

## Tonal processes in Anaañ

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### Abstract

The concept of tone is a common phonological feature among the Lower Cross languages, though its manifestation varies across individual languages. This paper examines the tonal processes in Anaañ, focusing on how tones interact with vowels across different phonological environments. The primary objectives of the study are to identify the tonal patterns in Anaañ, investigate the tonal processes involved, and explore the factors that trigger these processes. The study is anchored in the autosegmental framework proposed by Goldsmith (1976), which emerged in response to the limitations of classical generative phonology. Data were collected through participant observation, semi-structured interviews, informal conversations with native speakers of Anaañ, and relevant secondary sources. Findings reveal that tonal processes are fundamental suprasegmental elements that contribute significantly to meaning in Anaañ. The study identifies several tonal processes, including tone raising, tone lowering, tone copying, tone polarization, tone displacement, floating tones, downstep, downdrift, tone deletion/delinking, tonal linking/relinking, and tonal upstep.

**Keywords:** Tone, words, language, Anaañ, phonological processes.

## **Introduction**

Anaañ is the name of the language as well as the speakers. Anaañ is the second largest ethnic group in Akwa Ibom State after Ibibio. The people occupy the coastal southwest of Nigeria, which constitutes the present Abak, Essien Udim, Etim Ekpo, Ika, Ikot Ekpene, Obot Akara, Oruk-Anam and Ukanafun Local Government Areas of Akwa Ibom State, Nigeria. The population of the Anaañ people varies from source to source; the 1991 Census records about 1.6 million people (Umoren 1997), Okorukpong (1999) records the population of 2 million people.

Geographically, the Anaañ people occupy a land mass of 2.37 square kilometers, bounded by the Igbos on the North, Rivers State on the West and South, and the Ibibios on the North-East (Udondata 2006, p. 2).

## **The Anaañ language**

Anaañ is the second dominant language in Akwa Ibom State of Nigeria after Ibibio, with a linguistic homogenous heritage. Linguistically, Anaañ and Ibibio are genetically related and are mutually intelligible. The language had very few written works by the Europeans, during the nineteenth century. The first written work about Anaañ and the people is in Wilhelmy Koelle's accounts of liberated slaves in Sierra Leone (Koelle 1854). He mentioned a liberated slave named 'Ebengo' meaning 'ebe nko,' (the husband of Nko), who was captured and sold to the Portuguese. The British soldiers listed Anaañ as one of the languages spoken by the slaves in the captured ship. The second mention of the language is in the description of 'Ikot Udo war.' This was about the conflict between King Jaja of Opobo and the Anaañ people, on account of palm product business transaction with the British merchant in which the British intervened for the Anaañ people but captured King Jaja and exiled him to the West Indies to prevent subsequent conflicts. The British then established a military post at Ikot-Ekpene and Abak in 1904. From Ikot Ekpene, the troop marched to Uyo via Abak between 1904-1910 (Ette 2009).

Genetically, Anaañ language belongs to the Lower Cross group of languages, with the New Benue-Congo in the Niger Congo phylum. (Connel 1994; Faraiclass 1989; Urua 2007). The Anaañ language has been classified by many scholars, at different periods as follows: Faraiclass (1989) classified Anaañ as a member of the Lower Cross Family which is linked to Delta Cross in the larger Niger Congo phylum. Connel (1994) classified Anaañ under the Lower Cross group of languages in the New Benue Congo family, Urua (2007) argued that Anaañ is a member of Lower Cross, connected to Delta Cross and to the Cross River group of languages within the New Benue Congo. Udoh and Okon (2008) assert that Anaañ is a member of the Lower Cross. When put together, these sum up to the argument that Anaañ is a member of Lower Cross language group, linked to the Benue Congo language phylum.

### **Literature review**

Language is the vehicle through which people express their ideas, feelings and thoughts. It is the fundamental instrument for any linguistic analysis (Eyakndue & Ogar 2023). Language is a systematic conventional use of symbols, signs or written symbols in a human society for communication and self-expression (Crystal 1992). Man and language were born together, meaning that without man, there would have been no language, and without language, man would be extremely limited in speech and linguistic innovation (Eyakndue et al 2023). The knowledge of the sound system of a language by the native speaker provides insight into the different processes including tonal processes (Eyakndue 2024). Language has been with man for a very long time, and he uses it to communicate in a more complex way than the way other animals communicate, using to express ideas and opinions, give information, narrate and describe events that are happening now, have happened in the past, or will happen in the future (Anagbogu; Mbah & Eme 2010). Going by Anagbogu et.al argument, one could ascertain that this complex way of communication is where tonal processes come into play. It is on this premise (Obute, Eyakndue & Otun 2019), submit that language is the main instrument for communication, self-expression and declaration of intention. In the context of

this study, the role of language in our day-to-day interactions brings to the spotlight the phonological rules which lead to the different tonal processes in a tone language, and provide a deeper understanding of the phonology of Anaañ.

According to (McGregor 2009), pitch difference is called tone. Pitch level is very significant in a tone language; however, different pitch levels determine the meaning in some lexical items that are identical in structure. Consider the following examples in some Nigerian languages:

- |     |      |                   |
|-----|------|-------------------|
| (1) | Igbo |                   |
|     | Ákwá | ‘to cry’          |
|     | Ákwà | ‘cloth’           |
|     | Àkwá | ‘egg’             |
|     | Àkwà | ‘bed’             |
| (2) | Yala |                   |
|     | Ádá  | ‘name of a place’ |
|     | Ádā  | ‘father’          |
|     | Ādā  | ‘master’          |
|     | Àdà  | ‘wild lily’       |

Ojobo (2013, p.74).

The illustration above suggests that languages differ in their pitch levels. For instance, Igbo has two tonal levels: High and Low; Yala has three: High, Mid and Low. Essien (2010, p. 85) argues that, ‘tone is a contrastive pitch’ caused by the vibration of the vocal bands located in the larynx or voice box. Thus, the changes in pitch automatically cause meaning change in the word. He presents these examples in Ibibio, a language related to Anaañ.

Clark, Yallop, and Fletcher (2007, p. 342) identify tone as ‘a feature of the lexicon, being described in terms of prescribed pitches for syllables or sequences of pitch for morphemes

or words’. Cruttenden (1997) gives a clear situation of tone languages and basic structure of analysis and description. O’Grady (2011, p. 43) further establishes that ‘a tone language is that language whereby difference in word meaning is signaled by difference in pitch’. He cites an example of an English speaker pronouncing the English word ‘car’ with rising pitch, and notes that the word does not mean anything different from the same form pronounced. In a related context, the speaker of a tone language, Mandarin may pronounce a word *ma* (cold) with a falling tone meaning (*mà*), but when the same form is pronounced with a rising pitch [*má*] the meaning changes to ‘hemp’. He further attests that ‘level tone that signal meaning differences are known as register tone’ (O’Grady 2011, p. 43). He posits that two or three register tones are the norm in most of the world’s languages. The claim of O’Grady (2011) agrees with the Skeletal Tier model of Katamba (1980) that ‘an association line indirectly links tone to actual segment through the skeletal tier’.

Welmers (1959 as cited in Yusuf 2007, p. 66) views tone language as a ‘language in which both pitch phonemes and segmental phonemes enter into composition of at least some morphemes’. This implies that tone as a phonological unit does not operate without the segment. It is based on Welmer’s view that (Ameze 2020) suggests that tone is not a feature or property of the syllable, rather, it is a property of the morpheme. Hence, tone has specific functions in a lexical item just as segments. Consider the following examples in Edo language:

- (3) Edo:
- |       |         |
|-------|---------|
| [òwò] | ‘leg’   |
| [ówé] | ‘broom’ |

Based on the examples above, the difference is the tone height on each syllable (Ameze 2020). According to Yip (2002, p. 4), ‘a language with tone is one in which an indication of pitch enters into lexical realization of some morphemes.’ Going by Yip’s assertion, it is

observed that pitch level is most essential in a tone language to distinguish meaning as illustrated below from Yoruba (Yip 2002, p. 4).

(4)	Yoruba	Tone	Gloss
	ōwó	MH	hand
	ōwò	ML	broom
	òwò	LL	respect
	òwó	LH	group

The examples above show that tone determines the meanings of words, (Yusuf 2007). Furthermore, languages differ in their tonal levels, For instance, in the Yoruba Language data above, three tonal levels are established, namely High, Mid and Low. (Yusuf 2007, p. 66) also samples the examples in Igbo with two tone levels as presented below:

(5)	Igbo	Tone	Gloss
	óké -	HH -	male
	òkè -	LL -	shave
	òké -	LH -	rate
	ókè -	HL -	boundary

From the foregoing, it is evident that if segments are not marked, it will create ambiguity, furthermore, the pitch level distinguishes words that are identical in structure. Yusuf (2007) identifies two major categories of tone which include register tone and contour tones. In a register tone language “tonal contrast consists of different levels of steady pitch, heights, that

is perceptible. Such tones neither rise nor fall in their production'. Whereas a contour tone language consists of some tones 'which are not level in their production, but rather, rise, fall or rise and fall in pitch' This classification depends on the language.

Yusuf (2007) further identifies the following tonal processes, which include: tone raising, tone lowering, tone copying, tone polarization, tone displacement, tone simplification, tone floating, downdrift and downstep. (Yusuf, 2007) presents the following examples of tone copying from Margi in Pulleyblank (1986, p. 72).

(6) a.	1	tsá + ri	tsári	'to knock'
	2.	tá + nya	tányá	'to use all in cooking'
	3.	nə + ri	nəri	'to tell a person'
	4.	fàfè + na	fàfèná	'to wipe off'
(b)	1.	məl + ía	məlía	'to make ready'
	2.	ɲal + bá	ɲálbá	'to bite a hole'
	3.	her + dá	hèrdà	'to bring me'
	4.	ska + dá	skədà	'to wait for me'

The above illustrations show how a particular tone spreads its feature from the syllable that bore it to cover segments in other syllables before or after it. Urua (2007) identifies the following tonal processes in Ibibio, a closely genetically related language to Anaañ: terracing which involves, downdrift and downstep. Urua further identifies other specific tonal processes to include: tonal spreading, tonal deletion/delinking, tonal relinking, contour tone simplification, tone tonal raising, tonal replacement and tonal alternation. When a tone does not have an overt tone bearing segment, such a tone is referred to as a floating tone (Yusuf 2007). According to (Urua 2001), many of the grammatical tones in Ibibio (a closely related language to Anaañ) are floating tones. It should be noted that contour tones can be found in

a pure register tone language, just as level tones can also be found in a pure contour tone language. This argument supports the claim that tonal processes can be morphologically/syntactically conditioned. These contributions project the motivation for the present study which seeks to examine the dimensions of tonal processes in Anaañ to ascertain the similarities or otherwise with other languages in the same group.

From the foregoing, the general consensus is to the fact that some tonal processes are also environmentally sensitive. This present study explores the tonal processes on Anaañ, and insights from the above studies will provide the basis for examining the subject matter and types of tonal processes in Anaañ which is yet to be investigated. The findings will provide information on the peculiarity and/or similarities when compared to other languages that are genetically related in the Lower Cross languages of the Niger Congo phylum.

### **The Autosegmental theory**

The Autosegmental theory was proposed by Goldsmith in (1976) due to the inadequacies of classical generative phonology. The most important feature of the Autosegmental theory is that “tone” is given an “autonomous status” i.e. a separate tier. The autosegmental theory recognizes tier, hence the name ‘Multi-tiered analysis.’ The multi-tiered representation was first introduced by Leben (1971). Although he did not give a detailed analysis of how tones are linked to the segments. After him, Williams (1976) and Odden (1980) attempted to develop the multi-tier model.; This attempt led to the skeletal tier or ‘CV tier’ to which Katamba (1993) provides a detailed analysis. Thus, the skeletal tier holds together the different phonological tiers in the same way that binding holds the pages of a book together. Meaning that an association line indirectly links tone to actual vowel and consonant sounds through the skeletal tier (Katamba 1993, p. 156).

According to Katamba (1989), phonological representations are like the multi-storied building, with the syllables as the structural pillars and beams, which support the weight of



the building at different levels. In this building, various activities such as stress level, tone etc. can take place at different levels independently without having any effect on what goes on at another level, though inter connected. This implies that, auto segmental phonology is therefore a multi-tier approach to phonological organization and the tiers are related.

Goldsmith (1976) came up with a powerful convention called ‘the well-formedness condition’. This condition provides guidance on how the autosegments may be linked to the segments which bear them. This convention has the capacity to delete or add association lines at any point throughout the derivation.

Goldsmith (1990) expressed the well-formedness condition thus:

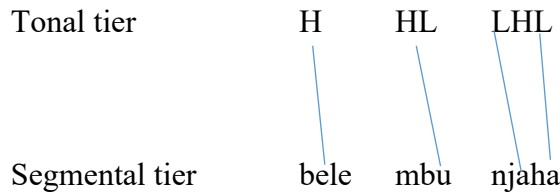
- a. All vowels are associated with at least one tone.
- b. All tones are associated with at least one vowel
- c. Association lines do not cross.

The first and the second conditions have undergone a lot of modifications by several scholars since 1976 such as: mapping, spreading and dumping. The above assertion is illustrated here below:

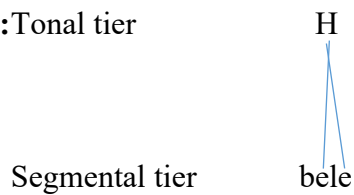
- a. **Mapping:** Associate each tone with a vowel mapping from left to right.
- b. **Spreading:** If there are fewer tones than vowels, associate the final tone with all the remaining vowels.
- c. **Dumping:** If there are fewer vowels than the tones, associate all remaining tones with the final vowel (Ewen & Hulst 2001).

In view of this principle, Ewen & Hulst (2001) present the illustration from Mende data:

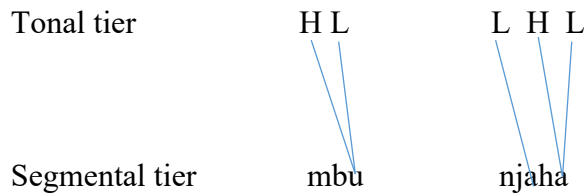
**7. Mapping** Tonal tier



**8. Spreading:** Tonal tier



**9. Dumping:** Tonal tier



From the above, it is observed that multi-tier representation permits many-to-one association as in (8) and one-to-many association as in (9) above. Furthermore, contour tones are therefore given adequate representations as shown in (9) above where two tones are mapped to one segment. Probably this is why Yip (2002, p.65) submits that tone differs from most phonological features in the following ways:

- i. Movement: away from point of origin.
- ii. Stability: survival after the loss of original host segments.
- iii. One-to-many: single tonal feature shared by two or more segments.
- iv. Many-to-one: multiple tonal feature surfaces on a single host segment.

- v. Toneless segment: potentially tone-bearing segments that never acquired phonological tone.

### Anaañ tone

Anaañ is basically a tone language which has most of its morphemes realized by speech modulation. The words made in Anaañ do not only consist of vowels and consonants, they are also dependent on the relative pitch in which each syllable is articulated. However, tone plays a vital role in distinguishing meanings as well as eradicating ambiguity in words in the language. Anaañ is a registered tone language with three basic tone levels: High [ ´ ], Mid [ ¨ ] and Low [ ` ], including contour tones of High-Low falling [ ^ ], and Low- High raising [ ˇ ] (Eyakndue 2023).

### The tonal patterns in Anaañ

The data for this analysis constitute the features of Anaañ tone as presented below:

High [ ´ ], Mid [ ¨ ] and Low [ ` ], contour tones of High-Low falling [ ^ ], and Low- High raising [ ˇ ].

The distributions of tones in Anaañ are not restricted, as they can occur in any phonological environment in a word. Also, in Anaañ, high tone can occur with another high tone HH and can equally occur with a low tone HL as shown in examples below:

Tone could be High or Low contrasting in meaning because they are distinctive:

10.	H	Gloss	L	Gloss
1.	má	love	mà	finish
2.	kpá	die	kpà	cut (with machete)

3.	bók	gather	bòk	trim
4.	kpək	loose	kpòk	crow
5.	bád	be dirty	bàd	count

High tone can occur with another High tone (HH), and contrast with a (HL) tone in disyllabic words as follows:

11	1.	H H	Gloss	H L	Gloss
	2.	ákpək	has loosen	ákpòk	plank
	3.	ɣkáñ	charcoal	ɣkàñ	side
	4.	étób	they've thrown	étòp	announcement
	5.	ákpán	first son	ákpàn	raffia carriage
	6.	úkód	leg	úkòd	in-law

Similarly, in Anaañ, High tone can contrast with low tone in disyllabic words. Consider the Illustrations below:

12.	H H	Gloss	L L	Gloss
1.	fákká	un-insert	fàkkà	get tight
2.	kpákká (échid)	get angry	kpàkkà	interlock
3.	bókkó	finish cooking	bòkkò	pass each other
4.	fúkká	uncover	fùkkà	be secretive
5.	kókkó	give way	kòkkò	interlock

Instances of a Low tone occurring with a Mid tone in Anaañ without contrasting with any other tone is attested to below:

13	L M	Gloss
1.	kòkkō	get inter fixed
2.	fèbbē	remove object from under
3.	nùkkō	push each other
4.	wùddū	messed up things
5.	kpùkkū	being rumored

In Anaañ, modulation of High-Low falling and Low-High raising also occur as shown in the following examples:

14	L H L		Gloss
1.	nwěŋwèn	-	blackish
2.	dǎdàd	-	reddish
3.	nyǎnyàm	-	be selling it

Furthermore, the High-Low falling tone is restricted to concord markers in polysyllabic words as presented below:

15.	HL-L M		Gloss
1.	â-dàkā	-	he/she has gone
2.	ê-dāñā	-	they have gone
3.	â-lòlō	-	has brought down

### Tonal processes in Anaañ

The data for this analysis are the tone levels in Anaañ which are: High tone [ ' ], Low tone [ ` ], Mid tone [ ¯ ], High-Low falling contour tone [ ^ ] and Low-High raising contour [ ˇ ].

In these study, the data above is utilized to analyse the following processes which include: tone raising, tone lowering, tone copying, tone polarization, tone displacement, floating tones, down step, down-drift, tone deletion/delinking, and tone up-step

### 1. Tone raising in Anaañ.

In tone raising, a low tone rises in pitch in the course of derivation due to the influence of a preceding high tone. The raising could be phonologically or syntactically triggered. This is represented thus: L-H; L-M, or M-H. In Anaañ, tone raising occurs when two independent morphemes form a compound word. Consider the example below:

- |       |                  |            |   |             |
|-------|------------------|------------|---|-------------|
| 15.1. | /bén/ ++ /àkò/   | /bénákò/   | - | carry pot   |
|       | H      L L       | H H L      |   |             |
| 2.    | /fúk/ ++ /áfɔŋ/  | /fúáfɔŋ/   | - | cover cloth |
|       | H      L L       | H H L      |   |             |
| 3.    | /tém/ ++ /àkpùk/ | /témákpùk/ | - | clear swamp |
|       | H      L L       | H H L      |   |             |

### 2. Tone lowering in Anaañ

Conversely, a high tone could be lowered in height to either a mid-tone or a low tone due to the influence of a preceding low tone as in the following examples:

- |       |                  |   |                          |   |                    |
|-------|------------------|---|--------------------------|---|--------------------|
| 16. 1 | /ábèk/ + /ífijá/ | - | /ábèRīfijà/              | - | bundle of firewood |
|       | H L    HHH       |   | H L ML L                 |   |                    |
| 2.    | /àkpòk + étó/    | - | /àkpòRētò/               | - | log of wood        |
|       | H L    HH        |   | H L M L                  |   |                    |
| 3.    | /átùàk/ + /úkòd/ | - | /át <sup>w</sup> àRūkòd/ | - | he is taping wine  |
|       | H LL    H L      |   | H L M L                  |   |                    |
| 4.    | /àpèn/ + /úsúñ/  | - | /àpènūsùn/               | - | door post          |
|       | H L    HH        |   | H L M L                  |   |                    |

### 3. Tone copying

In Anaañ, affixes acquire the tone of the roots they are attached to. Conversely, roots also acquire the tone of the affixes attached to them. Hence, tone copying is a process in which a toneme spreads its feature to the suffix of the word or the root acquiring the tone from the suffix. This study recognizes the following:

17. 1.	/bén + né/	/bénné/	‘to carry’
2.	/bók + /kó/	/bókkó/	‘to complete cooking ‘
3.	/tám + /má/	/támmá/	‘to jump’
4.	/túén + né/	/túénné/	‘to shine light’
5.	/bòm + /mò/	/bòmmò/	‘collide’
6.	/tùk + /kù/	/tùkkù/	‘try’
7.	/ɲwàm/ + /mà/	/ɲwàmà/	‘not assisting’
8.	/núák/ + /ká/	/núákká/	‘make it soft’
9.	/ɲwóɲ/ + /ɲó/	/ɲwóɲɲó/	‘swear’
10.	/tàn / + /ɲà/	/tànɲà/	‘quarrel’

### 4. Tone simplification in Anaañ

In a register tone language, the deletion of a TBU may cause a tone to be stranded, this permits the stranded toneme to re-align with the neighboring tone bearing unit thereby causing a contour. But this type of contour is a concatenation of two level tones which may be simplified to just one level tone (Hyman 1975, Urua 2001, Yusuf 2007). In other words, tone simplification is a process whereby contour tones are simplified to level tones. In Anaañ we present the following examples.

18. 1.	/sùán/ /á-súán/	(ntán) ‘has scattered sand
	L H H	

2.	/tìá/ LH	/tíá/ H	(duək)	‘kick away’
3.	/dìá/ L H	/díá/ H	(mkpɔ)	‘eat something’
4.	/tùàk/ H L	/tùàk/ L	(dùòk)	‘hit and pour’
5.	/dùòk/ H L	/dùòk/ L	(ɲwúɔŋ)	‘pour water’

### 5. Tone polarization in Anaañ

This is a process whereby a toneless morpheme with no underlying tone takes on the tone opposite to the neighboring syllable (Hyman 1975, Yusuf 2007). Tone polarization is identified in Anaañ as the following examples are presented:

1. [ádà-ká] - has gone
2. [ánèm-mé] - she/he has cracked the kernel
3. [ákpɔ-kɔ] - she/he has hit

### 6. Tone Floating in Anaañ

When a tone does not have an overt tone bearing segment, such a tone is referred to as a floating tone. Apart from morphological floating tones, a floating tone may be created when a segment that originally bore the tone gets deleted. Then the floating tone may dock onto a segment at the surface level either rightwards or leftwards or may even change its status within the environment. Consider the examples:

- |        |           |       |         |
|--------|-----------|-------|---------|
| 19. 1. | ké + ánwá | kánwá | Outside |
|        | H H H     | - H H |         |



2.	ìmé + óbóòṅ		ìmèbòòṅ	Gods patience
	L H H HH	-	L L LL	
3.	èkpónò + úfòk	-	ékpónúfòk	They honour house
	L H L H L		H H H L	
4.	ńkèrè + úgwóm		ńkèrú gwóm	I think life
	H L L H H		HL H H	

This is captured by auto-segmental phonology as shown below using (i & ii )above.

	/ké + áṅwá/	[káṅwá]	at the outside
Tonal tier:	H- H H	H H	
CV tier	CV + VCV	CVCV	
Seg tier:	ké áṅwá	[káṅwá]	showing vowel deletion
Tonal tier:	L H H L L		
CV tier:	VCVVCVVC		
Seg tier:	ìmé óbòòṅ	output	
Tonal tier:	L H LL		
CV tier:	VCV CVVC		
Seg tier:	ìmé' ó bòòṅ	showing deletion	

The examples above show that floating tone is a product of deleted segments. Floating tone can as well fuse to another tone on a TBU when its segment gets deleted. This is shown below:

- |              |          |              |
|--------------|----------|--------------|
| 1. ké + úfòk | [kúfòk]- | in the house |
| 2. Ké + ínùà | [kínùà]  | in the mouth |

These are captured by AP model as follows:

Tonal tier:	H L H
CV tier:	CV VCVC
Seg. tier:	ké ìṅwán

Tonal tier:	L H
CV tier:	CVCVC
Seg. tier:	kìṅwán

Showing tone fusion re-association

## 7. Down-step tone in Anaañ

Tonal down-stepping process is a common phenomenon in any tone language. It represents a non-automatic phonemic tone. The phonetic pattern of a sequence of High- down stepped- High tone is steady with the initial high tone, higher in pitch than the following down stepped high tone. However, the down-step process involves a high tone being lowered in the absence of any preceding low tone in the phonetic representation. Furthermore, tonal down-stepping involves pitch lowering whereby a new height is lower than the previous high tone and is set for a subsequent high tone within a phonological phrase. This phenomenon is recognized in Anaañ and is realized on morphemes immediately after the initial syllable with a high tone as presented below:

- |        |          |           |
|--------|----------|-----------|
| 20. 1. | /m! bók/ | please    |
| 2.     | /ú! mi/  | his way   |
| 3.     | /ú! kó/  | that side |
| 4.     | /ú! dé/  | that way  |

In Anaañ, the downstep tone also occurs at the word boundary in a compound word where the adjacent word begins with a high tone. Consider the examples below:

- |    |                |   |            |   |                  |
|----|----------------|---|------------|---|------------------|
| 5. | /ènɔ/ + /ímá/  | - | [ènɔ!mà]   | - | gift of love     |
| 6. | /ètè/ + /úfɔk/ | - | [ètu!fɔk]  | - | father of house  |
| 7. | /étòk/ + /údo/ | - | [étòR!udo] | - | small second son |

(5) & (6) are captured in the AP framework thus:

	/ènɔ/ + / ímá/				
Tonal tier:	L L	H H			
CV tier:	VCV	VCV			
Seg tier:	è nò	ímá	-		input
Tonal tier	L L	H M	-		H tone down-step to M
CV tier	VCV	VCV			
Seg tier	è n ò	ímā	-		output
	èté + ú- fɔk				
Tonal tier:	L H	H L			
CV tier :	VCV <sub>1</sub>	V <sub>2</sub> CVC			
Seg tier :	èté	+ úf-ɔk	-		input
Realized as	è-təu !	-fɔk	-		/u/ get deleted
Tonal tier:	L	H	L		
CV tier:	VCø	V <sub>2</sub> C	VC	-	by the replacement
Seg tier:	/è t' u	f-ɔk/	-		showing v <sub>1</sub> deletion

## 8. Down drift in Anaañ

Tonal down drift occurs when a low tone that causes the lowering of a high tone is invariably present. Although the high tone that is lowered retains the status of a high tone, its pitch level is lower than the normal high tone. On this premise, the down drift cause of a sequence of H-L-H is not realized as [  $\bar{\text{H}}$   $\bar{\text{L}}$  ], but rather as [  $\bar{\text{H}}$   $\bar{\text{L}}$  - ]. That is the two H tones are not pronounced on the same pitch level (although they are phonological identical), rather the second H tone is lower in pitch than the first, showing that the down drift effect extends over several H-L-H sequences and it shows a gradual lowering in the pitch pattern of an utterance. Consider the examples below:

- |        |            |                      |   |
|--------|------------|----------------------|---|
| 21. 1. | /ádòdóbó/  | ‘is heavy’           | [ $\bar{\text{H}}$ $\bar{\text{L}}$ - - ] |
| 2.     | /ádádáíyá/ | ‘he/she is sleeping’ | [ $\bar{\text{H}}$ $\bar{\text{L}}$ - - ] |
| 3.     | /édàṅá/    | ‘they have gone’     | [ $\bar{\text{H}}$ $\bar{\text{L}}$ - ]   |

## 9. Tonal Deletion/Delinking

Tone sometimes gets deleted just like segments. But this deletion is only restricted to low vowels in terms of vowel height. Hence the deletion can affect any of the items adjacent to each other at word boundary. More so, the deletion usually appears to be at the surface level phonologically, while the impact of the deleted tone manifests by lowering the following high tone. However, tonal deletion/delinking is syntactically conditioned. Instances are as follows in Anaañ:

- |        |         |    |      |   |               |                           |
|--------|---------|----|------|---|---------------|---------------------------|
| 22. 1. | àfákká  | ++ | ìnɔ  | - | àfákkí ! nɔ   | ‘one who bails thief’     |
| 2.     | àkpékké | ++ | àkpɔ | - | àkpékké ! kpɔ | ‘one who cuts bone’       |
| 3.     | àkɔk    | ++ | àwɔ  | - | àkɔkɔ ! wɔ    | ‘one who grinds crayfish’ |
| 4.     | mfuru   | ++ | àbē  | - | mfuru ! bē    | ‘tight pit’               |
| 5.     | àgwáká  | ++ | ìnúá | - | àgwákí ! núa  | ‘one with torn mouth’     |

## 10. Tonal Linking/ Relinking

In Anaañ, when a tone bearing segment is deleted, the tone does not get deleted with the segment, rather the tone is reassigned to the following tone bearing segment. This process is possible if the segments do not have identical tone levels. However, if they do, a low-high contour tone is created.

The following instances are attested in Anaañ.

- |        |         |   |         |   |         |   |        |               |
|--------|---------|---|---------|---|---------|---|--------|---------------|
| 23. 1. | ηkálāñ  | - | ηkárāñ  | - | ηk'ráñ  | - | ηkrāñ  | ‘scale’       |
| 2.     | ηkələk  | - | ηkərək  | - | ηk'rák  | - | ηkrək  | ‘wooden gong’ |
| 3.     | mkpálāñ | - | mkpárāñ | - | mkp'ráñ | - | mkprāñ | ‘limb’        |
| 4.     | mkpólōñ | - | mkpórōñ | - | mkp'róñ | - | mkprōñ | ‘local shelf’ |

## 11. Tonal up step:

This is opposite of the two processes above. (Udoh et al 2019) posit that up step tone is a phenomenon that involves the rising of the pitch a step or higher than the preceding tone, thus producing a rising intonation. In Anaañ, up-step tone manifest in interrogative sentences as we present the example below:

- |        |              |                             |
|--------|--------------|-----------------------------|
| 24, 1. | bénídém?     | ‘lift up your body’         |
| 2.     | à mékúródédé | ‘have you seen that’        |
| 3.     | údákákédé    | ‘will you leave that place’ |

## Factors that trigger tonal processes in Anaañ

The following factors motivate tonal processes in Anaañ

### 1. Phonological environment:

For instance, in tone raising, the possible environment is when a low tone is preceded by high tone, in the process of articulation, the low is raised due to the influence of the preceding

high tone. And this could be phonologically or syntactically triggered. This process is also applicable to tone lowering in a situation in which high tone is lowered in height to either a mid-tone or a low tone due to the influence of a preceding low tone.

## **2. The preceding tone.**

The tone before and after in the root word plays a vital role in determining the process that may likely occur. However, tonal processes are built up based on the tone levels or the pitch of the surrounding tone within the environment. For instance a high tone occurring after a low tone will definitely be lowered to either a mid or low tone.

## **3. The lexical structure.**

At the lexical level, tone corporates with consonants and vowels to make meaning, it is on this premise that different tonal processes manifest. However, consonants cluster, and lexical items with a CVC structure, pose a constraint to tonal process to take place because, these structures may likely bear just one tone, hence, there is no other tone to influence each other. On this view, monosyllabic forms and consonant clustering discourage tonal processes, while polysyllabic structures permit tonal processes.

## **4. Morphological conditioned tone processes.**

Some tonal processes are morphologically and syntactically conditioned, as most processes are possible at word boundaries. When certain tones occur at word boundaries, certain processes manifest as the tone influences each other.

## **5. Phonological processes**

Tone operates on segments, when a tone bearing segment undergoes any phonological process, the tone will definitely be affected. For instance vowel deletion permits floating tone, tonal linking/relinking, while the assimilatory process permits tone raising and lowering, and other tonal processes.

## Conclusion

This study examined the tonal processes and patterns in Anaañ, and explored the factors that trigger these processes. The analysis was conducted within the framework of Autosegmental Phonology, which treats tone as an autonomous element on a separate tier.

Findings from the study indicate that various tone levels form the basis for tonal processes in Anaañ. The analysis identified several tonal phenomena including tone raising and lowering, tone simplification, floating tones, and tone polarization, among others. These processes are shown to be influenced by factors such as phonological environment, preceding tone, lexical structure, and other phonological processes.

Moreover, the study reveals that certain tonal processes are conditioned by morphological and syntactic structures.

For future research, it is recommended that scholars explore applied and forensic linguistic approaches to the study of Anaañ. These perspectives may open new frontiers for linguistic inquiry within the Anaañ speech community.

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