-	buy
g.	kɔ́n	-	cough
	kɔ́ɔ́n	-	hang
h.	wùt	-	inform
	wùùt	-	bury
i.	fút	-	be noisy
	fúút	-	swell

The tonal system is very much like the Ibibio tonal pattern.[4] It has two simple tones : high / ˊ /and low / ˋ / and a downstep /!H/. The high and low tones form complex patterns giving rise to Rising /ˇ/ and /ˆ/ Falling tones.

Vowel deletion before the Autosegmental Phonology (AP) was treated within the Generative Phonology (GP). The latter theory was basically linear in representation. Its analysis of segments in strings has been the main criticism of the theory with what Schane (1979) calls 'simultaneously occurring feature' analysis. The GP accounts for deletion with the following rule:

2. a. A ------> Ø / X --- Y following the pattern
b. A ------> B / C --- D

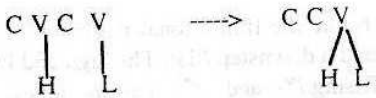
This kind of analysis has a lot of shortcomings, one of which is the treatment of suprasegmental phenomena. It is such a situation that AP attempted to remedy.

With recent developments in phonological analyses, aspects of the phonological system other than the segments have attracted a lot of attention and there are currently various twists to these non-segmental analyses which we need not go into here. In all of these, the contributions of the tonal systems of African languages cannot be overemphasised. Today, non segmental phenomena like tone are treated in their own right on 'separate tiers' and yet equal to the segments. This way, rules apply to separate tiers with mere reassignment of association lines without affecting other levels. The basic assumptions of AP is the well-formedness condition reproduced in 3 below:

3 a. All tones must be associated with (at least) one syllabic element
b. All syllabic elements must be associated with (at least) one tone
c. Association lines do not cross
(Goldsmith 1981 cited in Halle and Vergnaud 1982).

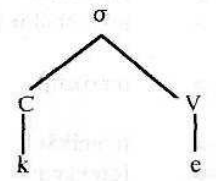
WFC c is currently being questioned, given a number of arguments, like the Ibibio data that Urua (1993) gives to show association lines crossing in suffixation cases in Ibibio. This development is expected to give yet another twist to the theory as originally stipulated in Goldsmith (1976).

Sometimes in some phonological systems, segments are lost or deleted. Interestingly the tones borne by such deleted segments do not get lost. They float and get relinked to the segment that caused its deletion, (i.e. stability, see 4.4.1) thus creating a new tonal pattern. With the loss of segments comes a kind of realignment of the tones and association lines. Thus new complex tones can be created from original simple tones. Consider the deletion rule in 4.

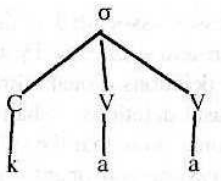
4. 

There is some realignment of association lines following the deletion of the vowel in the first syllable. With such a deletion, the tone is relinked to the next available segment thus forming a complex tone. This way, the deletion of the vowel can be applied in the rule without altering the sequence of the tones. In other words, the segmental structure has changed, while the tonal structure has not.

Vowel deletion in Anaang has a few other phonological processes associated with it. Of particular note is tonal relinking (see Sec 4.2). This condition can best be analysed using the AP, given the fact that the linear analysis of GP cannot cater adequately for this very interesting tonal patterning as will be seen shortly. An extension of the AP mentioned earlier is the establishment of a syllabic tier, where the CV tier links the syllabic tier to the segmental/melodic tier. The Cs and Vs are also referred to as 'skeletal tier' or 'timing units'. This representation is formalised in 5 (see Bickmore, 1995:120). We shall therefore draw on both theories with more emphasis on the AP given the wealth of non segmental processes associated with deletion in Anaang.

5. a. 

Syllabic tier
Skeletal tier
Segmental/Melodic tier

b. 

Syllabic tier
Skeletal tier
Segmental/Melodic tier

2.0 Vowel Deletion in Ibibio.

Urua (1990) identifies two basic conditionings of vowel deletion in Ibibio viz lexically conditioned and grammatically conditioned deletions. Within the former category, there are correspondences between Anaang and Ibibio, with the lexical deletion only occurring in the latter as shown in 6a - d.

6.	a.	/fire/	-->	[firé]	-	[frě]	-	forget
	b.	/ufòdó/	-->	[ùfòɹó]	-	[ùfɹó]	-	prosperity
	c.	/m̀bïdé/	-->	[m̀bïɹé]	-	[m̀bɹě]	-	play
	d.	/àbïdé/	-->	[àbïɹé]	-	[àbɹě]	-	black snake

Within the grammatically conditioned deletion, she identifies three categories viz: deletions associated with prepositional phrases; adjective plus noun constructions and verb plus noun constructions. We reproduce some of these

examples in 7, 8, 9.

7.	a.	ké	+	iŋwáŋ	-->	[kiŋwáŋ]	in the farm
	b.	ké	+	èkɔ̀m	-->	[kèkɔ̀m]	at Ekom
	c.	ké	+	ábáŋ	-->	[kébáŋ]	in the water pot
	d.	ké	+	ɔ̀bɔ́t	-->	[kèbɔ́t]	on the hill
	e.	ké	+	ɔ̀kɔ̀m	-->	[kèkɔ̀m]	on the roof
	f.	ké	+	úfɔ̀k	-->	[kúfɔ̀k]	in the house
8.	a.	ùtíbè	+	ɔ̀bɔ̀t	-->	[ùtíbɔ̀bɔ̀t]	strange hill
	b.	èkámbá	+	úfɔ̀k	-->	[èkámbúfɔ̀k]	a large house
9.	a.	bárá	+	íkáŋg	-->	[báríkáŋ]	light a fir for cooking
	b.	dómó	+	íkáŋg	-->	[dómíkáŋ]	light a lamp
	c.	dòró	+	èkpàt	-->	[dòrèkpàt]	bring down a bag

She also identifies four phonological processes associated with these deletions: weakening, tonal relinking, glide formation and a change in syllable structure. Weakening is associated only with the lexical deletions. Tonal relinking is associated with lexical deletions and prepositional phrasal deletions. Change in the syllable structure is associated with all types of deletions. Note that the syllable structure in Ibibio does not allow consonant clusters unless the consonants are identical. This creates a structure such as 10a and formalized in 10b.

10.	a.	CVCV	--->	CCV
	b.	V	--->	Ø / C ---- C (where the CC are not identical).

The pattern of deletion is determined by the height of the vowel (Essien 1990, Urua 1990). The lower vowels are usually deleted when they occur with high vowels (See 7 a, f). However, we observe that where the two vowels are of the same height, the back vowels are deleted and the front ones retained as in 7d, 9c.

3.0 Vowel Deletion in Anaang.

Vowel deletion in Anaang occurs at the phrasal level. Unlike the situation in Ibibio it is not lexically conditioned. When vowels are juxtaposed at word boundaries one (or more) of four things occur:

11.	a.	one of the vowels gets deleted
	b.	there is a glide formation
	c.	there is coalescence
	d.	there is no deletion at all

The pattern of deletion as in Ibibio is determined by the height of the vowels with the lower vowels being deleted, leaving the high vowels. The glide formation is associated with the high front vowel /i/. The retention of both vowels is associated with /a/ and /u/.

Although these deletions are grammatically conditioned, the exceptions in some cases are too many to allow for a comfortable generalisation on which to base rules. Consider 12 a, b.

12.	a.	tó + átíké	-->	[tɔ́tíké)	plant okro
	b.	tó + ébót	-->	[tɔ́ebɔ́t]	hit a goat

12 a, b are both verb + noun constructions, and yet there is no deletion in 12 b.

We would therefore look at the deletions on the basis of phonological features of the vowel segments as they occur in the phrases. We shall look at the seven pure vowels in the system and see what happens when they occur at word boundaries.

We now present the seven vowels:

/i/ forms a glide when it occurs at the end of the first word as shown in 13 a-f

13.	a.	éti + úfɔ̀k	-->	[étjûfɔ̀k]	good home, family
	b.	éti + èkà	-->	[étjékà]	good mother
	c.	éti + àkàm	-->	[étjékàm]	good prayer
	d.	éti + àkpò	-->	[étjékpò]	good bone
	e.	éti + àbàng	-->	[étjébàŋ]	good pot
	f.	di + úfɔ̀k	-->	[djúfɔ̀k]	come to the house

Note that when /i/ occurs before /a/ at word boundary, there is some form of coalescence resulting in /ə/ with the glide as shown in 13 c,d,e (See 4.3).

/e/ allows deletion of all the vowels that are lower than it as shown in 14 a-e :

14.	a.	ké + inwáng	-->	[kiŋwáŋ]	in the farm
	b.	ké + àkón	-->	[kèkón]	at night
	c.	ànyíe + úfɔ̀k	-->	[àɲúfɔ̀k]	house owner
	d.	àfé + ánàang	-->	[àfénàaŋ]	gathering place for

					Anaang
	e.	èté + ídùng	-->	[ètídùŋ]	clan/village head

/a/ does not allow any deletion as shown in 15 a-f. Auditorily, we perceive a kind of reduction in the length of the two vowels. This hunch is yet to be confirmed with acoustic measurements and this will be presented at a later date.

15.	a.	áfá + úfòk	-->	[áfáufɔ̀k]	new house
	b.	áfá + ífiok	-->	[áfáifjɔ̀k]	new knowledge
	c.	áfá + éfòk	-->	[áfáefɔ̀k]	new parcel
	d.	àfía + étò	-->	[àfjáetò]	white tree
	e.	èkà + ítiat	-->	[èkàítiat]	big stone
	f.	èsà + úfòk	-->	[èsàúfɔ̀k]	veranda

Note that the low tone of the preceding vowels in 15e, f affects the high tone following it; thus forming a kind tonal downdrift. This kind of lowering conforms to the tonal patterning common to both Anaang and Ibibio. (Urua 1990:174). Thus 15e, f can be represented as 16 a, b; where the height of the H vowel is reduced to a level lower than its original height.

16.	a.	eka	+	itjat	------>	[e k a i t j a t]
		[_ _]		[ˉ ˉ]	------>	[_ _ ˉ _ _]
	b.	esa	+	ufok	------>	[e s a u f ɔ k]
		[_ _]		[ˉ _]	------>	[_ _ ˉ _]

/ɔ/ allows deletion of segments it occurs with. Consider 17 a-c.

17.	a.	tó + átíké	-->	[tɔ́tíké]	plant okro
	b.	dùkó + úkòt	-->	[dùkúkɔ̀t]	filter the drink
	c.	dó + ádóm	-->	[dɔ́dóm]	marry a husband

/o/ allows deletion of vowels it is higher than. Consider 18 a, b.

18.	a.	wó + ànyé	-->	[wǫ̀né]	tell him/her
	b.	sòbbò + ikùt	-->	[sòbbìkùt]	meet the tortoise

/u/ does not allow deletion of vowels it occurs with as shown in 19 a,b.

19.	a.	útú + ékpè	-->	[útúekpè]	spider
	b.	èkwú + áfèrè	-->	[èkwúefèrè]	meat for soup

/ʉ/ does not allow deletion. Consider 20 a, b.

20.	a.	fʉ + ifʉ	-->	[fʉifʉ]	be lazy
	b.	èkpʉ́ + ikòt	-->	[èkpʉ́ikɔ̀t]	bush rat

Deletion in Anaang is formalized in 21a-d following Laniran 1992, and Pulleyblank 1986. In this case, the /a/ is deleted. Following the height criterion discussed in Section 2, /o/ is higher than /a/ and therefore survives. Note that in 21c, d, the low tone associated with /a/ in the underlying representation is delinked and subsequently is relinked to /o/ in the derivation.

21. a. w o a n y e — Underlying
H L H

b. w o Ø n y e — V- deletion
H L H

c. w o Ø n y e — T- delinking
H L H

d. w o n y e — T-relinking
H L H

d. wō:nyé — Output

4.0 Related Processes

When vowels occur together at word boundaries, a number of interesting things happen to them in the Anaang language. The commonest occurrence is the deletion of one of the vowels (see 2.0). We observe the following phonological processes associated with this condition.

4.1 Length Reduction

Sometimes two vowels occur together without anyone of them being deleted. When /a, u, ʉ/ occur as the first vowel in a V // V structure, they do not

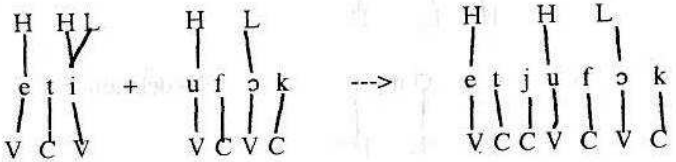
allow any deletion. Consider the examples in 15a - f; 19a-b; 20a-b. However, the perception of the length of the two vowels auditorily appears to be reduced from their original lengths. The experimental support for this suspicion will be presented at a later date.

4.2 Glide Formation

The Anaang vowel system allows five of the pure vowels to glide towards /i/ (Idem 1994). Juxtaposition of vowels involving /i/ at the phrasal level with /i/ as V_1 in a V // V structure therefore leads to glide formation. See 13 a-f formalised in 22 a, b.

22. a. L ----> Ø / G __ C

b.



The analysis of the glide in 22b is a bit more complicated than it appears. Some analysis would assign a syllabic status to the glide, thereby associating it with the H tone which originally was assigned to /i/. If that is the case, then there would be no glide formation in the first place, for the vowel /i/ would still remain. Our analysis here is that the /i/ becomes a glide and the complex tone of the V_1 is transfered to the /u/ for the glide still has a C status.[6] The glide formation deletes a tone. This deletion of one of the tones in a complex tone simplifies such a tone to a simple tone.

4.3 Coalescence

Coalescence involves the convergence or fusion of adjoining sound segments into a new segment phonologically very different from the original segments. (Bamisile, 1994:134). The juxtaposition of /i/ with other vowels leads to glide formation in Anaang (4.2). This is the case when other vowels are involved. With /a/, a kind of coalescence occurs with /ə/ as a result as shown in 13 c d e reproduced in 23 a b c.

23. /i/ + /a/ --> /ə/

a. éti + àkàm --> [étjəkàm] good prayer

b. éti + àkpò --> [étjəkpò] good bone

c. éti + àbàng --> [étjəbàŋ] good pot

4.4 Tonal Processes

Tone plays a very important part in African languages in that it is as distinctive as the segments. Although it is a non segmental phenomenon, phonological processes associated with it create rather complicated but interesting patterns.

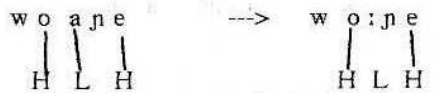
A few phonological processes are associated with deletions in Anaang. The loss of a segment does not necessarily lead to the loss of its tone. Either one of two things happens to the tone: it may be relinked to the next available tone bearing segment thus forming complex tone or it may it may be simplified thus forming a simple tone.

4.4.1 Tonal Delinking and Relinking.

In Anaang like Ibibio, segment loss leads to realignment of tones. When segments get deleted the tones which they bore get relinked to the next available tone-bearing element as shown in 21a, b. (The broken line indicates the relinking rule). Thus contour tones can be created from level tones. This is known as relinking. In line with Clements and Ford (1979) hypothesis, the floating tone gets associated with the segment that caused the deletion, giving rise to what is known as stability (van der Hulst and Smith 1982:12). This association is particularly obvious if both segments do not have the same tone.

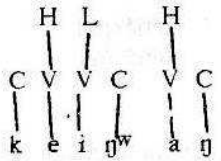
24. a.

b.

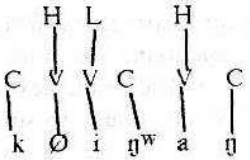


The explanation for this kind of phenomenon is lost in a strictly segmental analysis. The treatment of tone as a feature of the syllable predicts that tones that move with syllables get lost. But the data in 24 a, b and many others so far presented shows that this prediction is wrong for the concept of stability cuts across most tonal systems.

This process of relinking of tone caused by segment deletion invvolves yet another process: that of delinking. All of these can be derived as in 25a-e.[5]

25. 

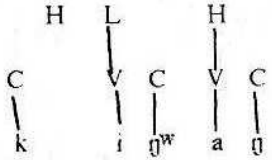
Underlying

b. 

Vowel Deletion

c. 

Tone - Delinking

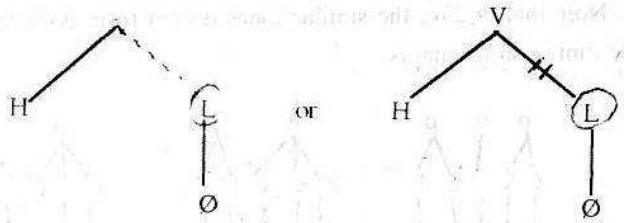
d. 

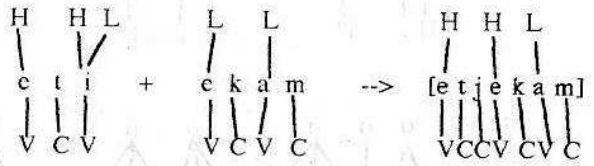
Tone - Relinking

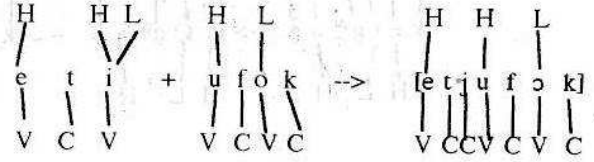
e. k i : ŋʷ a ŋ Output

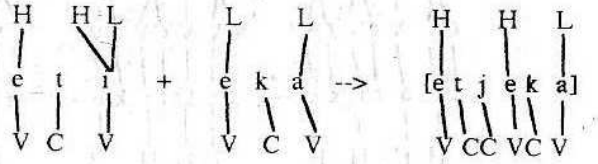
4.4.2. Tonal Simplification.

This tonal process involves a reduction of a complex tone to a simple tone. Thus a HL tone becomes a H tone. Deletion involving a complex tone-bearing segment leads to a simplification of such a tone to a level tone. See 13a-e reproduced in 26b-d. Thus a HL complex tone is simplified to a H.[7] A tonal simplification rule simplifies HL to L as given in 26a following Goldsmith 1981:7



b. 

c. 

d. 

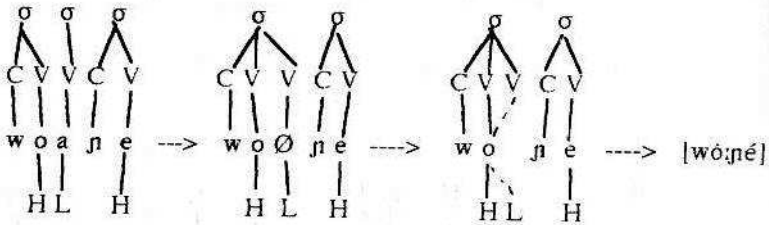
4.5 Compensatory Lengthening

When a vowel is deleted in Anaang, it leaves a lot behind. Apart from the case involving /i/ which results in glide formation, other cases of deletion leave behind both the melody and timing slots at the skeletal or timing level. Deletion merely moves the V_1 slot to the V_2 slot. This kind of process is referred to as a kind of 'filling in for the elided material', hence the data in 27a-c. Although this analysis treats long vowels as two timing units, they are linked to one segment. The deletion of the segment moves both the V_1 slot and its melody to V_2. This reassigment of 'stranded' timing units to the segments that caused the deletion also

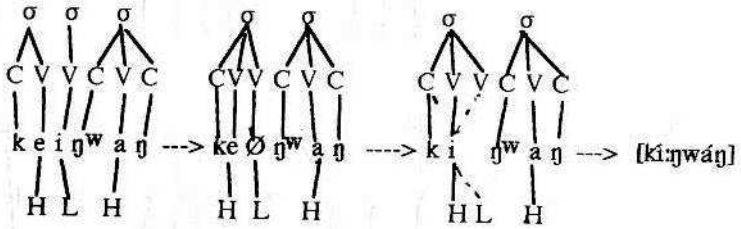
leads to a resyllabification; where the number of syllables is reduced as shown in 27a-c. Note that in 27c, the similar tones do not form complex tones as in 27a,b; but the timing slot remains.

27.

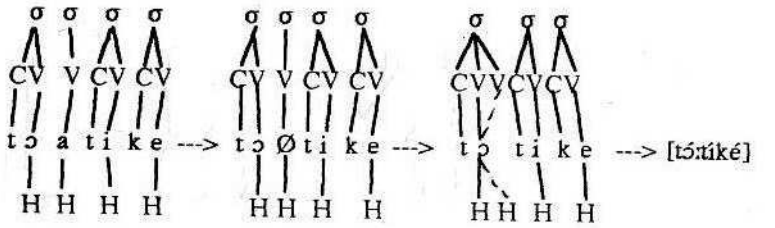
a.



b.



c.



The deletion of the segment moves both the V_1 slot and its melody to V_2 (stability). This reassignment of 'stranded' timing units to the segment that caused the deletion also leads to some form of resyllabification, where the number of syllables is reduced as shown in 27a-c.

5.0 Conclusion

Vowel deletion in Ibibio and Anaang are quite similar. This is not surprising considering that the two varieties are linguistically very close and they are members of the Lower Cross group of languages.

While vowel deletion occurs lexically in Ibibio, there is no deletion at this level in Anaang. However, deletions in Anaang occur at the phrasal level. The juxtaposition of vowels at word boundaries gives rise to three basic situations in both languages.

28. a. Deletion of one of the vowels whereby low vowels give way to high ones
    b. No deletion at all,
    c. Formation of a glide,

These processes come with a number of modifications of both segmental and non segmental phenomena.

In Ibibio deletion is associated with processes like weakening and glide formation; all of which go with a modification in the syllable structure with attendant tonal modifications as well (Urua 1987,1990).

The deletion in Anaang does not involve weakening. Rather, besides glide formation and tonal relinking, three other processes are identified, viz coalescence, tonal simplification and compensatory lengthening. A third phonological process is also suspected, i.e., some form of length reduction for which the experimental evidence will be presented at a later date.

END NOTES.

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2 The Anaang data consisted of transcription of the examples given by two of my colleagues who are native speakers of Anaang. The Anaang is that spoken in Ukanafun/Abak Local Government Areas of Akwa Ibom State, Nigeria. We appreciate the inadequacy in the limited data. There is the need to look at more data. The data were collected as part of a larger research project on 'Duration' funded by The University of Uyo Research Committee Grant.

3 See Idem (1994) for more data to support these claims.

4 See Urua (1990, 1995), for the tonal patterning in Ibibio.

5 Note that in some dialects of Ibibio, the /ɔ/ in /ufɔk/ has a complex tone in the second vowel. But for the dialect of Anaang under discusion - i.e. the

Ukanafun/ Abak dialects, it bears a simple L tone.

6 Ø represents deletion, ⊭ represents delinking and the broken line represents relinking of both the tone and its timing slot.

7 There is a little controversy regarding the simplification of tone here. There appears to be tonal simplification associated with the glide formation particularly where there is a contour tone involved. Glides are quite close to vowels in terms of articulation. Since the glide takes the timing slot of the [i] it does appear and with good reason too that it also acquires one of the tones. In that case, only one of the level tones manifests at the surface level.

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