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THE REPRESENTATION OF STRUCTURAL TONES, WITH SPECIAL REFERENCE TO THE TONAL BEHAVIOUR OF THE VERB, IN BEMBA, NORTHERN RHODESIA

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1. INTRODUCTION

1.1. ON the structural level, it is usual to consider and write each element (radical, affix, &c.) as it occurs, both in the form quoted and in all other forms, as an abstraction. On the phonological level, we normally discuss and note down each word in terms of relevant sound units, disregarding structural variations if they happen to be neutralized for the hearer. On the phonetic level, we consider and try to write each sentence as it sounds in the particular utterance under examination. The relationship between the phonological and the phonetic levels is simple and clear, though one should not be misled by this clarity into assuming identity.

It is customary to call a phonetic/tonetic form the *realization* of a phonological/tonological form. Here, a phonological form is called the *representation* of a structural form, and this article is chiefly concerned with the tonal relationship between structural and phonological levels, i.e. with *tonal representation*.

1.2. Each of the three levels is given an orthography of its own, viz.

(1) structural:	bá-ka-pít-a	represented by
(2) phonological:	bákapítá	realized as
(3) phonetic:	ʋákapìtà	(they will pass)

1.3. Other conventions used here are:

H = structural high tone
L = structural low tone
HL = structural high-low, subject to contraction
LH = structural low-high, subject to contraction
+O = with zero post-radical tone(s)
+D = with diatony (see below for discussion)
+P = with post-radical high tone(s)
+F = with high final

+R = with raised final
(LP) = low prefix
(S) = subjunctive pattern
(TD) = tonal determinant
OR = object relative tense
SR = subject relative tense
→ = is represented phonologically by

(Lowercase letters refer to phonological level)

Numbers in square brackets are tense numbers according to Sharman's system. (See J. C. Sharman, 'The Tabulation of Tenses in a Bantu Language (Bemba, N.R.)', to be published in a forthcoming number of *Africa*.)

Roman numerals refer to Rules.

1.4. The material on which the findings are based was collected intensively during the period January 1950–June 1951 near Kasama (Central[1] Bemba), and sporadically during the periods July 1951–June 1952 and February 1953–May 1954 from Central Bemba informants in Lusaka, Northern Rhodesia.

1.5. Although Rule I here laid down will be familiar to students of Bemba, new rules (suggested by an examination of hitherto unexplained features and of forms hitherto unrecorded) have produced a great simplification of the over-all picture: all primary and subsidiary rules are now rigorously applicable.

2. TONAL REPRESENTATION RULES

2.1. *General*

I. Structural high doubles on following low element only if next element is also low.

II. Structural low-high (to be contracted) obeys Rule I, the resultant long vowel being represented in tonal contrast to the following element.
(Structural high-low simply obeys Rule I.)

Examples (Translations are given in the Annexure, see pp. 402–3 below):

I.	H L L → h h l	bá-ka-fik-a		[71] → bákáfika (kúmúmáná)
	H L H → h l h	bá-ka-pít-a		[71] → bákapítá (múmúsébó)
II.	LH L L → ll h l	tu-á-fik-a		[41] → twaafíka (kúmúmáná)
	LH L L → ll h l	tu-í-som-a	[neg. S02]	→ twiisóma
	LH L H → hh l h	tu-ákuláa-táp-a		[57] → twáákuláatápá (ámensí)
	LH H → ll h	tu-á-pít-a		[41] → twaapítá (múmúsébó)
	HL L → hh l	bá-a-fik-ile+P*		[11] → bááfikílé (kúmúsí)
	HL H → hl h	bá-a-pít-ile+P		[11] → báapítílé (múmúsébó)

(any types not cited are self-evident)

* See below (2.3.2) for explanation.

2.2. *Monophone prefixes.* (Those consisting of a vowel or, in Bemba, a nasal consonant only) may be structurally low (1st and 2nd persons) or high (all other classes).

In this they are in complete tonal accordance with diphone prefixes. Their behaviour is different, however:

III. Monophones not subject to contraction obey Rule I, the prefix itself being represented in tonal contrast to the following element.[2] (Monophones subject to contraction simply obey Rule II.)

Examples:

III.	á-ka-fik-a	[71] → akáfika (mailo)
	á-ka-túm-a	[71] → ákatúmá (kapááso)
	u-á-fik-a	[41] → waafíka (kúmúsébó)
	ú-a-ful-ile+P	[11] → wááfulílé (kalé)

NOTE: After pre-initial elements, monophone *a-* (Class 1) is not represented in *any* way and, in being unrepresented, even causes the non-representation of any 'determined' tone that *should* have fallen upon it.* We may contrast with this the behaviour of any other monophone, e.g. *ú-* (Class 3) or *u-* (2nd person singular).

a-'+á-	aᴸá-lek-a	(TD)+P	[011] → aleká . . .
a-'+ú-	aᴸú-lek-a	(TD)+P	[011] → aúleká . . .
a-'+u-	aᴸu-lek-a	(TD)+P	[011] → aúleká . . .

* See below (' Determinants ') for explanation of ' pre-initial', (TD), and for the phrase ' determined tone '.

2.3. Imposed patterns and imposed tones. In some types of tenses, a total pattern must be displayed, even if this means overriding the inherent tones of certain elements. In some types, certain single elements must display certain tones, irrespective of what their inherent tone is, or what its ' normal ' representation would be. There are eight varieties to be considered, viz.:

IMPOSED PATTERNS
- (1) tenses with *diatony*[3] (see below for discussion of this and all other terms in italics in this list) (abbreviation: D);
- (2) tenses with *post-radical high* (P);
- (3) tenses with high prefix and *high final* (F);
- (4) tenses with high prefix and *raised final* (R);
- (5) tenses with *subjunctive imposed pattern* (*either clear or partially obscured*) (S);

IMPOSED TONES
- (6) forms with *contrast* (C);
- (7) tenses with *low prefix* (LP);
- (8) tenses with *determinants* (TD).

2.3.1. Diatony. After the last structural high tone in certain tenses, all syllables are high. (But see Rule IV.) This phenomenon is here provisionally called diatony.[3] (Diatony occurs in all but one of the positive even-numbered main sentence tenses, in all even-numbered negative progressive tenses, in negative [22, 32, S 04, S 74]: in the remaining negative tenses, odd and even are not distinguished: see below at 2.3.2.) All positive tenses with diatony have pre-radical tense signs which are either diphones or more.

IVa. In tenses with diatony, a high-toned object infix before a high-toned radical is itself regarded as the head of the diatonic chain.

IVb. In tenses otherwise having diatony, a high-toned object infix doubles on to a low-toned radical and the diatony is not represented.

Examples:

	tu-álii-lond-ol--ol-a	+D	[22] → twaalíílóndólólá
IV*a*.	tu-álii-fí-láb-il-il-a	+D	[22] → twaalíífílábílílá
IV*b*.	tu-álii-fí-lond-ol-a	−D	[22] → twaalíífílóndola

The special case of structural low-high-low and high-high-low subject to contraction: Rules I and II may be applied in all cases, except when these combinations are followed by an inherent high itself the head of a diatonic chain. This only occurs in tense [42] with a high radical, since a high infix with a low radical does not start such a chain. (Rule IV*b*.)

V. The combination: structural ' any '-high-low before an inherent high at the head of a diatonic chain is represented as long high. The following syllables are represented as slipped.

Examples:

V.	á-áa-fíont-el-el-a	+D	[42] → ááfyontelela
	á-áa-bá-fíont-el-el-a	+D	[42] → áábafyontelela
But:	á-áa-lond-ol-ol-a	+D	[42] → áálóndólólá
	á-áa-bá-lond-ol-oel-a	−D	[42] → áabálóndolweela

(For some further discussion see J. C. Sharman, 'The Tabulation of Tenses in a Bantu Language (Bemba, N.R.)'.)

2.3.2. *Post-radical high tone(s)*. After the radical in certain tenses, all syllables are high.

Post-radical high tone characterizes positive [11, 15, 05, 06 : 011 and S 71] : negative [11, 15, 01, 51, 71, S 01, and S 71]. All except [S 71], neg. [71] and neg. [S 71] (i.e. the full futures) have either zero or monophone pre-radical tense signs.

Examples:

tu-a-samb-il-il-a	+P	[15] → twaasambílílá (néécisúngu)
tu-a-láb-il-il-a	+P	[15] → twaalábílílá (nakúmúsí)
tu-í-som-a	+P neg. [S 01] →	twíísomá (káláta)

2.3.3. *High final*. In certain tenses the last syllable is high, and there is at least one low syllable between this and the prefix, even if this means neutralizing the inherent high of a radical: this phenomenon is here provisionally called 'high final'. It occurs in tenses neg. [05] and [S 01], and in certain forms of the imperative. ([S 01] negative and [S 71] positive and negative we may suspect of having had a high final which has been replaced by post-radical high in the presence of an element between prefix and radical, see Rule VI.) (In e.g. [S 03/04] the high final turns up in the pre-radical tense sign[4] (see 2.3.5).) High final should be carefully distinguished from *raised final*. (See 2.3.4 below.)

Examples:

ta-'-tu-láb-ile	(TD)	+F	[05] → tatúlábilé
tu-pít-e		+F(S)	[S 01] → túpité

But:

VIa. In tenses with high prefix and high final, the high final is replaced by post-radical high in the presence of an element between prefix and radical. (The *ta-' - -ilé* tense obviously does not fall into this category, since the high tone on the prefix is 'determined' by the *ta-'*. See below, 2.3.8. Determinants.)[5]

VIb. In subjunctive tense neg. [S 02], zero post-radical tone is replaced by post-radical high in the presence of an object infix, and is then indistinguishable from neg. [S 01] with object infix.

Examples:

VI*a.*	mu-bá-lond-ol-oel-e	F → P(S)	[S 01] → múbálondólwéélé
	tu-í-lond-ol-ol-a	O	neg. [S 02] → twiilóndolola
VI*b.*	tu-í-bá-lond-ol-oel-a	O → P	neg. [S 02] → twiibálondólwéélá
	tu-í-mu-lond-ol-oel-a	O → P	neg. [S 02] → twiimúlondólwéélá

2.3.4. *Raised final.* In one type of *relative* tense (with high prefix), the final syllable is normally in tonal harmony with the prefix: this phenomenon is here provisionally called ' raised final '. (In these tenses, monophone prefixes simply obey Rule III, and the raised final is unaffected.)

Examples:

tu-ka-fik-a	+R	[OR 71] → . . . (ílyo) túkáfiká . . .
á-ka-fik-a	+R	[OR 71] → . . . (ílyo) akáfiká . . .

But:

VII. When an inherently low radical is preceded by a high tense sign, and followed *immediately* by a raised final, the radical may either (*a*) accept doubling, in which case the final high is not represented (cf. Rule I), or (*b*) not accept doubling, in which case the final high is represented normally (cf. Rule I). N.B. Alternative (*b*) is impossible for long-vowelled radicals (q.v. at 2.4).

Examples:

VII. tu-ácí-fik-a	+R	[OR 31] → (ílyo) (*a*) twáácífíka . . .
		(*b*) twáácífiká . . .
tu-ácí-poos-a	+R	[OR 31] → (ílyo) twáácípóósa . . .

2.3.5 (cf. also 2.3.3 above). *Subjunctive pattern* occurs, either clearly, or partially obscured, in tenses [S 01, S 01 neg.]; [S 71, S 71 neg.]. Subjunctive tenses divide into two: (*a*) those of which the basic pattern is H L H and (*b*) those of which the basic pattern is L H L. (*a*) typically have high prefix—low ' central '*—high final† (with high final → post-radical high† in presence of an intrusive pre-radical element: in such cases, there is still a low between prefix and final *if* there is a tonally ' open ' syllable to display it). (*b*) typically have low prefix—high ' central '—low final → low post-radical (since there is always an intrusive pre-radical element, -*í*-).

* Typically the radical, but if there is a CV or CVV tense sign after the prefix then it carries the ' central ' tone.

† If a CVV pre-radical tense sign occurs, it will carry the ' post-radical ' high or the high ' final ': thus [S 03] *'-leé-* and [S 73] *'-kalée-*.

From the foregoing, we have:

VIIIa. In [S 01] all short vowel radicals are low toned; but long vowel radicals (having a second 'tonally open' mora), and radicals with one or more extension syllables, (re)acquire a high tone by doubling, provided that Rule I is observed (see also 2.4).

Examples:

tu-pít-e	+F(S)	[S 01] → túpité
tu-lub-ul-ul-e	+F(S)	[S 01] → túlúbululé
tu-poos-e	+F(S)	[S 01] → (→túpóosé) → túpóóse

VIIIb. In [S 71] and [S 71] neg. *-ka-* always resists doubling.

Examples:

bá-ka-lim-in-in-e	F → P(S)	[S 71] → bákalimíníné
bá-í-ka-lim-in-in-a	F → P(S)	neg. [S 71] → béékalimíníná

2.3.6. *Tonal contrast* (C) has already been noted at the phonological level in Rules II and III: it also occurs at the structural level (as a purely grammatical feature) in simple imperatives of low-toned radicals, which may be regarded as having (i) inherent radical tone, (ii) following syllable contrasted to the radical, and (iii) the remainder in harmony with the radical. (High-toned radicals simply have raised final.)

Examples:

lond-ol-ol-a	+CC (double contrast)	londólola
bút-uk-isi-a	+R	bútúkisyá

NOTE: With long-vowel verbs having no third syllable, inherent high is doubled on the following mora, and R is represented with slip.

e.g.	túal-a	+R	twáála

This is only one of the possible ways of describing the tonal behaviour of the imperative, which in any event needs special treatment.

The rules are as follows:

(1) All imperatives with final *-E*, i.e. all with affix *KA-* or with any object affix *except* 1st person singular ~~N~~- have P.

(2) Those with final *-A*

   (*a*) with no affixes, with *SÍ-* alone and *MBÁ-* alone, have harmony between radical and suffix, *plus* an overriding high immediately following a low radical;

   (*b*) with object ~~N~~- alone, with *SÍ-*~~N~~- and with *MBÁ-*~~N~~-, have F, *all* radicals being represented as low;

   (*c*) with *ÁKU-* and *ÁKU-*obj.- have F.

N.B. Imperative affixes (which include *KA-*, *SÍ-*, *MBÁ-*, *ÁKU-* and objects) behave 'hierarchically' when in combination, i.e. there is a fixed order of application of the above rules; but this is not here relevant, and will be discussed elsewhere.

2.3.7. *Low prefix* (LP)

(i) In one type of relative tense all prefixes are low.

(ii) In main sentence tenses with *-ingá-* as first element of their tense-sign all prefixes are low.

(iii) In tense [S 02] neg. all prefixes are low.

IX. When the low-toned prefix of certain tenses contracts with a structural high the resultant long vowel is represented as *low*, even where this involves disobeying Rule II.

Examples:

IX.	bá-ákuláa-pit-a	(LP)	[SR 57] → (abántu) baakuláapítá . . .
	bá-íngá-konk-elel-a	(LP)	[071] → bengákónkelela
	bá-í-som-a	(LP)	neg. [S 02] → beesóma

2.3.8. *Determinants* (TD). Certain pre-initial elements may be regarded as determining the tone of the syllable following. (By ' pre-initial ' we mean ' occupying a position *before* the prefix '.)

They include:

a-'-	[011, 013, 014]
náa-'-	[positive 06]
ta-'-	[negative 11, 13, 14, 15: 21, 23, 24: 31, 32, 33, 34: 01, 03, 04, 05, 07]
ta-`-	[negative 51, 57, 58: 71, 73, 74]

Prefixes with tones so determined may be regarded as having imposed tone.

Examples:

a-'tu-lek-a	(TD)+P	[011] → atúleká . . . . (nga tafulilwé)
a-'tu-láb-il-il-a	(TD)+P	[011] → atúlábílílá . . (nga tacíwéemé)
náa-'tu-lek-a	(TD)+P	[05] → náatúleká
náa-'tu-láb-il-il-a	(TD)+P	[05] → náatúlábílílá
ta-'tu-alée-lim-a	(TD)+D	neg. [14] → tatwáaléélímá
ta-`bá-a-lek-e	(TD)+P	neg. [51] → tabaaleké

2.4. *Long vowel radicals and radical-equivalents with high first mora and low second.* These may be of four types:

(1) low-toned long vowel radicals *accepting doubling* (e.g. -P͡ÓOS-: radical -POOS- accepting doubling);

(2) radical equivalents with low-toned first element accepting doubling (e.g. -m͡úEB-: radical -EB- in fusion with *-mu-* accepting doubling);

(3) high-toned long vowel radicals (e.g. -LÁal-);

(4) radical-equivalents with high-toned first element (e.g. -cíUB-: radical -UB- in fusion with -cí-).

As far as tone is concerned, a low-tone vowel-consonant radical and the preceding element are treated as *one* element, here called a radical-equivalent.

Xa. When a raised final or high final occurs immediately following a high-toned

long vowel radical or radical-equivalent, it is not represented, the long vowel being represented as a long high.

Xb. When post-radical high occurs after a high-toned long vowel radical-equivalent, it is not represented, the long vowel being represented as a long high.

Examples: (radicals and extensions underlined.)

	tu-á-<u>poos</u>-a		[41] → twaapóósa . . . (Rule I)
	tu-la-<u>túal</u>-il-a		[02] → tulatwáálíla-kó néémfumu (Rule I)
X*a*.	tu-<u>poos</u>-e	+F	[S 01] → túpóóse
	tu-<u>imb</u>-e / tu-<u>ímb</u>-e	+F	[S 01] → twímbe
	tu-cí-<u>ub</u>-e	+F	[S 01] → túcúúbe
	tu-<u>láal</u>-e	+F	[S 01] → túláále
	tu-<u>léet</u>-a	+R	[OR 01] → . . . (ílyo) túlééta
X*b*.	náa-ʹcí-mu-<u>isal</u>-il-a	(TD)+P	[06] → náacímwíísalila

Obviously, when the tone-carrying radical mora is the first, post-radical high starts at the second, and we have, e.g.

ta-ʻtu-a-<u>léet</u>-e   (TD)+P   neg. [51] → tatwaaléété

NOTE: All other varieties of long vowel radicals and equivalents need no special comment, but simply obey previously stated rules.

3. CONCLUSION

3.1. Some of the features here implicit or actually noted (some of them for the first time) may be of use in the study of other Bantu languages:

Monophone prefixes were here tonally distinguished from diphones;

'Imposed patterns' and 'imposed tones' were here resolved into several different basic types, including:

(*a*) diatony;
(*b*) post-radical high;
(*c*) high final;
(*d*) raised final;
(*e*) tonal contrast;
and (*f*) tonal determinants.

Of these, (*a*) is associated in Bemba with the pairing of tenses having different emphases. This pairing has been observed (usually unclearly) in several languages previously, and sometimes tonal or 'intonation' differences have been remarked on, but the establishment of diatony as a general tonal feature is new (implicit herein are semantic and grammatical associations and the clear establishment of a complete range of 'emphatic' and 'non-emphatic' pairs of tenses: more properly, these are tenses grammatically weakly-linked and strongly-linked with what follows:* for a fuller discussion, see 'The Tabulation of Tenses in a Bantu Language (Bemba, N.R.)');

(*b*) may also be associated with similar pairing;**
(*c*) is found especially in subjunctives, where it is associated with high prefix;

* This is already proving of great value in the investigation of the tense systems and tonal structures of other languages.

** As may penultimate high (cf. Lucazi, N.R. and Angola).

(*d*) is found in certain relative tenses: in Bemba those where the head word of the relative clause is itself the ' object ' of the verb, and in which it is associated with high prefix;

(*e*) occurs in Bemba at a phonological level, and in Bemba is a resolving feature in the analysis of tonal behaviour of monophone prefixes;

(*f*) are (in Bemba) pre-initial elements which always impose a certain tone on, e.g. the following element. Note that (*a*), (*b*), (*c*), and (*d*) are to be clearly distinguished one from another in tonal study: each has its own behaviour. In distinguishing these modes of behaviour it is always of help to consider cases (i) with polysyllabic (extended) radicals—the longer the better! (ii) with monosyllabic long vowel radicals.

In languages where any or all of (*a*) to (*f*) do not occur in precisely these forms or contexts, they may nevertheless prove suggestive. It may also be of value in tonal analysis to divide tense signs into zeros, monophones, diphones and above. Finally we should note that syllable, element and mora are often to be distinguished.

3.2. There are several features the existence of which is suspected, but which need further confirmation. This it is hoped to obtain. They are evidently rare, and the rules here given are rigorous for the types of cases quoted.

Notes

[1] The tonal behaviour of other dialects is different: when making an analysis of this type it is of the greatest importance to confine one's examples to one dialect only: otherwise the picture is confused and confusing. Thus Mporokoso, Kapatu, and Kawambwa types of Bemba are not here considered: their rules would be similar but not necessarily identical.

[2] The initial vowel of nominal prefixes may be regarded as a high-toned monophone: thus:

> ú-mu-lim-o   → umúlimo . . .   work
> í-ci-bómb-el-o → ícibómbélo . . . tool

In close link with a preceding negative verb or a preceding nominal, this initial vowel is not realized, and its tonal influence naturally disappears also:

> there is no shelter (or) there is no shelter which . . . (takúli) [í-] ci-sak-ut-a → takúli cisakuta
> (see examples under note 3).

[3] Nominals with low-toned radicals and suffixes also show diatony in stressed positions: thus ú-mu-lim-o+D → umúlímó. It serves exactly the same purpose as with verb tenses: i.e. it emphasizes the word carrying it: or, more properly, *minimizes the grammatical link with the following word*, if any, and is therefore the form which *must* be used at the end of a sentence: its absence implies a strong link with the word following, and is therefore the form used, for example, at the head of a relative clause, and before linked possessives.

the shelter is old	í-ci-sak-ut-a (+D)	ci-í-kot-é	→ icísákútá cíikoté
building a shelter	ú-ku-kuul-a (−D)	í-ci-sak-ut-a (+D)	→ ukúkuula icísákútá
an old shelter	í-ci-sak-ut-a (−D)	ci-kot-é	→ icísakuta-cikoté
the shelter they've built	í-ci-sak-ut-a (−D)	(bákuulílé)	→ icísakuta bákuulílé
there isn't a *shelter* which . . .	(takúli) í-ci-sak-ut-a (−D)		→ takúli icísakuta . . .*
there isn't a *shelter*	(takúli) í-ci-sak-ut-a (+D)		→ takúli icísákútá*

> * Contrast example given under note 2.

[4] S 03/04 may be broken down thus:

> tú-<u>la</u>-R-ⓔ F → tú-<u>laé</u>-R-a = tú-<u>leé</u>-R-a.

The underlined element carries the 'central' tone. We know that the final -e gets into the pre-radical in progressive tenses in general from an inspection of the verb table: the rule is invariable. If the final -e, then presumably its high final too, which naturally demands a 'central' low between itself and the high prefix.

[5] The *ta-* -*ilé* tense also has the special feature that there is always (and basically) the ' extra ' syllable -*i*- in the -*ile* so that there is always a place for the 'central' low: this may affect the tonal behaviour in the presence of an element between prefix and radical, but we cannot confirm because there is no other tense to compare it with.

E e

Annexure

2.1 Rule I examples :   they will arrive at the river
                         they will pass along the road
         II   we have (just) arrived at the river
                         let us not read
                         we shall draw water from now on
                         we have (just) passed along the road
                         they arrived at the village
                         they passed along the road

2.2   III   he will arrive tomorrow
                         he will send a Boma messenger
                         you (s.) have (just) arrived at the road
                         it (e.g. ' relish ') was plentiful once
         Note   had he stopped . . .
                         had it (Class 3) stopped . . .
                         had you (s.) stopped . . .

2.3.1   we explained   ⎫
         IVa   we forgot all about them ⎬ RECENTLY
         IVb   we got them back   ⎭
         V   he (has just) sucked
                         he sucked them
                         he explained
                         he explained to them

2.3.2   we have even learned English
                         we have even forgotten all about (our) home
                         let us not read (this) letter

2.3.3   we have not forgotten
                         let us pass
         VIa   you should explain to them
                         let us not explain
         VIb   let us not explain to them
                         let us not explain to him

2.3.4   . . . when we arrive . . . (full future)
                         . . . when he arrives . . . (full future)
         VII   . . . when we arrived . . . (today)
                         . . . when we threw . . . (today)

2.3.5   VIIIa   let us pass (now)
                         let us explain (now)
                         let us throw away (now)
         VIIIb   let them heap soil round (the plants)
                         let them not heap soil round

2.3.6   explain! (s.)
                         run!   (s.)
                         take!   (s.)

2.3.7   IX   the people who will be passing (from now on)

                  they { are supposed to / ought to / should } follow

                  let them not read/they shouldn't read

2.3.8   had we stopped . . . (he would not be angry)

                  had we completely forgotten (it would not be good)

                  we have stopped

                  we have completely forgotten

                  we used not to dig

                  they won't stop

2.4   we have (just) thrown

                  we take (some) to the chief as well

      Xa   let us throw/we should throw

                  let us dig/sing

                  let us peel it

                  let us sleep

                  . . . when we bring . . .

      Xb   it shut him in

                  we won't bring

Résumé

LA REPRÉSENTATION DES TONS, EN PARTICULIER DES TONS DU VERBE EN BEMBA (RHODÉSIE DU NORD)

Il est d'usage de désigner une forme phonétique/tonétique comme la *réalisation* d'une forme phonologique/tonologique. Dans ce qui suit, une forme phonologique est appelée la *représentation* d'une forme structurelle, et cet article a trait au rapport qui existe entre les niveaux structurel et phonologique.

    Les règles fondamentales sont les suivantes:

  I. Le ton haut (H) se double lorsqu'elle suit le ton bas (B), mais seulement si l'élément suivant est également bas.

  II. BH suit la règle No. I, la voyelle longue qui en résulte étant représentée en contraste tonal avec l'élément suivant (HB suit simplement la règle No. I).

  III. Un préfixe monophonème qui ne subit pas une contraction suit la règle I, et il est lui-même représenté en contraste avec l'élément suivant (un monophonème qui subit une contraction suit simplement la règle No. II).

Cependant il existe, en plus de ces règles fondamentales, divers groupements ' imposés ' et tons ' imposés ', qui donnent naissance à des règles supplémentaires.

  (i) La diatonie — le doublement du dernier H dans certains temps (règles IVa, IVb et V).

  (ii) Un ton haut après un radical — toutes les syllabes qui suivent un R sont hautes.

  (iii) Un ton haut terminal — la dernière syllabe est à ton haut avec une syllabe au moins à ton bas entre celle-ci et le préfixe (règles VIa, VIb). Ce ton est remplacé par le ton haut après un radical dans certaines circonstances (règles VIa, VIb).

  (iv) Un ton terminal élevé — dans des temps relatifs ayant un préfixe à ton haut, la dernière syllabe est également à ton haut; elle n'est pas représentée dans certaines circonstances (règle VII).

(v) Groupement subjonctif — un H B H fondamental, avec un ton terminal haut, devient un ton haut après un radical suivant la règle VIa, et un B H B fondamental, avec un ton terminal bas, devient un ton bas après le radical. Le ton bas central peut acquérir à nouveau un ton haut par doublement dans certaines circonstances (règle VIIIa) et le signe indiquant le temps — ka — peut résister au doublement dans certaines circonstances (règle VIIIb).

(vi) Contraste tonal—on peut dire que les impératifs simples ont la syllabe qui suit immédiatement après R en contraste tonale avec R. Il y a, cependant, des règles spéciales pour les impératifs.

(vii) Préfixe à ton bas — dans des temps relatifs et dans des temps comprenant certains signes de temps, *tous* les préfixes sont à ton bas (le ton fondamental du préfixe est outrepassé) (règle IX).

(viii) Déterminants — des éléments pré-initiaux qui *déterminent* le ton de la syllabe qui les suit.

Des radicaux à voyelles longues et des équivalents de radicaux ayant un HB structurel, influencent la représentation d'un ton haut terminal, d'un ton terminal élevé et d'un ton haut après un radical dans certaines conditions (règles Xa, Xb).

Certaines indications susceptibles d'être intéressantes pour l'étude d'autres langues bantoues sont comme suit:

Il faut faire une distinction entre des préfixes monophonèmes et diphonèmes lors des analyses tonales.

Il importe de décomposer les groupements imposés et les tons imposés en divers types, y compris, notamment, la diatonie, le ton haut après les radicaux, le ton haut terminal et le ton terminal élevé. (La diatonie est associée à une liaison faible ou à l'absence de liaison avec le mot, ou les mots, suivants et joue un rôle d'une importance primordiale dans l'analyse du système des temps.)

Il faut distinguer soigneusement entre le ton haut après un radical, le ton haut terminal et le ton terminal élevé; une confusion est susceptible de se produire entre ces tons, surtout lorsqu'il n'y a qu'une seule syllabe qui suit le radical.