

Tonal Systems in Three Dialects of the Kpelle Language¹

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Introduction

The Kpelle language belongs to the South-Western group of the Mande language family. When dealing with Kpelle, a problem arises: are we dealing with one or two languages? According to Gordon (2005), the ethnic group of Kpelle is represented in Liberia (about 500,000 people) and in Guinea (about 300,000). As the Summer Institute of Linguistics puts it, Kpelle is a macrolanguage, while Liberian and Guinean Kpelle should be considered as two separate languages (Gordon, 2005). According to Valentin Vydrin, Kpelle is a language continuum with smooth modifications (Vydrin, 2006, 27). In the present paper I am not going to deal with this problem. I will refer to Kpelle as one single language including Liberian and Guinean groups of dialects; in other words, Liberian and Guinean Kpelle.

Liberian Kpelle has been described quite well during the last fifty years. There are numerous works by William Welmers, a manual for the US Peace Corps (Thatch & Dwyer 1981), and several modern dictionaries where tones are marked (Winkler 1997, Leidenfrost & McKay 2005; the latter includes a short sketch of grammar). As for Guinean Kpelle, one can find its descriptions in two grammars: Casthelain (1952) and Lassort (1952); there is also quite a big dictionary, Leger (1975). Unfortunately, none of the publications on Guinean Kpelle has tonal marks.

I am going to analyze basic tonal patterns found in the three dialects of the Kpelle language. Two of them belong to Guinean Kpelle. The data were collected by myself during a field trip to Guinea, organized by Valentin Vydrin,

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in January-March 2008. The first dialect is spoken in the northernmost Kpelle area. It is a savanna area; that is why it is called *gbálí wòò* which means ‘the language of savanna’. I will refer to it as *Gbali*. The other Guinean dialect considered within the scope of this paper is spoken in the district of Nzérékoré, which is the administrative centre of the Guinée Forestière region, and the center of the Kpelle area in Guinea. It should be also mentioned that this is the dialect into which the Bible was translated. That is why it can be considered “the standard Guinean Kpelle”; I will use the abbreviation *SGK* for it. The third dialect dealt with in this paper is “the standard Liberian Kpelle” as it is described in the above-mentioned works on Liberian Kpelle. Consequently, I will use the abbreviation *SLK* for this variety.

Only the tonal systems for nouns and verbs will be discussed. The first reason is that these two segments are most likely to be basic in the tonal system of any language. The second reason is that my data concerning other parts of speech are insufficient. Third, even if we limit ourselves to the analysis of the nominal and verbal tonal systems only, it is already a great amount of work.

Following are some notes on the terminology I will use. One TONE is assigned to one SYLLABLE, except the case of a FLOATING TONE which has no segmental base, but affects the tonal pattern of the next morpheme. H stands for a high tone, L for a low tone, M for a mid tone, HL for a falling tone, hyphen for a syllabic boundary, # for a pause. However, not only tones *per se* are important for the phonological system in Kpelle, but also fixed tonal sequences, namely TONAL PATTERNS². I will also distinguish CONTOUR and LEVEL tones (and tonal patterns), where the former are characterized by a pitch change (for example, HL for tone and/or monosyllabic tonal pattern; H-HL for disyllabic tonal pattern); while the latter are not (H, H-H, L-L).

All simple words (i.e. not compound, consisting of single morphemes which have mostly mono- or disyllabic exponents) in Kpelle form several groupings according to the tonal patterns which are assigned to these words lexically. Such groupings will be referred to as TONAL CLASSES.

The Proto-South-West Mande tonal system

David Dwyer reconstructs 5 tonal classes in the Proto-South-West Mande language (PSWM):

² However, a tonal pattern may consist of only one tone if it is assigned to a monosyllabic word.

TONAL CLASSES IN PSWM (Dwyer 1978a; 1978b), cit. by Vydrine (2002:247).

- 1). ć, ćć
- 2). ĉ, ĉĉ
- 3). ĉ, ĉĉ
- 4). ćĉ or ćĉ
- 5). ĉĉ

Therefore, there were only two pitch levels in the Proto-South-West Mande, namely high and low. All the tonal patterns represented combinations of these two levels.

Tonal classes of nouns in the modern dialects of Kpelle

Just as in the Proto-South-West Mande language, there are 5 basic tonal classes of nouns in all three modern Kpelle dialects dealt with in this paper (the sixth one, L-H in the Guinean dialects and M-H in the Liberian ones, has less than 10 words and will not be considered here).

Despite the quantitative similarity, I have found remarkable qualitative differences, on the one hand, between the proto-language and the modern Kpelle dialects and, on the other hand, between Guinean and Liberian Kpelle.

2.1. Gbali and SGK have very similar tonal systems; some marginal divergences will be discussed later on. The great majority of nouns in Gbali and SGK fit into the following tonal classes (I follow Dwyer's order in numbering):

- (2). TONAL CLASSES OF NOUNS IN GBALI AND SGK³
 - 1) ć, ćć: *wúlú* 'tree',
 - 2) ĉĉ-1: *yàlâ* 'lion',
 - 3) (ĉ)⁴, ĉĉ: *yòwò* (Gbali) / *yòwâ* (SGK) 'axe',
 - 4) ćĉ: *yílé* 'dog',
 - 5) ĉĉ-2: *gbònò* 'ring'.

It is necessary to note here that L+HL (class 3) and H+HL (class 4) tonal patterns are attested for disyllabic words only and thus cannot be represented

³ Here and in most cases below, I will not take into consideration sequences that include double vowels (-cvv-) and the final nasal element (-cv(v)ŋ); it should be just kept in mind that their tonal behavior in Kpelle is often different from what is discussed here. For further discussion of their respective phonological statuses see [Konoshenko 2008a; Konoshenko 2008b].

⁴ Though in fact for Guinean Kpelle it doesn't matter whether to place the ĉ pattern into the 3rd or the 4th class.

otherwise than L-HL and H-HL. Furthermore, in all the modern Kpelle dialects under consideration, there is a remarkable interaction between parts of speech, tonal classes and number of syllables resulting in an impossibility of tones other than high for monosyllabic nouns and verbs. This is why this paper will deal only with disyllables.

At the first glance, one can think that the tonal system of nouns of the Guinean Kpelle counts 4 tonal patterns: high throughout, low throughout, low tone on the first syllable followed by high-low (I will call it falling tone) on the second one, high on the first syllable followed by falling on the second one. However, I have found several contexts which make it clear that reflexes of the second and the fifth proto-classes in the Guinean Kpelle can be still distinguished. Consider the following table:

(3). DIAGNOSTIC CONTEXTS FOR CLASSES 2 AND 5

Nº	Tonal pattern		+ -PL	[NP V] _{VP}
1	c'c'c'	wúlú 'tree'	wúlú-yáà 'trees'	Ĭ wúlú káà 'I saw a tree'.
4	c'c'ĉ	yílé 'dog'	yílé-yàà 'dogs'	Ĭ yílé kàà 'I saw a dog'.
3	ĉĉĉ	yòwó 'axe'	yòwó-yàà 'axes'	Ĭ yòwó kàà 'I saw an axe'.
2	ĉĉĉ-1	yàlà 'lion'	yàlà-yáà 'lions'	Ĭ yàlà káà 'I saw a lion'.
5	ĉĉĉ-2	gbònò 'ring'	gbònò-yàà 'rings'	Ĭ gbònò kàà 'I saw a ring'.

We can see that nouns (noun stems) belonging to the classes 2 and 5 affect the tone of the next morpheme differently⁵. Two interpretations are possible here.

First, we can decide that the primary tone of the plural marker and the verbal form here is H-L⁶. If the tone of the final syllable of the preceding word (stem) is

⁵ It is interesting that such impact does not depend on the character of the boundary between the stem and the next morpheme: they may be separated by either morphemic or word boundary.

⁶ Though it is quite a difficult question how to describe tonal patterns on double vowels, see [Konoshenko 2008a,b].

falling, a low tone is assigned to the next morpheme, while the last tone of the stem becomes high (as for the words of the classes 3 and 4). In this case we have to postulate a floating low tone at the end of the class 5 words.

Another option is to postulate a low tone for the plural marker and the verbal form. According to Thatch & Dwyer (1981) and Leidenfrost & McKay (2005), in Liberian Kpelle, verbs in analogue tense-aspect form are ALWAYS assigned a low tone⁷. If we choose such an interpretation, words of the class 2 should be ascribed a final floating high tone which shifts to the subsequent element. Consequently, a question may arise: should we ascribe a final high floating tone to the class 1 as well? However, this decision seems unnecessary. In my opinion, the lesser evil here would be to reserve floating final high tone to class 2 words, but not to say that it moves to the next morpheme. Instead I will formulate the following rule:

(4). RULE 1

If a low tone element-2 (a word or a morpheme) follows an element-1 with a final high tone (may it be floating or not), the tone of the first syllable of the element-2 (or the only syllable if it is monosyllabic) becomes high as a result of morphophonological assimilation.

Example: *l̃́ b̃́é-l̃́áá kàà* → *[l̃́́ b̃́é-l̃́áá káà]* ‘I saw a sheep’

This rule does not say anything about the tone on the second syllable of the element-2, as it depends on the structure of the verb stem (for example, CVV vs. CVCV), tense-aspect form of the verb, tonal class of the verb and the syntagmatic context.

Maybe historically it was just an automatic rule relevant for H-H and L-LH words. Later the L-LH tonal pattern has become materially L-L, but the rule still works for both these classes. Accepting the whole model helps us to explain the development of the 2nd tonal proto-class in the history of the Guinean Kpelle. Thus, we can claim that its final ascending tone has been reinterpreted as low followed by floating high tone, while the L-L proto-tonal pattern of class 5 has remained unaltered.

- (5). 2). * *c̃̀vc̃̀* > ***c̃̀vc̃̀*** : *yàlà* ‘lion’,
 5). * *c̃̀vc̃̀* > ***c̃̀vc̃̀*** : *gbònò* ‘ring’.

There are still some divergences between the tonal systems of nouns in Gbali and SGK. Unfortunately, I have not enough data concerning the tonal morphophonology of noun phrases in Guinean dialects which is most likely to be

⁷ As for the plural marker in Liberian Kpelle, it is *-ŋā*; the mid tone in the Liberian Kpelle corresponds regularly to the low tone in the Guinean Kpelle.

different in Gbali and SGK. However, I have found some words whose lexical tonal patterns are not similar in the dialects in question (though the list below is not exhaustive, note that these words are either trisyllables or compounds and thus resembling noun phrases):

- (6). a. *híyê-híyê* (Gbali) vs. *híyé`-híyê* (SGK) ‘hiccup’,
 b. *héyèlê* (Gbali) vs. *héyélē* (SGK) ‘rubber tree’,
 c. *bòmónèè* (Gbali) vs. *bòmónēē* (SGK) ‘fish species’.

In (6)a, the tonal pattern of the Gbali word is such that HL tone of its second syllable is distinctively pronounced, so the following H-HL sequence is realized lower than H-HL (as if it were M-ML), according to the rule of DOWNDRIFT. In the SGK word, the first two tones are realized as high, the third one is phonetically mid, and the fourth is mid-low. This means that the low tone of the second syllable loses its segmental base and becomes floating, thus affecting the subsequent tones (the similar process for the verbal phrases will be described below).

In (6)b, another kind of reinterpretation takes place: the tonal pattern of the SGK variant is sort of leveled as compared with the Gbali word, once again resulting in a mid tone. We can hypothesize the way of such a tonal change: **héyèlê > *héyélē > héyélē*, which can be proved, on the one hand, by the general tendency for high tone to trigger high tone on the following syllable, also expressed in Rule 1, and, on the other hand, by the tendency of the low tone leaving its “mother-syllable” to affect the following tone, also seen in 6a and below.

As for (6)c, the Gbali form here can be described similarly to the second stage of the change given for (6)b, while the SGK form looks like the last stage of the change in (6)b.

2.2. In Liberian Kpelle, mid tone is one of the basic tones constituting tonal patterns:

- (7). TONAL CLASSES OF NOUNS IN SLK
 1). *ćv, ćvćv: wú́rú* ‘tree’,
 2). *C̄V̄C̄V̄: yā́lā* ‘lion’,
 3). *c̄V̄c̄v̄: yū̄ô* ‘axe’,
 4). *ćvc̄v̄: yí́lā* ‘dog’,
 5). *c̄v̄c̄v̄: gbò̀nò* ‘ring’.

Apparently, the 2nd L-LH tonal protopattern has been reinterpreted in SLK as mid throughout, and the 3rd L-HL tonal protopattern has become M-HL:

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- (8). 2). * c̃vc̃v̄ > c̄VC̄V̄: *yālā* ‘lion’,
 3). * c̃vc̃v̂ > c̄VC̄v̂: *yūô* ‘axe’,
 5). * c̃vc̃v̂ > c̃vc̃v̂ : *gbòò* ‘ring’.

Another important observation is that, unlike Guinean Kpelle (where high tone tends to trigger high – or “partly” high – tone on the following syllable avoiding H-L sequences and thus giving H-HL tonal pattern for the 4th class), SLK allows such a sequence and thus its 4th class has H-L pattern (this will be extremely important for the discussion of verbal morphophonology below).

Concluding this chapter, I should say that, as opposed to the Proto-South-West Mande tonal classes, the modern Kpelle dialects tend to level their second tonal pattern either making it low throughout followed with a floating high tone, or fusing its ancient L-LH pattern and thus making it mid throughout. Then, the core difference between the nominal tonal classes in Guinean and Liberian Kpelle is that the latter uses mid tone as a basic suprasegmental unit, while the former does not. For the reader’s convenience I give the final table below:

(9). THE FINAL TABLE OF NOMINAL TONAL CLASSES

PSWM	Guinean Kpelle	Liberian Kpelle
1). c̄v̄, c̄vc̄v̄	1) c̄v̄, c̄vc̄v̄: <i>wúlú</i> ‘tree’	1) c̄v̄, c̄vc̄v̄: <i>wúrú</i> ‘tree’
2). c̃v̄, c̃vc̃v̄	2) c̃vc̃v̄: <i>yàlà</i> ‘lion’	2) C̄VC̄V̄: <i>yālā</i> ‘lion’
3). c̃v̂, c̃vc̃v̂	3) c̃vc̃v̂: <i>yòwô / yòwá</i> ‘axe’	3) c̃v̂, c̄VC̄v̂: <i>yūô</i> ‘axe’
4). c̄vc̃v̂ or c̄vc̃v̂	4) c̄vc̃v̂: <i>yílê</i> ‘dog’	4) c̄vc̃v̂: <i>yílà</i> ‘dog’
5). c̃vc̃v̂	5) c̃vc̃v̂: <i>gbòò</i> ‘ring’	5) c̃vc̃v̂: <i>gbòò</i> ‘ring’

Tonal systems of verbs in the modern dialects of Kpelle

When describing tonal systems of nouns, I considered only lexical tonal sequences and did not touch upon grammatical tones which appear in noun phrases, because of lack of the data.

In this chapter I will discuss tonal patterns attested in verbs, both lexical and grammatically conditioned. It should be noted that verbal tonology in Kpelle reveals an intricate interaction between TONAL CLASSES (that is, lexical tonal patterns), TENSE-ASPECT FORMS (including grammatically ascribed tones) and the SYNTAGMATIC CONTEXT (tones of the morphemes/words surrounding the verb/verbal stem).

The tonal classes will be given for each dialect.

Only three tense-aspect forms will be taken into consideration, in line with the following observation made by Leidenfrost and McKey's for SLK (which seems to be true for the Guinean dialects as well): a verb in Kpelle may appear as a single stem with its lexical tones or as a non-finite form ("gerund" as they put it) with the suffix *-ì* (in this form, the tonal pattern of the verb stem changes sometimes – this is why this form is interesting to us), or, in some tense-aspect constructions⁸, with a LOW TONE (Leidenfrost & McKay, 2005). For the context in which a verb appears with its lexical tone I will take the Perfect construction (10)a; the verb with low tone will be exemplified by the Past construction (10)b; the non-finite form will be given in the Progressive construction (10)c.

(10). EXAMPLES OF TENSE-ASPECT FORMS FROM SGK

- a. *Áá tómá.*
3SG.PRF scream
'He has screamed'.
- b. *È tòrà.*
3SG.PST scream.PST
'He screamed'.
- c. *Gàá tómá-ì.*
be.3SG.PF scream-NF
'He is screaming'.

Concerning syntagmatic contexts, I will confine myself to transitive verbs, as their tones often depend on the tone of the final syllable of the direct object noun which precedes the verb. Besides, I will give some forms of the verbs whose direct object is a pronoun, namely the 1SG and 3SG polyfunctional pronouns expressed through the initial consonant alternation of the verb and a tonal modification. Compare: *Yàá dì háyá* 'You have exhausted them' vs. *Yàá jáyá* 'You have exhausted me' vs. *Yàá jàyá* 'You have exhausted him' (SGK). Unfortunately, the impact of syntagmatic context has not been described sufficiently for Liberian Kpelle, so I will not be able to give the complete picture of tonal modulations for verbs in SLK.

3.1. Now I can start describing the system in Gbali. There are 3 tonal classes of verbs in this dialect:

⁸ The term CONSTRUCTION is used, because any predication requires not only particular form of the verb, but also a pronoun of some particular series. It follows the subject noun phrase: *Héhé àá pá* lit. 'Hehe, he came', where *àá* is a pronoun of the perfect series.

(11). TONAL CLASSES OF VERBS IN GBALI

- 1). ćv, ćvćv: *háyá* ‘wear out’, ‘exhaust’,
- 2). c̀vc̀v (c̀vćv): *hàyà* ‘wound’,
- 3). ćvćṽ: *héléj̃* ‘hang’.

These are verbs in their lexical forms. It is interesting that there are no verbs with ćvc̀v exponents in the class 3, they all have a final nasal –ŋ.

If we put these verbs into various tense-aspect constructions and combine them with direct objects belonging to different tonal classes, we will see very diverse tonal patterns borne by the verbs. For example, we have already seen in (3) how the direct objects expressed by the nouns of different tonal classes affect the tone of the verb in the Past construction in the Guinean dialects.

Let us consider the tonal patterns of verbs in Gbali. As stated above, only the tone on the last syllable (and sometimes the floating tone) of the direct object is important for the tonal realization of the verb (at least in Guinean Kpelle), that is why separate examples with direct objects bearing the H-HL and L-HL tonal patterns are not provided in the chart (12).

In this chart, for the reader’s convenience, the important columns and lines are assigned indexes A, B, C and 1-18 respectively, just like on a chess-board. For example, B8 represents the sentence *Íj̃ yàlà háyá* ‘I wounded a lion’ where the class 2 verb *háyà* ‘wound’ is in the past and has a direct object which belongs to the 2nd nominal tonal class with a floating high tone.

It is easier to start analyzing the table from the B-column where all the verbs are in the past. This is because GRAMMATICAL LOW TONE OUSTS LEXICAL TONES OF THE VERBS thus deleting the difference between the tonal classes, so the verbs here undergo similar tonal changes. We have already discussed these changes and have formulated Rule 1 in (4) which helps us to explain why not all the verb forms have a low tone. According to the rule, if any change takes place, the tone of the first syllable of the morpheme in question is high if preceded by a high tone (floating or not). This is what happens here. The personal 1SG pronoun triggers a similar tonal modulation, but we will see in 3.2 that the nature of such a modulation is different from the one caused by a preceding direct object expressed by a noun with high tone. Then, as Guinean dialects of Kpelle avoid H-L sequences in most cases, verbs with modulated tones acquire a H-HL pattern where the final falling tone is the “reminder” of grammatically assigned low tone.

(12). TONAL PATTERNS OF VERBS IN GBALI

			A	B	C
		Direct Object	Perfect <i>ŋàá</i> ⁹ +DO+V	Past <i>ŋ̄</i> + DO+V (low tone)	Progressive <i>Gáá</i> + DO + V- <i>i</i>
1	1 class <i>háýá</i> 'exhaust'	<i>béláá</i> 'sheep'	<i>háýá</i>	<i>háýâ</i>	<i>háýái</i>
2		<i>yàlà</i> 'lion'	<i>háýá</i>	<i>háýâ</i>	<i>háýái</i>
3		<i>yílé</i> 'dog' [<i>yílé</i>]	<i>hàýà</i>	<i>hàýà</i>	<i>hàýái</i>
4		<i>ɲààlèè</i> 'cat'	<i>háýá</i>	<i>hàýà</i>	<i>háýái</i>
5		1SG 'me'	<i>jáyá</i>	<i>jáyâ</i>	<i>jáyái</i>
6		3SG 'him'	<i>jàýá</i>	<i>jàýà</i>	<i>jàýái</i>
7	2 class <i>hàýà</i> (<i>háýá</i>) 'wound'	<i>béláá</i> 'sheep'	<i>háýá</i>	<i>háýâ</i>	<i>háýài</i>
8		<i>yàlà</i> 'lion'	<i>háýá</i>	<i>háýâ</i>	<i>háýài</i>
9		<i>yílé</i> 'dog' [<i>yílé</i>]	<i>hàýà</i>	<i>hàýà</i>	<i>hàýái</i>
10		<i>ɲààlèè</i> 'cat'	<i>hàýà</i>	<i>hàýà</i>	<i>hàýái</i>
11		1SG 'me'	<i>jáyá</i>	<i>jáyâ</i>	<i>jáyài</i>
12		3SG 'him'	<i>jàýà</i>	<i>jàýà</i>	<i>jàýái</i>
13	3 class <i>héléŋ̄</i> 'hang'	<i>béláá</i> 'sheep'	<i>héléŋ̄</i>	<i>héléŋ̄</i>	<i>héléŋ̄i</i>
14		<i>yàlà</i> 'lion'	<i>héléŋ̄</i>	<i>héléŋ̄</i>	<i>héléŋ̄i</i>
15		<i>yílé</i> 'dog' [<i>yílé</i>]	<i>hèléŋ̄</i>	<i>hèléŋ̄</i>	<i>hèléŋ̄i</i>
16		<i>ɲààlèè</i> 'cat'	<i>hèléŋ̄</i>	<i>hèléŋ̄</i>	<i>hèléŋ̄i</i>
17		1SG 'me'	<i>jéléŋ̄</i>	<i>jéléŋ̄</i>	<i>jéléŋ̄i</i>
18		3SG 'him'	<i>jèléŋ̄</i>	<i>jèléŋ̄</i>	<i>jèléŋ̄i</i>

Now, let us consider the column A with perfect forms where IT IS THE LEXICAL TONE OF THE VERB THAT UNDERGOES SYNTAGMATICALLY CONDITIONED CHANGES. This is why we observe here three different models, in line with the number of tonal classes.

Concerning the class 1, Rule 1 has not its place here, as far as the lexical tones of the verb are high anyway. However, after L\H-HL sequences such verbs get low tonal pattern: *ŋàá yílé háýá* → [*ŋàá yílé hàýà*] 'I have exhausted a dog' –

⁹ In Gbali the pronouns of this series (*ŋàá, yàá, àá* etc.) bear L-H tones before low tone and L-L before high tone.

see A3. This is why we have to formulate the rule, concerning lowering of the tones:

(13). Rule 2

If an element-2 (a morpheme or a word) follows an element-1 which ends with a falling tone, then, if any change takes place, the falling tone becomes high and its low part moves to the first syllable of the element-2 (or the only syllable, if it is monosyllabic) and thus affects its tone which becomes low(er).¹⁰

Example: *ŋàà yílê háyá* → [*ŋàà yílé hàyà*] ‘I have exhausted a dog’.

Just as with Rule 1 in (4), Rule 2 does not say anything about the tone on the second syllable of the element-2, as it depends on many factors, such as the tense-aspect form of the verb, tonal class of the verb and the syntagmatic context.

To finish with the class 1 verbs in perfect, I will say that the high tone of the personal pronoun 1SG blends with the lexically H-H tonal pattern of the verb, while the low tone triggered by the 3SG pronoun appears on the first syllable of the verb, not being able to suppress the high tone on the second syllable: *Yàà jáyá* ‘You have exhausted me’ vs. *Yàá jàyá* ‘You have exhausted him’ - A5-6.

Now let us switch to the class 2 verbs in the perfect form. The most important question here is what their lexical tone is. On the one hand, their appellative form has entirely low tone. On the other hand, when an element with low tone follows

¹⁰ It might seem that there appears a problem similar to the one we faced formulating Rule 1, see (4), namely that we have to assign low floating tone to the class 5 L-L words, because they affect the tones of class 3 verbs in a similar way (see A13 vs. A15, A16). But, unlike H-H and L-L’ nouns whose influence on the subsequent verbs is ALWAYS identical, the influence of the L/H-HL and L-L nouns is not always the same. The Gbali data do not provide such evidence, as we can neither prove it nor disprove – this has to be explained.

L/H-HL and L-L nouns do seem to trigger some tonal patterns of verbs identically (A15-A16, C15-C16). However, running a few steps forward, let us take the SGK data. It has 4 tonal classes of verbs, the fourth class being *c̀vc̀v̄ŋ̄*. Verbs belonging to this class quite often have a 3rd class tonal pattern *c̀vc̀v̄ŋ̄* as a variant. For example, such verbs as *k̀on̄iŋ̄* or *k̀on̄iŋ̄* ‘scratch’ allow both variants after L-L noun and only one after L/H-HL noun: *ŋ̀àá n̄ààlèè k̀on̄iŋ̄ / k̀on̄iŋ̄* ‘I scratched a cat’, but *ŋ̀àá yílê [yílé] k̀on̄iŋ̄ / *k̀on̄iŋ̄* ‘I scratched a dog’. That is why L/H-HL and L-L nouns should be described separately, so Rule 2 should be applied to the L/H-HL nouns only.

such stems, the latter carry a L-H tonal pattern. Here are some examples for ditransitives:

(14). Gbali:

- a. *Yàá nààlèè kòlé mè.*
 2SG.PRF cat give 3SG.IO
 You gave a cat to him
- b. *Yàá nààlèè kòlè máà.*
 2SG.PRF cat give 1SG.IO
 ‘You gave a cat to me’.

Of course, we may claim that the lexical tonal pattern of these verbs is entirely low, because it is low in two contexts of three (L-H_L vs. L-L_H and L-L#). However, if it is entirely low, we would expect that such verbs would get H-HL pattern after the 1st ((H-)H) and the 2nd (L-L’) class nouns and the 1SG pronoun, just as in the past form: **Ŋàà béláá háyá* ‘I have wounded a sheep’, **Àà jáyá* ‘He has wounded me’. But this does not happen: in such contexts the verbs in question get high tones in Gbali¹¹: *Ŋàà béláá háyá* ‘I have wounded a sheep’, *Àà jáyá* ‘He has wounded me’ – see A7, A8, A11 vs. B7, B8, B11. And in other contexts entirely low tone appears before the pause, so it does not have to be explained by the impact of the preceding nominal tones: *Ŋàá nààlèè hàyà* ‘I have wounded a cat’- see A9, A10, A12)¹².

As a result, I argue that it is the L-H lexical tone that should be ascribed to the class 2 verbs in Gbali. Thus the class 2 tonal protopattern L-LH reconstructed by Dwyer has been preserved in the verbal system.

Now let us take the class 3 verbs. Their tonal patterns resemble those of the class 1 verbs, except for the position following L/H-HL and L-L nouns. All the tones on the class 1 verbs get phonetically low after L/H-HL nouns, while the 3rd class verbs get low tone only on their first syllable after L/H-HL and L-L nouns: *[Ŋàà yílé hàyà]* ‘I have exhausted a dog’ vs. *[Ŋàà yílé hèlét]* ‘I have hung a

¹¹ My informant said that there is some difference in the pronunciation of the sentences *Ŋàà ká háyá* ‘I have exhausted you’ and *Ŋàà ká háyá* ‘I have wounded you’, but the tones on the pronoun and on the verb appear to be of the same level in both cases. Maybe the speaker’s observation can be explained by her wish to distinguish forms expressing different meanings.

¹² The same tonal changes are attested in some other Mande languages. For example, in Bamana ascending tonal sequences become entirely low before high tone and before the pause: *sàgá sàbá* → *[sàgá sàbà]* ‘three sheep’, but *sàgá náání* → *[sàgà náání]* ‘four sheep’ (see [Vydrin 2008]).

dog’; *ŋàá nààlèè háyá* ‘I have exhausted a cat’ vs. *ŋàá nààlèè héléj̄* ‘I have hung a cat’ – see A3, A4, A15, A16. The change in the first context (L/H-HL) is triggered by Rule 2, and the change in the second case may take place by analogy (though this works only for the class 3 verbs in Gbali) – see also footnote 10 for a discussion.

Finally, we will consider non-finite verbal forms in Gbali. All the processes and difficulties being already discussed, it will be now easier to understand what happens with these forms in different classes. The 1st class verbs just get a low tone suffix *-i*, but the tones of the stem are the same as in the perfect form (C1-6 vs. A1-6). The 3rd class verbs, with a final element *-ŋ*, add an allomorph of the suffix which sounds like a long vowel *-ì*. Just as with the class 1 verbs, the tones on the 3rd class stems undergo the same changes as in the perfect, so they will not be discussed here (C12-18 vs. A12-18). The 2nd class verbs adding the low tone affix reveal the lexical L-H tone of the stem which is preserved after L/H-HL and L-L nouns and with the 3SG pronoun (C9, 10, 12). However, after H-H and L-L’ nouns and with the 1SG pronoun the tone on the verb’s first syllable becomes high, according to Rule 1. Surprisingly, the tone on the second syllable of the non-finite form does not become high, but it gets low as if the low tone from the first syllable moves to the second one expelled by the “new-born” high tone which is in turn triggered by Rule 1: *Gàá nààlèè hàyái* ‘He is wounding a cat’ vs. *Gàà béláá háyài* ‘He is wounding a sheep’ (C7-8, 11). However, further change does not take place, because the suffix still has low tone, so the above-stated movement occurs only within the morphemic boundaries.

Driving my description to an intermediate conclusion, I should say that in Gbali the tonal system of verbs is formed only by two basic levels of pitch (high and low), while the mid level is entirely contextually conditioned, and that this system is very context-sensitive.

3.2. In what concerns SGK, there are four tonal classes of verbs in this dialect:

(15). TONAL CLASSES OF VERBS IN SGK

- 1). *ćv, ćvćv* : *háyá* ‘wear out’, ‘exhaust’,
- 2). *c̀vc̀v (c̀vćv)*: *hàyà* ‘wound’,
- 3). *ćvćv̄* : *héléj̄* ‘hang’,
- 4). *c̀vćv̄*: *kòníj̄* ‘scratch’.

Now let us consider the models of tonal changes in which the SGK forms can be compared with those in Gbali (cf. Table 16).

Discussing table (12), I moved from one grammatical meaning to another (from past to perfect etc.). This time I find it better to compare tonal patterns of verbs from both dialects following the order of their tonal classes.

We see in (16) that, though in most cases the tone patterns for the class 1 verbs in SGK are identical to those in Gbali, however, there are two key contexts revealing the core difference between the two dialects: after L/H-HL pattern in Gbali, class 1 verbs acquire low tones (for the non-finite forms, the low tone is on the first syllable only), while in SGK such verbs acquire phonetically mid tones, and the tones on all the subsequent words (if any) in a sentence are also lowered (A3, C3). This means that after L/H-HL Rule 2 is realized for the class 1 verbs in SGK as a pure downstep effect.

As for past forms for the 2nd and the 3rd class verbs, they are the same in these dialects (B7-18). Of course, the most interesting point here lies in the tone modulations attested for the class 2 verbs in perfect and in the non-finite form.

As for the 2nd class non-finite forms, they seem to reveal the initial L-H tonal pattern for the 2nd class verbs before the suffix *-i* (C7-12), just as in Gbali. However, it appears that Rule 1 (see (4)) does not work in SGK for the word forms with CONTOUR TONAL PATTERNS: the *hàyàì* form does not undergo any modification after the high tone (floating or not) in SGK: Gbali *Gáá béléáá háyàì* vs. SGK *Gáá béléáá hàyàì* ‘I am wounding a sheep’.

The class 4 verbs also give evidence of such constraint imposed on Rule 1 in SGK, as their tonal patterns do not change in such contexts either: SGK *Gáá béléáá kònízi* ‘I am scratching a sheep’ – see A19-20, C19-20. The only initial high tone possible for the 2nd and the 4th class verbs in SGK is triggered by the personal pronoun 1SG: SGK *Gáá gónízi* ‘He is scratching me’. This means that, as it has already been said, the tonal modification caused by the pronoun is not equal to the change predicted by Rule 1: if Rule 1 describes the morphophonologically conditioned process (the preceding word affects the following one), the tonal modification accompanying the 1SG pronoun is conditioned morphologically, i.e. initial high tone of the verb is a part of the morpheme-operation “initial alternation + initial high tone”, an exponent of the 1SG pronoun (the same can be said about the 3SG pronoun and Rule 2, see (13), though I do not have any context distinguishing the “pronominal” low tone and the one assigned by Rule 2 so far)¹³.

¹³ It is interesting that in C11 in Gbali, the 1SG pronoun triggers lowering of the tone on the second syllable, just as nouns with final high tone do in C7, 8 (*Gàà jáyàì*

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(16). TONAL PATTERNS OF VERBS IN SGK AND GBALI

		Direct Object	A		B		C	
			Perfect <i>ŋàá + DO + V</i>		Past <i>ŋ̄ + DO + V</i> (low tone)		Progressive <i>Gáá + DO + V-</i> <i>ì</i>	
			Gbali	SGK	Gbali	SGK	Gbali	SGK
1	1 class <i>háya</i> 'exhaust'	<i>béláá</i> 'sheep'	<i>háya</i>		<i>háyâ</i>		<i>háyaì</i>	
2		<i>yàlà</i> 'lion'	<i>háya</i>		<i>háyâ</i>		<i>háyaì</i>	
3		<i>yílé</i> 'dog' [<i>yílé</i>]	<i>hàya</i>	[<i>hāyā</i>]	<i>hàya</i>		<i>hàyaì</i>	[<i>hāyāì</i>]
4		<i>ɲààlèè</i> 'cat'	<i>háya</i>		<i>hàya</i>		<i>háyaì</i>	
5		1SG 'me'	<i>jáyá</i>		<i>jáyá̂</i>		<i>jáyáyì</i>	
6		3SG 'him'	<i>jàyá</i>		<i>jàyá̂</i>		<i>jàyáyì</i>	
7	2 class <i>hàya</i> (<i>hàya</i>) 'wound'	<i>béláá</i> 'sheep'	<i>háya</i>	<i>hāyā</i>	<i>háyâ</i>		<i>háyaì</i>	<i>hàyaì</i>
8		<i>yàlà</i> 'lion'	<i>háya</i>	<i>hāyā</i>	<i>háyâ</i>		<i>háyaì</i>	<i>hàyaì</i>
9		<i>yílé</i> 'dog' [<i>yílé</i>]	<i>hàya</i>		<i>hàya</i>		<i>hàyaì</i>	
10		<i>ɲààlèè</i> 'cat'	<i>hàya</i>		<i>hàya</i>		<i>hàyaì</i>	
11		1SG 'me'	<i>jáyá</i>		<i>jáyá̂</i>		<i>jáyáyì</i>	<i>jáyáyì</i>
12		3SG 'him'	<i>jàyá</i>		<i>jàyá̂</i>		<i>jàyáyì</i>	
13	3 class <i>héléŋ</i> 'hang'	<i>béláá</i> 'sheep'	<i>héléŋ</i>		<i>héléŋ</i>		<i>héléŋì</i>	<i>hélézì</i>
14		<i>yàlà</i> 'lion'	<i>héléŋ</i>		<i>héléŋ</i>		<i>héléŋì</i>	<i>hélézì</i>
15		<i>yílé</i> 'dog'	<i>hèléŋ</i>	<i>hēlēŋ</i>	<i>hèléŋ</i>		<i>hèléŋì</i>	<i>hēlēzì</i>
16		<i>ɲààlèè</i> 'cat'	<i>hèléŋ</i>	<i>héléŋ</i>	<i>hèléŋ</i>		<i>hèléŋì</i>	<i>hélézì</i>
17		1SG 'me'	<i>jéléŋ</i>		<i>jéléŋ</i>		<i>jéléŋì</i>	<i>jélézì</i>
18		3SG 'him'	<i>jèléŋ</i>		<i>jèléŋ</i>		<i>jèléŋì</i>	<i>jèlézì</i>
19	4 class <i>kòníŋ</i> 'scratch'	<i>béláá</i> 'sheep'	∅	<i>kóníŋ</i>	∅	<i>kóníŋ</i>	∅	<i>kónízì</i>
20		<i>yàlà</i> 'lion'		<i>kóníŋ</i>		<i>kóníŋ</i>		<i>kónízì</i>
21		<i>yílé</i> 'dog'		<i>kóníŋ</i>		<i>kònìŋ</i>		<i>kònízì</i>
22		<i>ɲààlèè</i> 'cat'		<i>kóníŋ</i>		<i>kònìŋ</i>		<i>kònízì</i>
23		1SG 'me'		<i>góníŋ</i>		<i>góníŋ</i>		<i>gónízì</i>
24		3SG 'him'		<i>gòníŋ</i>		<i>gòníŋ</i>		<i>gònízì</i>

'He is wounding me' vs. *Gàà béláá háyaì* 'He is wounding a sheep'), so there is a combination of morphological and morphophonological changes in C11 for Gbali form.

Now let us consider the perfect forms of the class 2 verbs (A7-12). Though in Gbali the sentences “I have exhausted the sheep” and “I have wounded the sheep” sound alike (that is A1 vs. A7; see footnote 11, however), in SGK they sound differently, because the 2nd class verb acquires a mid tone throughout (!) after a high tone (floating or not): SGK *ŋàá béléáá háyá* ‘I have exhausted the sheep’ vs. *ŋàá béléáá hāyā* ‘I have wounded the sheep’. However, in SGK, in all other cases the verbs of the 2nd class in perfect undergo the same tonal changes as in Gbali (see 14), so they behave as if their lexical tone were L-H (which also appears in the non-finite form). Keeping in mind that the Rule 1 does not apply to the contour word forms in SGK, in this dialect we can imagine the following algorithm for the forms A7 and A8 with mid tones:

(17). SGK:

- a. 1). $hàyá \rightarrow hàyà _ \# / H = \Rightarrow$ Rule 1: 2). $hàyà \rightarrow H / _ _ hāyā$
 b. 1). $hàyá = hàyá _ L = \Rightarrow$ * Rule 1

However, this model makes wrong predictions: the sentence 18a should be correct, but it is not. In the correct variant 18b the tones on the verb form are heightened even before a low tone (on the pronoun) which in general preserves L-H pattern on the verb:

(18). SGK:

- a. **ŋàá béléáá kòlé mà.*
 b. *ŋàá béléáá kōlē mà.*
 1SG.PRF sheep give 3SG.IO
 ‘I have given a sheep to him’.

That is why all I can suggest is to ASCRIBE LEXICAL MID TONAL PATTERN TO 2 CLASS VERBS IN SGK and note that this pattern appears after high tone only (though the verbs in question acquire high tone themselves, if preceded by the 1SG pronoun which is “stronger” than tonal constraints imposed on the verbs by their lexical tonal class). Thus we have a “latent” mid tonal class of verbs, its members having low tones in their appellative form.

The class 3 verbs in perfect and in non-finite forms behave in SGK just like the class 1 verbs (though in Gbali there is quite a big difference between these two classes, as it was said in 3.1) acquiring a mid tone according to Rule 2. The affix *-i* also has a different allomorph in SGK, though this does not concern directly the current topic of our study.

The class 4 of verbs in SGK is of interest, because it does not exist in Gbali and because it does not obey Rule 1: it yields to the grammatical high tone of the 1SG personal pronoun only (which has been discussed already).

So we see that mid tone is more frequent in SGK than in Gbali, as in SGK it serves to distinguish two classes of verbs in an important context (after high tone), appearing there quite unexpectedly. That is why we have to ascribe “latent” lexical mid tone to the class 2 verbs in SGK.

3.3. Liberian Kpelle (SLK).

SLK has 4 tonal classes of verbs, the same way as SGK. Here they are:

(19). TONAL CLASSES OF VERBS IN SLK

- 1). $c\acute{v}$, $c\acute{v}c\acute{v}$: *yíí* ‘cook’ (Gbali, SGK *yíí*)
- 2). $C\bar{V}C\bar{V}$: *píí* ‘throw’ (Gbali, SGK *píí*)
- 3). $c\acute{v}c\grave{v}$, $c\acute{v}c\grave{v}\eta$: *séìèη* ‘hang’ (Gbali, SGK *héìéìη*)
- 4) $c\bar{V}c\acute{v}\grave{\eta}$: *tūááη* ‘push’ (? - Gbali *túnóη*, SGK *túnóη* / *tùnóη* ‘touch’)

It is obvious that the 1st class of Liberian verbs corresponds to the 1st class of Guinean verbs, the 2nd to the 2nd etc. It should be noted here that, unlike Gbali and SGK, there is a certain number of verbs without a final nasal element in the class 3 in the SLK (though I am not sure that it is true for the 4th class): *sáìà* ‘spread out’. And in the SLK there is also a class of verbs with lexically assigned entirely mid tonal pattern, which seems to appear even in the appellative form (unlike in the SGK). Besides, the Liberian M-HL tonal pattern corresponds to the Guinean L-HL tonal pattern, but here the difference between the dialects is just the same as in their noun tonal systems.

As it was already said, I do not have sufficient information about the interaction of tonal class, grammatical form and syntagmatic conditions in the SLK. However, I will refer to some useful observations made in the grammar sketch of the SLK by Leidenfrost and McKey (2005).

First, if we consider constructions with the lexical tone of the verb, we see that SOMETIMES Rule 1 (about heightening of tones) works in SLK. As Leidenfrost and McKey put it, “[i]n all constructions using stem tone EXCEPT the past negative, if a MID or HIGH tone precedes the stem, SOME verbs with mid stem tone change that tone to high, while others do not” (Leidenfrost & McKay, 2005:64). In other words, not any class 2 verb undergoes a heightening of their tones in SLK. Moreover, in the past form of the verb with low grammatical tone, the Rule 1 does not work in SLK. In the above-mentioned grammar sketch, I have found some examples with intransitive verbs. Compare:

(20)a. Guinean dialects

È pà ‘He came’ vs. *É pà* ‘You came’ (my data).

b. SLK

È pà ‘He came’, *Í pà* ‘You came’ (Leidenfrost & McKay, 2005:66).

So Rule 1 seems to be much weaker in the SLK than in the Guinean dialects.

As for the Rule 2 (concerning lowering of the tone(s)), it also seems to be less widespread in the SLK. In the Guinean dialects this process is triggered by the unsteady low part of the final HL tone, and there are two tonal patterns ending with such tone: H-HL and L-HL. In SLK there is only one “suspicious” tonal pattern, namely M-HL, while, instead of H-HL, the SLK has a H-L tonal pattern whose final low tone is quite unlikely to trigger any change of the subsequent tones. Unfortunately, I have not found any information about this process in the grammar sketch.

Finally, verbs from different tonal classes get the following non-finite forms in Liberian Kpelle:

(21). Non-finite forms in SLK (in comparison with Gbali and SGK):

- 1). *yílí* ‘cook’ – *yílí-ì* (Gbali, SGK *yílí-ì*)
- 2). *pīlī* ‘throw’ – *pīlī-ì* (Gbali, SGK *pīlī-ì*)
- 3). *sélèŋ* ‘hang’ – *sélèŋ-ì* (Gbali *héléŋ-ì*, SGK *héléŋ-ì*)
- 4). *tūáj* ‘push’ – *tūán-ì* (? - SGK *tùóŋ-ì* ‘touch’)

So the changes here are similar to those in Guinean dialects, the divergences being predictable. On the other hand, I do not think that these forms might change a lot depending on the left context, as the morphophonological processes formulated and discussed in the previous chapters are not very widespread in the SLK, unlike in the Guinean dialects.

4. Summary

Let us try to formulate three basic factors relevant for the tonal system of Kpelle and evaluate them in each dialect. These parameters are: CONTEXT SENSITIVITY, NUMBER OF TONAL CLASSES (tonal patterns), and NUMBER OF PITCH LEVEL OPPOSITIONS. They are more or less independent of each other (theoretically, a higher number of the relevant pitch levels makes possible a greater number of the tonal classes in a language; on the other hand, this possibility is not necessarily realized). We will see that each dialect shows its own preferences in regard to these parameters.

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The CONTEXT SENSITIVITY is a parameter which shows the value of morphophonologically conditioned changes of a word form in a sentence. There are two rules in the Kpelle dialects. Rule 1 concerns heightening of lower tones, and Rule 2 deals with lowering of higher tones. In Gbali this parameter has a great importance, because tones of practically any verb form are affected somehow by the tones of the preceding morphemes (whenever they are different from the tones of the verbs). So Gbali can get 3 relative points for this parameter¹⁴. In the SGK this parameter can be valued at 2 relative points, because in this dialect Rule 1 seems to be irrelevant for the morphemes carrying L-H tonal patterns (see C7-12, A19-24, C19-24 in (16)). In the SLK word forms are least context-sensitive, the above mentioned Rules having a very narrow scope, as it was mentioned in 3.3. So I give 1 point to this parameter in the SLK.

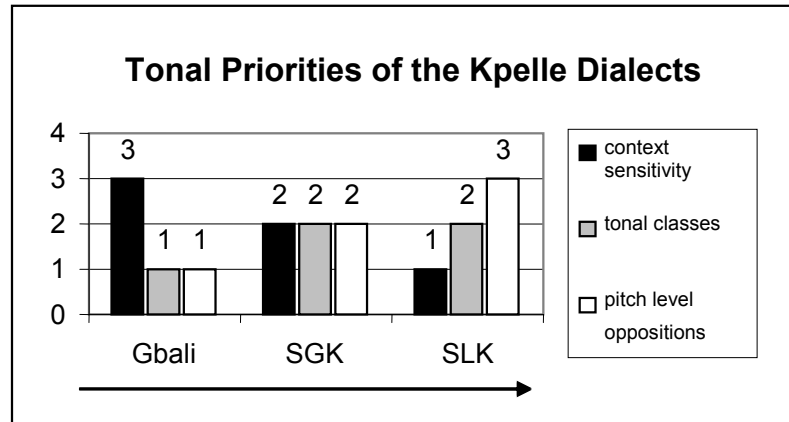
The NUMBER OF TONAL CLASSES: The dialects that are within the scope of this paper have quantitatively similar systems of tonal patterns for nouns, but their verbal systems are different: there are three classes of verbs in Gbali and four in SGK and SLK. That is why Gbali gets 1 point for this parameter, while SGK and SLK get 2 points each.

The NUMBER OF PITCH LEVEL OPPOSITIONS. In Gbali the mid tone (phonetically, a mid level of pitch) is extremely marginal and morphophonologically conditioned (if not lacking, see footnote **Error! Bookmark not defined.**), in other words, there are only 2 basic levels of pitch relevant for this dialect. In SGK the mid tone is more relevant, it appears in a greater number of contexts than in Gbali, and “latent” mid tonal pattern can even be considered as lexically assigned to class 2 verbs. In SLK, the mid level of pitch is overtly pronounced even in the quotation form and it is morphophonologically unconditioned. The value of this parameter can be estimated as 1 in Gbali, 2 in SGK and 3 in SLK.

Now let us draw a diagram showing the differences between the dialects:

¹⁴ This dialect could get even more points, because the 1st and the 3rd tonal classes of verbs having similar initial high tones react differently in the same conditions, unlike SGK (see A3, 4 vs. A15,16 in 16). But in fact this is another parameter consisting in tonal class differentiation which is relatively of the same value in the dialects in question.

(22). TONAL PRIORITIES OF THE KPELLE DIALECTS



The two-level tonal system in Gbali seems to be the most archaic in comparison with other dialects (as it is closer to the PSWM system reconstructed by David Dwyer). The diagram manifests a gradual shift from a system with poorer inventory and richer combinatory conditioning in the North (Gbali) to a system with a richer inventory and poorer combinatory conditioning in the South (SLK). This, in turn, gives evidence of the tendency for systemic harmony which is so exciting in human languages.

Abbreviations

- H – high
- HL – high-low
- IO - personal pronoun of the indirect object series
- L – low
- NF – non-finite
- PF – personal pronoun of the polyfunctional series
- PL – plural
- PRF – perfect
- PST – aorist
- PSWM - Proto-South-West Mande
- SG – singular
- SGK – Standard Guinean Kpelle
- SLK – Standard Liberian Kpelle.

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