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Descriptive Analysis of the Kilba Tonal System

Abstract. The article examines tonal processes of Kilba language, which is an important aspect in majority of African languages. The study reveals tonal processes in various types of Kilba words which includes Nouns and Verbs. The study was able to establish the following cases namely: tones and vowel deletion/suppression and contour tone simplification when derivational and inflectional suffixes are added to the basic form of the Kilba word in question. We envisage that such type of study will stimulate linguists to conduct similar types of research not only on other types of Kilba words tones that is not covered by this study, but other Chadic languages that are related to Kilba in term of tonal system such as Marghi, Bura, Higi and Chibbok languages respectively.

I. INTRODUCTION

The Kølba or Høba, as they called themselves before the Fulɓe gave them the present name Kilba because of their tough incursion and mispronunciation of the actual term Kølba, are today located in the northern part of Adamawa State in Nigeria. They are mainly found in four Local Government Areas: Gombi, Hong, Mubi and Michika. The language is classified as a member of the Chadic languages of the central Biu A branch (Newman 1977).

Tone plays a prominent role in African languages, in words and sentences, yet it has often been observed that for most African (Linguists/ lecturers/teachers), teaching tone is complicated and difficult for the following reasons:

(i) Tones are not shown in standard orthography, resulting in a lot of learners as well as teachers getting confused the moment it is introduced as a course or topic.

(ii) A tone requires practical demonstration when being taught or learned.

(iii) It is an aspect that requires constant practice to be mastered.

An attempt is made to present Kilba tone in a way that it can be understood without much difficulty and complication. It is pertinent at this juncture to explain as well as cite what various scholars have said about tone and tonal Language. Tone implies a pitch of voice on which an individual syllable of a word is altered naturally so as to convey a proper meaning to the listener. Every syllable therefore has its assigned pitch or tone. Some syllables are, so to speak, altered on a high pitch and others on a low pitch.

A tonal language can be define as any language ´´having significant contrastive, but relative pitch on each word``(Pike, 1948:3) . However, Welmers (1950:2) cited in Bulakarima (2001) suggests that the definition of a tonal language provided by Pike as "one tone per syllable" is too strong. Instead, he proposes a definition for tonal language as follows: "a tonal language is a language which both pitch phonemes and segmental phonemes enter into the composition of at least some phonemes."

A general definition of a tonal language is that of Bollinger (1975) cited in Bulakarima (2001:78) He defines tonal languages as languages that use "changes in pitch to indicate differences in the meaning of words``. This special pitch is used for two purposes:

(i) to indicate meaning(lexical tone)

(ii) to show grammatical relationships(grammatical tone).

Having introduced the above terms, it is important to note that Kilba, like many African languages, is a tonal language. i.e., Each syllable in a Kilba word or sentence has its pitch, and this pitch is as much an essential element of that syllable as its consonant(s) and vowel(s).

2. METHOD AND PROCEDURE OF DATA COLLECTION

Data were collected from the field, through the use of structured interview questions and tape recording. The structured interview was the primary technique, while tape recording was the

secondary source of data collection. The researcher samples the speeches of sixty (60) Kilba informants who were randomly drawn from the following Towns and Villages: Hong, Pella, Gombi, Mombol, Mijili, and Kala'a.

The researcher interviewed in equal proportion thirty (30) male and female. Ten (10) informants form each Town/Village. But only thirty informants' speech forms were used for our data analysis, fifteen (15) male and fifteen (15) females. Recorded interviews from the remaining thirty (30) informants were used to verify the validity of the data chosen. In the same vein, the researcher also employs his native speaker intuitions.

3. DATA ANALYSIS

The analyses are divided into three parts:

(i) tonal processes in Kilba words namely: Monosyllabic, disyllabic, triasyllabic, and polysyllabic and

(ii) change of tones in Kilba verbs and

(iii) other verbs tones inflectional suffixes

4. TONAL SYSTEM IN KILBA WORDS

Kilba is a register tone language whereby the pitch height of the voice from syllable to syllable is phonologically contrastive. Kilba has two underlying tones namely: high (H, marked with acute accent, as in á) and low (L, marked with grave accent, as in à). As for contour tones, only the falling occurs in underlying representation. The falling tone may be analyzed as a sequence of high plus low on adjacent tone bearing units. Falling contour tone has ^ as in â.

How important tone is in Kilba may be shown by the following short collection of pairs of words of different meanings, whose sounds (vowels and consonants) are differentiated by tones only:

sà	"to drink"	sá	"to lose"
tà	"stomach"	tá	"to cook"
fà	"farm"	fá	"year"
sàl	" bravery"	sál	" man/husband"
tsà	" to weave"	tsá	"to beat drum"

àmà	"mother"	ámá	"but"
mbəl	"bag"	mbəl	"liver/ to shine"
pàm	"different"	pám	"pound sterling"
sàr	"waist"	sár	"grass"
sàsà	"for drink"	sásá	"lost"
shìlì	"men"	shílí	"to come"
shìshì	"hair"	Shíshí	" six pence"
shùwà	"to dry up water"	Shúwà	"tail"
tsəlà	"a basket"	tsəlá	"to sharpen a knife"
yìnà	"to rinse"	yínà	"to fill a pot with water"
zhàzhà	"to erase"	zhàzhá	" funeral ritual food"

In Kilba, for the purpose of convenience, we will discuss the tone pattern using syllabification, i.e. monosyllabic word tone, disyllabic word tone, and polysyllabic word tone.

(1a) Monosyllabic

Words in this group have the tone pattern HL, H and L.

HL	Gloss	HL	Gloss
táù	to tear	háù	to wear
fátù	to put into	mbáù	to tie wrapper

H		H	Gloss
shá	to turn	sár	grass
tá	to cook	sál	man
há	to shout	bwál	ball
tsá	to hit	njí	enough
yá	to burn	tsər	beans

L		L	
sà	to drink	tà	stomach
pù	to put	yì	human back
tsà	to roast	wà	who
ná	to tell	nyà	mouth
tà	to cook	hyà	moon

hà	to take	hyì	leg/foot

(1b) Disyllabic

H-L		H-L	
válà	to help	cedi	money
hərà	to build	cíɗì	fly/honey bee
ngəlà	to abuse	cúlì	seed
fəlà	to jump	císù	eight
mbədà	to blow	pərtù	white
LL		LL	
dəgà	to beat	nənəm	sweet
mərà	to do	hàdà	centre
səkà	to wait	hyàlì	leaf
shùnì	to smell at	nyàvì	door
tsəla	to sharpen	nàkà	it is you
HH		HH	
cúwár	elephant	ɗárí	to taste
shílí	men/male	tsəvər	guinea- fowl
tləká	to sow	gyíwá	quarter(of village)
kúmá	ten	kálfí	fish
ríbá	profit	rétá	half

(1c) Polysyllabic

Words in this group are few in numbers. As far as tone patterning, they come in varying forms.

gəgəɗà (LHL)	to shake	kəràsár (LLH)	rice
ɓəsìyà (LLL)	to rub	kùchà,á (LLH)	palm tree
dzəvəyà (HHL)	to inject/pierce	kəràví (LLH)	roof
ləvərá (HLH)	to be afraid	màdùrɗà(LLL)	pollution
dógárí (HHH)	N.A.policeman	jígádəmá (HHHH)	thinking

Considering the data/examples in (1a), (1b), and (1c) we observe the following tones in Kilba monosyllabic words: HL, H, and L, disyllabic HL, LL, and HH while in polysyllabic

we have LHL, LLL, HHL; HLH; HHH; LLH; and HHHH respectively. We discovered that high tone and high-low (^) monosyllabic words are a few in numbers. The majority of words in this group have L tone.

In the same vein, high-low tone disyllable words are few. Majority of disyllabic Kilba words has a low-low tone pattern. This is also applicable to polysyllabic words In a nutshell, we can categorically state that 90% of Kilba words or lexical items tones are L, LL , LLL and LLLL.

5. CHANGE OF TONE IN KILBA VERBS

It has been observed that tone in Kilba is an essential part of a syllable. However, this does not mean that tone is invariable. In the language we observed that to some extent tones are changed under certain conditions, and the change is characteristic for that words, it has not been possible to observe definite rules for all the changes. But it has been observed that with respect to the verbs in the language, changes generally follow definite rules and grammatical patterns. For examples tones of the suffixes, in both the derived and inflected forms, usually follow a rule-based pattern. Thus the researcher uses verbs to explain these phenomena.

Kilba verbs exhibit a number of tonal processes, in derivation and inflection, which are triggered by morphological operations. We attempt to provide a description of the processes within the framework of non-linear (auto-segmental) generative phonology.

It is important at this juncture to briefly explain what is meant by this theory. Auto segmental representation was enumerated in Katamba (1993) as earlier proposed in the work of his predecessors, such as Goldsmiths (1976), Kenstowicz and Kisserberth (1979), and Leben (1971) in discussing Kilba tones. As the researcher, I will limit myself to descriptive analysis, and try as much as possible to avoid pursuing theoretical complexities that may be posed by the data, unless it is unavoidably necessary. I hope that such complexities of the theory will be taken up by future research on Kilba.

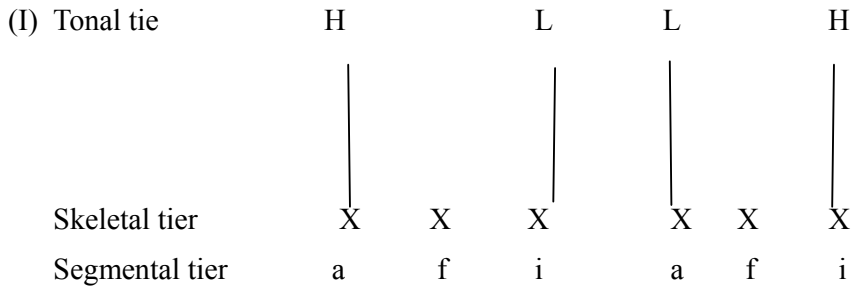
In view of this approach, tones are represented on a separate tier (tonal tier) independent of the sound segments (on the segmental tier). The tones and segment are linked together by association lines in accordance with the principles of the well formalness condition (WFC). Goldsmith (1976:219) and Katamba (1993:158) explained that:

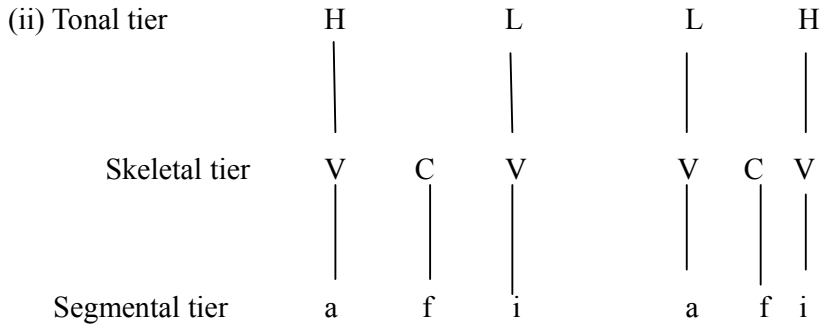
1. Each vowel must be associated with (at least) on tones.
2. Each tone must be associated with (at least) on vowel.
3. No association line may cross.

Katamba (1993) elaborates on the theory. According to him, the choice of the name *auto-segmental phonology* (representation) for this model is intended to reflect the fact that phonology (representation) for this model is intended to reflect the fact that phonological representation consists of segments like stress, tone, vowels, and consonants that appear on autonomous tiers. Similarly Katamba (1993:157) enumerated the following:

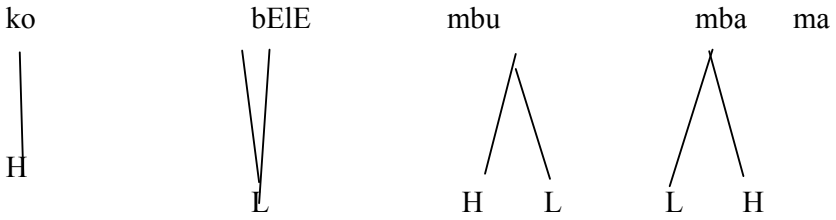
1. The tiers in term of which phonological representations are organised are independent but they are not isolated from each other.
2. The tones (stresses) are best represented on a separate tier from vowels and consonant, which belong to the segmented tier.
3. Mediating between these tiers is the skeletal tier (or CV-tier).
4. Association line indirectly links stress or tone to actual vowel and consonant sound through the skeletal tier.

The above phenomena are exemplified below in Katamba(1993:157).





Katamba (1993) pointed out that the theory does not require one-to-one association of elements on different tiers. Elements at any one tier may be linked to one-to-many with elements at another tier, as exemplified in Katamba (1993:157).



(Mande data adopted from Leben,1978)

Furthermore, the theory allows element at one tier to remain un-associated with any items at another tier. Instead, it may require later the tone of an adjacent syllable as shown in the above example. The morpheme -ma "on" in Mande is underlying toneless. It got its tone when the last tone of the stem to which it is suffixed spreads to it (Katamba 1993).

On a final note on this theory, it's important to state that there exist two types of tonal links: single linked and multiple – linked representation as shown in examples above. For the purpose of exposition, we shall adopt the single link representation in the analysis of the data/examples.

Having explained the theory and the rationale why we adopted the theory for our analysis, the subject in question explained further that Kilba verbs exhibit a number of tonal processes, which are triggered by morphological operations. (Derivation and inflection). The data /examples in (2) below illustrate this phenomenon of derivation and inflection in Kilba verbs.

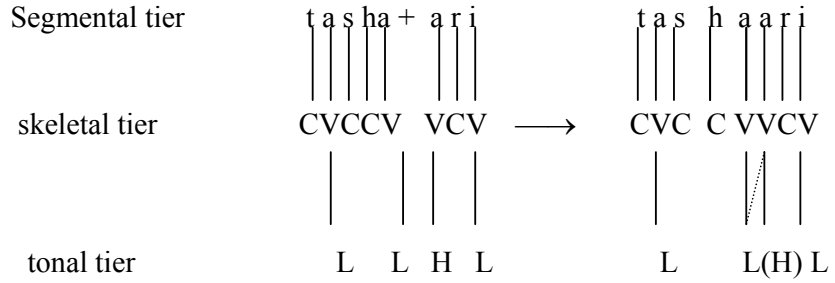
Base Form		Derived Form
tàshà+ árì	⟶	tàshàrì
LL (H)L		L L L
Short		to shorten
kəkərù + árì	⟶	kəkəràrì
L L L (H)L		L L L L
black/dark		to darken
tùkùlùsà+ árì	⟶	tùkùlùsàrì
L L L L (H)L		L L L L L
thicken		to thickened
kwákwàɗù + árì	⟶	kwákwàɗarì
H L L (H)L		L L L L
hot		to heat

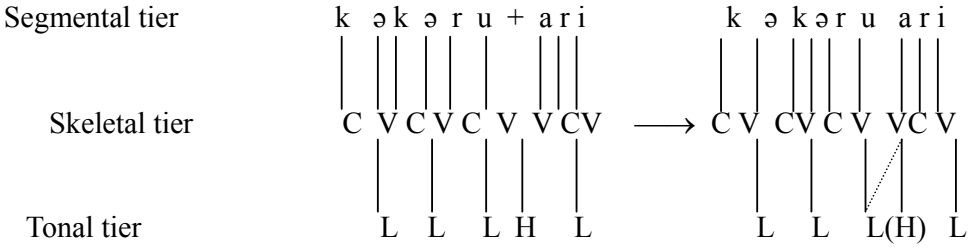
The data / examples in (2) are examples of derivation. The first two examples are verbs derived from adjectives, while the last two are verbs derived from abstract nouns. Similarly consider the following in (3) below:

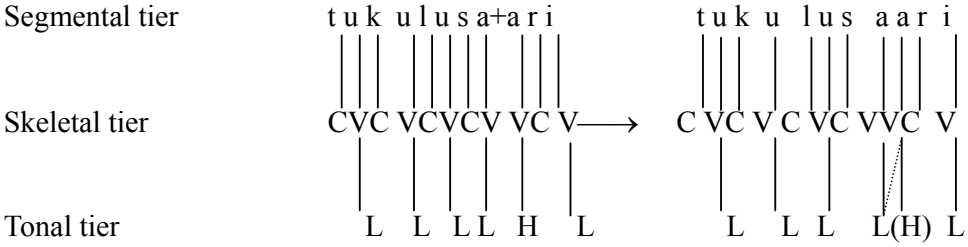
Base Form		Inflected Form
nyì + ánì	⟶	nyànì
L (H)L		L L
to fill		to become filled
Sùwà + ánì	⟶	sùwàn ì
L L (H)L		L L L
to spoil (intr)		to spoil (tr)
təràmà + ánì	⟶	təràmànì
L L L (H)		L L L L
To go		to go with it
hà + árì	⟶	hàrì
L (H)L		L L
to wait		to wait for a while
vàkà+ árì	⟶	vàkàrì
L L (H) L		L L L
to throw		to throw a bit
gəgəɗà + árì	⟶	gəgəɗar ì
L L L (H)L		L L L L
to shake		to shake a bit

Considering the data in (3), it can be observed that in both the derivation and inflection, the

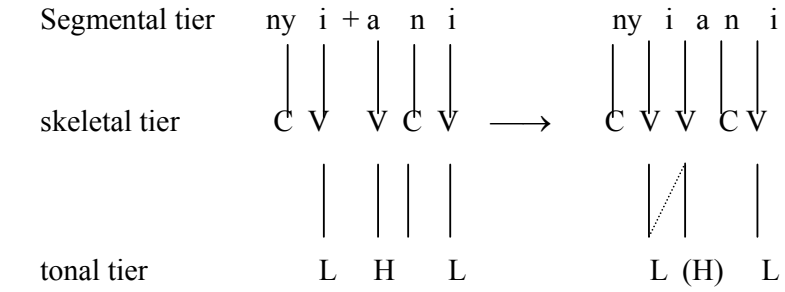
derivation and inflection suffix *-árì* have a high-low tone. Similarly, the inflection suffix *-ánì* has also high-low tone. It has been discovered that both the two processes operate in similar manner in the language. This can be explained using auto-segmental representation as in (4) below:

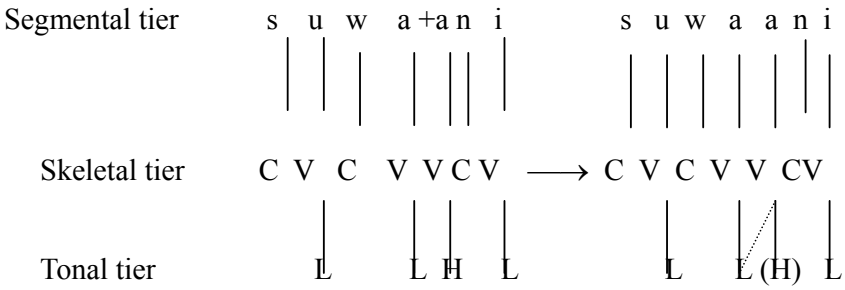


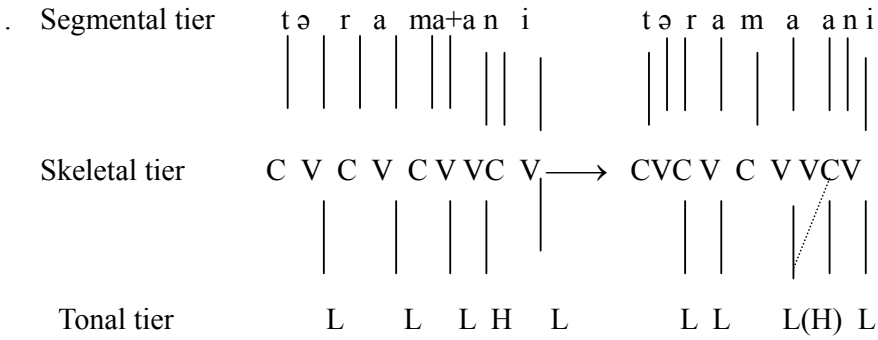




The forms in (4) demonstrate vowel deletion and tone suppression in Kilba derivational processes, within the auto-segmental theory. The above concept cannot be explained using structural/descriptive analysis (tonal modification). It has been observed that when the derivative suffix is added to the base form of the verb, the high tone of the derived suffix is suppressed or left floating. Then the low tone that immediately precedes the suppressed high tone is shifted / docked on to the next tone bearing unit. This occurs because the final vowel of the root is deleted. Similarly, consider the phenomena in Kilba verb inflection in (5) below:





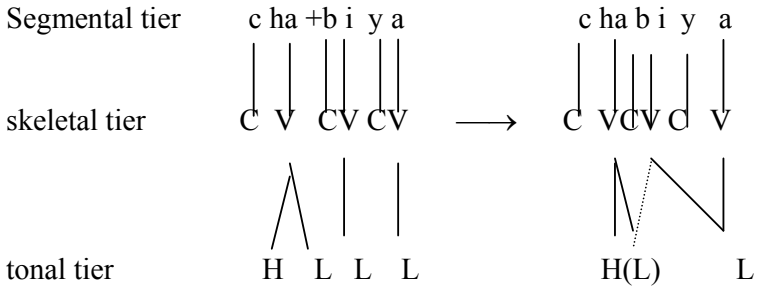


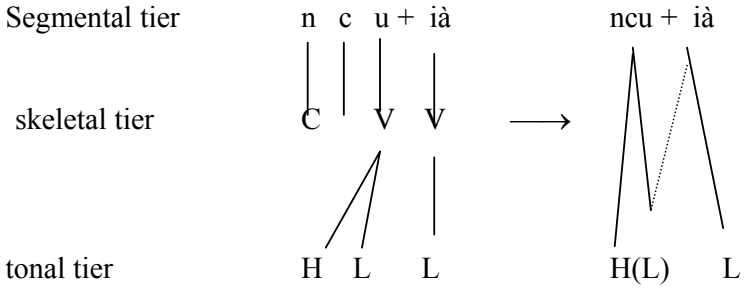
In (5) above, it can be examined that the inflectional suffix *ánì* which has a HL tone is added to the base form. It suppressed the high tone. Then the low tone that immediately precedes the suppressed high tone is shifted on to the next tone-bearing unit. That means this process operate similar to verbs derivation using *–árì* in Kilba.

Under the two processes, it has been observed that there are derivational suffix *–árì* with tone pattern HL and inflectional suffix *–árì* with the same tone pattern. The two suffixes operate the same way when added to the base form. The only difference is that the derivational suffix changes word class while inflectional suffix does not change the word class. . Similarly it can be observed that the inflectional suffix *--ánì* function similar to derivational and inflectional suffix *–árì*. All three suffixes have a high-low (HL) tone pattern.

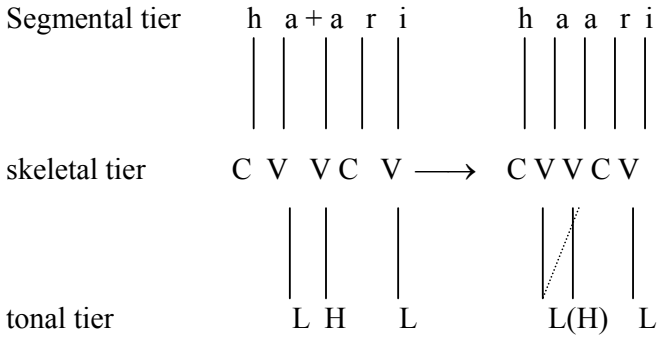
6. OTHER VERB TONE INFLECTIONAL SUFFIXES

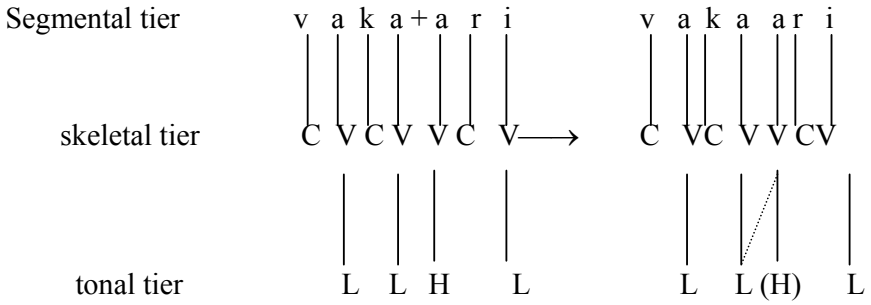
There are exist few cases of verbs tone that is not taken care of in the interpretations above. Consider the following data in (6) below:

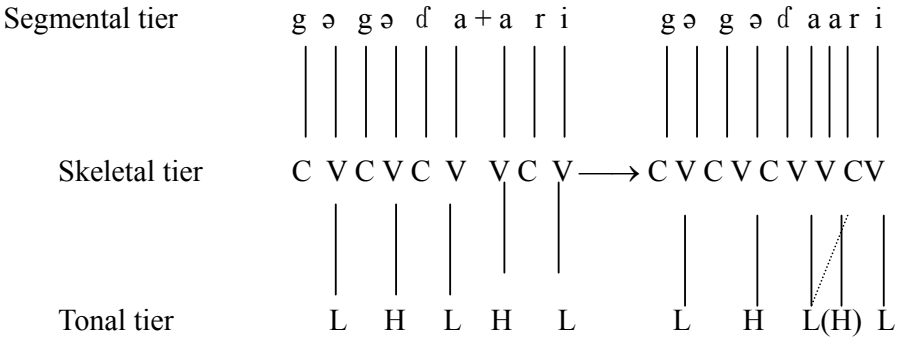




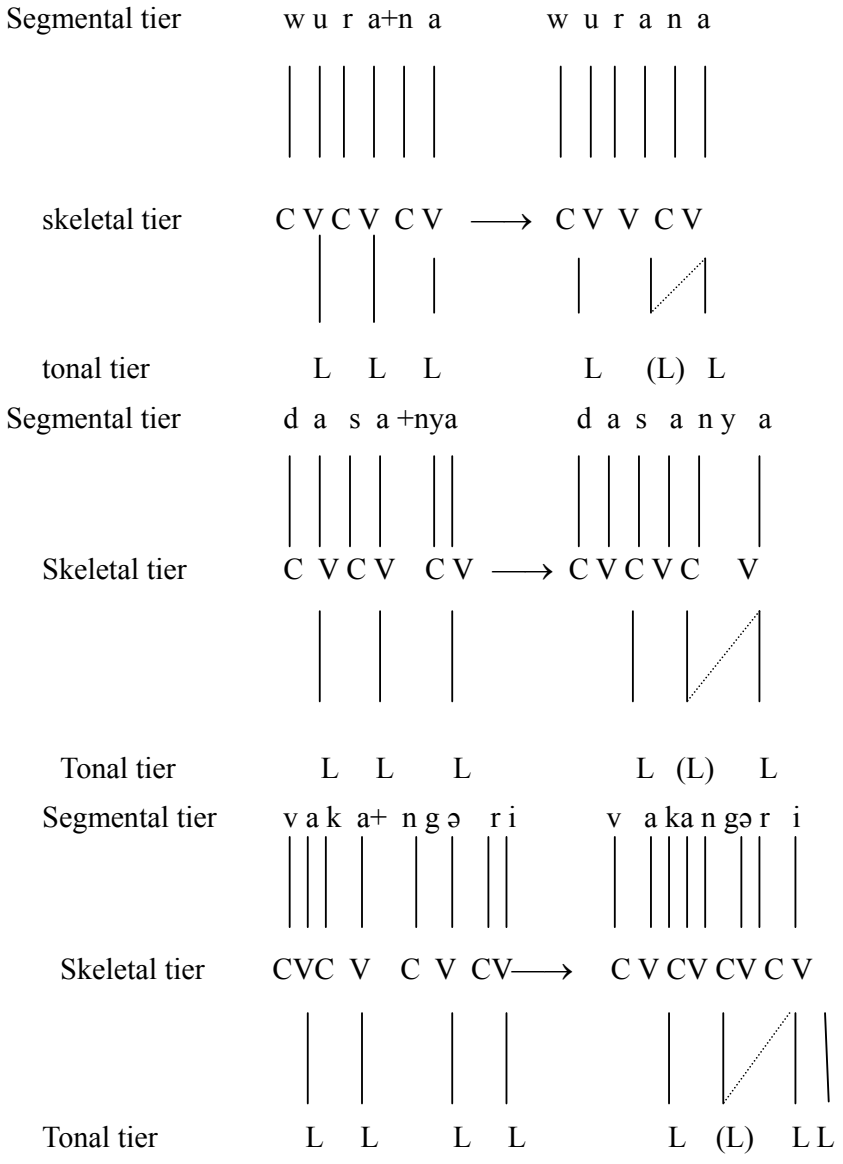
In the same vein, the phenomena using using inflectional suffix can be exemplified below as in *–ari* in (7) below:

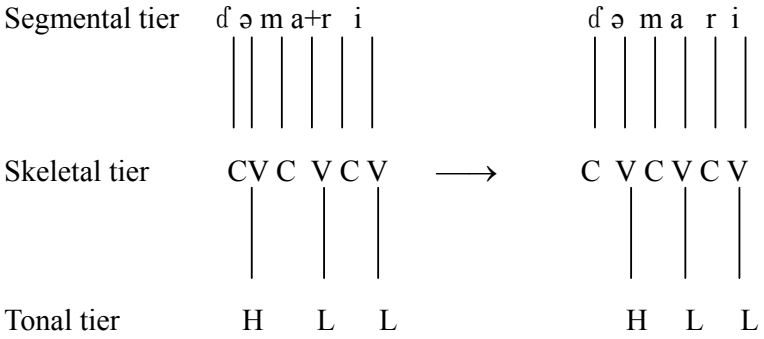






From the above examples, it can be observed that when inflectional suffix *–árì* is added to the base form, it operates similar to both the processes of derivation using the suffix *-árì* and inflection using *–ání*.





Considering the data in (8), it can observed that when the inflectional suffixes -*bìyà* and *rì* are added to the base form, the low tone on the base form is shifted to the low tone of the suffix i.e. contour tone simplification.

Similarly, It has been observed that when the inflectional suffixes -*ná, -nyà* and - *ngərì* are added on to the base form, the low tone on the base form is suppressed or left floating which docked itself to the next tone bearing unit. It has been discovered that it is only the suffix -*rì* when added to the base form that retained both the tone and vowel in the inflected form.

In conclusion, It's important to point out that there are certain tonal changes that occur in the analysis, which cannot conform to the theory as pointed out in the introduction. It is hope that such can be tackled by Kilba Linguists.(chadic Linguists) in the future.

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