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AN ACCOUNT OF MOFU-GUDUR VERB
INFIXES AND SUFFIXES

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1.0 Introduction

In studying the verb complex in Mofu-Gudur,¹ it became apparent that the tonal perturbations exhibited by verbal infixes and suffixes needed to be clarified. What follows is an attempt to find patterns in such perturbations and to explain them in terms of the overall structure of verbs in Mofu-Gudur.²

2.0 Personal object suffixes

We take the series of personal direct and indirect object suffixes to be the following, as proposed by Barreteau (1988):

Direct Object Suffixes		Indirect Object Suffixes	
˘ ya	˘ ndar	yá	ndár
	˘ ndákwar		ndákwar
˘ ka	˘ kwar	ká	kwár
á	ta	ar	tár

2.1 Verb root tones and verb root syllables.

Barreteau (1988) has pointed out that the Mofu-Gudur verb root consists of a consonantal skeleton filled in, or not filled in, or partially filled in, by a vowel. This vowel we may call V. Thus, for example, we have verb roots of:

root type	example	infinitive	gloss
C	˘ z ˘	mezey	'smell (intrans.)'
	˘ z ˘	mézey	'bite'
	˘ b ˘	mebéy	'go out'
CC	˘ kd ˘	mekədəy	'strike'
	˘ sp ˘	mesəpéy	'look for'
	˘ vl ˘	mévəley	'give'
CVC	˘ d'ed ˘	med'edey	'pull along'
CəC-C	˘ p'éd-k ˘	mep'édkey	'split'
	˘ həd-k ˘	mehədkey	'buy'

We note that all roots have preposed and postposed tones; in addition, some roots are characterized by having underlying syllables, or what we may call 'root syllables' (RSs), which bear a root high tone. These roots possess a V, realized as /e/. Roots of the type CəC-C in fact are considered to have a root syllable, for the ə represents a reduction of the vowel V--an obligatory reduction before a sequence of consonants in Mofu-Gudur. Such a CəC-C root may bear a root high tone, as in the infinitive form *mép'édkèy* (the verb root is *p'édk ˘*); or it may bear a low tone, as in the infinitive form *mehədkey* (the verb root is *həd k ˘*).

Roots of the type *CC* may in fact be considered to have no underlying syllable; the consonantal sequence is realized with ə, as the infinitival forms bear out. Thus the sequence *CəC* must not be taken to indicate the presence of a root syllable.

The underlying importance of the verb root tones is that, following Barreteau (1988), we may take the high tones among them to be the realizations of tonal accents. The various patterns of tonal accents in the shorter verb roots become, then, the bases for the patterns of tonal accents in the longer verb roots.

Thus, for example, the verb root type which is characterized by the complete absence of tonal accent in two places (..), is represented by verb infinitives such as *mezey* 'smell' (the verb root is *z*, featuring a low tone preposed and another one postposed in relation to the segmental verb root). This tonal accentual type becomes the basis of the derived type (...), represented by the infinitive *mededey* 'pull along' (the verb root is *déd*); and it becomes also the basis of the type (...), as represented by the infinitive *mewuzleley* 'write' (the verb root is *wuzlel*). These verbs are considered to possess no tonal accent; this condition is translated into the phonological reality that there are only low tones present in the above infinitival forms.

The following chart, again based on Barreteau (1988), displays all the possible extensions of the tonal accentual type (..), as well as those of the type (.).

ACCENTUAL TYPE	EXTENSION 1	EXTENSION 2	EXTENSION 3
. . Root: <i>z</i> Inf.: <i>mezey</i> 'smell'	. . . Root: <i>déd</i> Inf.: <i>mededey</i> 'pull along' Root: <i>wùzlèl</i> Inf.: <i>mewuzleley</i> 'write' ----- 'write'
. Root: <i>b</i> Inf.: <i>mebéy</i> 'go out'	. . Root: <i>səp</i> Inf.: <i>mesəpéy</i> 'look for'	. . . Root: <i>bèbəl</i> Inf.: <i>mèbèbəláy</i> 'become fat' Root: <i>zlèzlembâr</i> Inf.: <i>mezlezelebâráy</i> 'inflate'

Two other tonally accentual verb types--(. .) and (. .) are also bases for extensions, in a manner similar to that described above.

2.2 Epenthetic -a-

All verbal suffixes with an initial consonant which is attached to a verb root ending in a root syllable are preceded by an epenthetic -a-. That is, in the following sequence, the presence of -a- is obligatory, as in (1) (the verb roots are underlined, and the epenthetic -a immediately follows the root).

- (1)
- | | |
|---------------------|-------------------------------|
| <i>fá pēdkatá</i> | 'he is splitting them' |
| <i>a dādáyá slá</i> | 'he is pulling my bull along' |

Contrast the verbs in (1) with those in (2), where there is no epenthetic -a-, and where the verbs in question have no underlying root syllable (the underlining here marks the verb root; the ə fills it out giving the result of a surface syllable):

(2)

<i>fá</i> <u><i>kédndár</i></u>	'he is hitting us'
<i>a</i> <u><i>rəvār</i></u> <i>wudéz</i>	'he transplants a tree for him'
<i>a</i> <i>tá</i> <u><i>vəltár</i></u> <i>dáf</i> <i>lá</i>	'he gave them food'

3.0 Rules for the combination of verb roots and object suffixes

3.1 Criteria for the phonetic realization of the underlying tonal shapes of object suffixes

The object suffixes given in section 1.0 are realized with their underlying tonal shapes as long as the following criteria are met: (a) the root tone of the verb remains inviolate, and (b) a suffixal high tone remains at least one syllable removed from a root high tone. The systemic motivation for these two conditions appears to be the safeguarding of the tonal shape--and hence the tonal accentual pattern--of the verb root.

Following are examples of the application of various object suffixes in which the above conditions are easily met (the verb roots are underlined):

(3)

<i>á</i> <u><i>zəməndár</i></u>	'he is eating us (withholding our pay)'	Root: <i>zm</i>
<i>á</i> <u><i>vələndákwar</i></u> <i>dáf</i>	'he gives us (incl.) food'	Root: <i>vl</i>
<i>fá</i> <u><i>dədəyá</i></u> <i>slá</i>	'he is pulling my bull along'	Root: <i>dəd</i>
<i>a</i> <u><i>wuzlalatár</i></u> <i>léeter</i>	'he writes them a letter'	Root: <i>wuzlal</i>
<i>a</i> <u><i>fətədəyá</i></u> <i>dáw</i>	'he cuts off the heads of the millet for me'	Root: <i>fətəd</i>

Note that in the last two examples the epenthetic *-a-* is added (as always, just after the verb root). The epenthetic *-a* is in itself a method for meeting the criteria above, in that the epenthesis assures that at least one syllable will intervene between a suffixal high tone and the high tone of the verb root.

3.2 The following procedures are taken if the criteria given above are not met.

(a) The high tone of the suffix is pulled forward to the nearest high tone of the verb root (the verb roots are underlined):

(4)

<i>a</i> <u><i>pédka</i></u>	'he splits it' (the high tone of the <i>-á</i> is pulled forward.)
<i>a</i> <u><i>gádáda</i></u>	'he courts her'

A special note should be taken of the 3rd singular direct object suffix (*-á*). The fact that it loses its high tone in the following example,

- (5) *á zəma* 'he eats it'

cannot be attributed to the criteria already given, for the syllable before it is characterized by a low tone, that is, by the absence of an underlying tonal accent. However, if we note that this suffix is the only direct object suffix to consist of *V* (as opposed to *CV*), we may suppose that the systemic objection to its retaining its high tone in this example concerns the fact that a form such as **á zəmə* would invariably be realized as [á zmá] or [á zémá], according to a low-level tonological process in the language, and the root tonal pattern of the verb in this way would be perverted.

Thus, we adduce that suffixes of the form *V̇* (which in fact signifies only the 3rd singular direct object suffix) lose their high tone contiguous to a high tone belonging to the verb root.

(b) The preposed high tone of *ar*, the 3rd person singular indirect object suffix, is lost when the criteria given above in 2.1 cannot otherwise be kept. For example (the verb roots are underlined):

- | | | |
|-----|-------------------------|---|
| (6) | | Verb Root |
| | <i>fá vəlar dáf</i> | 'he is giving him food' <i>vl</i> |
| | <i>a hət̄ar</i> | 'he finds/sees him' <i>ht</i> |
| | <i>fá d̄ad̄ar slá</i> | 'he pulls his bull' <i>d̄ed</i> |
| | <i>fá p̄əlk̄ar zána</i> | 'he searches everywhere
for clothes for him' <i>p̄əlk̄</i> |

3.2.1 The special case of verbs of the root form *C*

Mention should be made of verbs of the root form *C*. Infinitival forms of representative verbs of this type include: *mézey* 'bite', *mezey* 'smell', *mebéy* 'go out', *mewéy* 'command', and *mengéy* 'stretch'. With these verbs, the epenthetic vowel *-a* is always provided as a "landing place" for the verb's high root tone. At the same time, this vowel receives any preposed suffixal high tone. For example, in (7a) and (7c), the high tone of the indirect object suffixes is pulled to the high tone of the verb root; the result is a phonetic low tone on the suffix. In (7b), the high tone of the verb root merges with that of the direct object suffix.

- (7)
- (a) *Fá tá- ka dáf.*
 PROG.3S prepare-2SIO food
 'She is preparing you food.' (*t* 'prepare' + *ká* 2SIO)
- (b) *A tá*
 3S prepare.3SDO
 'She prepares it.' (*t* 'prepare' + *á* 3SDO)
- (c) *A gá- ndar*
 3S speak.in.riddles 1EIO
 'He is talking to us in riddles.' (*ng* 'speak
 in riddles'
 + *ndár* 1EIO)

3.2.2 The special case of verbs of the root form $\text{` } C(\text{ə}C)C \text{`}$

Special attention should also be paid to the verbs which have the form $\text{` } C(\text{ə}C)C \text{`}$, for their behaviour illustrates some of the internal pressure to which the system subjects itself. These are verbs such as:

$\text{` } s\text{ə}p \text{`}$ 'look for' $\text{` } t\text{ə}b \text{`}$ 'receive'
 $\text{` } p\text{ə}rt \text{`}$ 'ransack' $\text{` } r\text{ə}v \text{`}$ 'transplant'

Let us first consider the hypothesized derivations of three forms of the verb $\text{` } s\text{ə}p \text{`}$:

(8)	(a)	(b)	(c)
	$a \text{ s}\text{ə}p \text{`} + \text{` } k\text{w}ar$	$a \text{ s}\text{ə}p \text{`} + \text{` } k\text{a}$	$a \text{ s}\text{ə}p \text{`} + \text{` } y\text{a}$
	3 seek 2PDO	3 seek 2SDO	3 seek 1SDO
	$a \text{ s}\text{ə}p \text{`} + m\text{a} + k\text{w}ar$		$a \text{ s}\text{ə}p \text{` } \acute{e} \quad y\text{a}$
	PL		
	$a \text{ s}\text{ə}p \acute{m} \text{ ma} \quad k\text{w}ar$		
	$a \text{ s}\text{ə}p\text{?}\acute{m} \text{ ma} \quad k\text{w}ar$		
	[$a \text{ s}\text{ə}p\text{?}\acute{m} \text{ ma} \quad k\text{w}\acute{a}r$]		
	OR		
	[$a \text{ s}\text{ə}p\acute{a}m\text{a}k\text{w}\acute{a}r$]	[$a \text{ s}\text{ə}p\acute{e}k\text{a}$]	[$a \text{ s}\text{ə}p \acute{e} \quad y\text{a}$]
	(See 2.3.1 and 2.3.2)		
	'They seek you (plural).'	'He seeks you	'He seeks me.'
		(singular).'	

In all three cases, the root high tone is not allowed to change position or to drop out. In cases (b) and (c) the high tone settles on the epenthetic -ə- inserted between p and k and between p and y . We note that this epenthetic -ə- is normally not necessary to separate such consonants, but that probably in these cases its motivation is to furnish a vocalized segment--if ever so brief--which may bear the root high tone.

In case (a), the same language helper gave different realizations on different occasions, never appearing to be really satisfied. The variant [$a \text{ s}\text{ə}p\acute{a}m\text{a}k\text{w}\acute{a}r$] is not really proper according to our analysis, because the epenthetic -a- does not follow a root syllable; it follows instead merely the underlying sequence of sp . On a later occasion, the helper gave the variant [$a \text{ s}\text{ə}p\text{?}\acute{m}\text{a}k\text{w}\acute{a}r$], in which a geminate of m is made to bear the root high tone. The glottal ? is inserted to separate tone-bearing "syllables." We interpret case (a) as an instance in which, according to system of Mofu-Gudur verb morphology, there is possible no "proper" tonal realization, i.e., no tonal realization that completely fits the grand pattern of tonal behaviour in the verb system.

The point of these examples is to show that the Mofu-Gudur verb forms will preserve the root tones whenever possible, even at the cost of bending derivational rules and of producing syllables types which are strange to the system.

If we consider the following forms of the verb *təb* 'receive' (the verb root is in each case underlined)--

- (9) a tábka d^ér^éwel 'he receives a book for me'
 a tábíya 'he receives me'
 a táb^omakwár 'he receives you (plural)'

--and equally of the verb *rəv* 'transplant'--

- (10) a rəvka wudéz 'he transplants a tree for me'
 a rəv^otar wudéz 'he transplants a tree for him'

--we note that the shape of the verb root tone is definitely distorted. It is as if voiced consonants such as *b* and *v* do not, in our language helper's dialect, allow such measures as an epenthetic *-ə-* after them. In these cases, there is no alternative to the tonal shape of the verb root becoming distorted; the high tone which is supposed to be post-posed to the verb root syllable is in fact obliged to be realized on that syllable. It would appear that the verb system accepts that the tonal shape of the verb root be distorted, rather than that the verbal suffix be distorted. This, however, seems curious, for verbal suffixes often becoming tonally perturbed by preposed high tones of following words.

3.3 Addition of personal object suffixes to plural verb forms

Personal object suffixes are added to plural verb forms within the following schema:

- (11) + (Verb root) +/- (-a-) + (ma) + (Suffix)

where the epenthetic *-a-* is added when the verb root ends in a root syllable (e.g., in ...VC or in ...əCC); and where *ma* represents the pluralizer *-am* reversed in order to receive a following suffix.

The criteria enunciated in section 2.1 must be met. A conflict may arise in connection with *ar*, the 3rd person singular indirect object pronoun, in which case the pronoun's preposed high tone is lost, as in (12):

- (12) a ' vəl ' + ar (formation of singular form)
 3 give 3SIO
- a ' vəl + ma + ar (addition of pluralizer)
 PL

[á vəlmar] 'They give to him'

A peculiarity of the system is that a verb of plural number which bears a pronominal object suffix appears to be derived from the corresponding singular verb form, e.g., *á vəlmar* 'they give to him', is derived from *á vəlár* 'he gives to him'. That is, the pluralizer *ma* is added to the full singular verb form (including object suffix) in order to create the plural verb form. It is for this reason that the derivations of plural forms in (12-15) show the plural verb with the object suffix being derived from the singular version of the verb.

The effect of this order of derivation is to give forms such as:

- (13) a wuzlál-ám-atá
 3 write -PL-3P
 they write them (e.g., the letters)

- (14) a dásl-ma-kwár
 3 cut -PL-2P
 they cut you (plural)

and

- (15) a dásl-ma-yá
 3 cut -PL-1S
 they cut me

where one would otherwise expect *a wuzlalamáta, *a dəslmákwar, and *a dəslmáya.

3.3.1 Tonal behavior of the direct object pronominal suffixes in plural verbs.

The final syllable of the direct object pronominal suffixes is consistently marked with the presence of a high tone, when the suffix is attached to a plural verb form. Below is given a plural paradigm of *mededey* 'pull along (with a cord)' (verb roots are underlined):

- | | |
|-------------------------|----------------------------|
| (16) a <u>dadám</u> ayá | a <u>dadám</u> andár |
| 'they pull me' | 'they pull us (exclusive)' |
| | a <u>dadám</u> andákwar |
| | 'they pull us (inclusive)' |
| a <u>dadám</u> aká | a <u>dadám</u> akwár |
| 'they pull you' | 'they pull you (plural)' |
| a <u>dadám</u> ará | a <u>dadám</u> atá |
| 'they pull him' | 'they pull them' |

We may say that the object suffixes have variants of high tone following the pluralizer *-ma*. In this they may be said to follow the lead of the 3rd person singular suffix, the canonical form of which is *-á*. We hypothesize that the

systemic motivation for these variants is to create the tendency to give the verb word a uniform tonal shape.

It should be noted that the 3rd person singular direct object form of *-á* has a variant of *-rá* following the combination of pluralizer *-ma* and most indirect object pronominal suffixes. It is assumed to have the variant of *-wa* following the indirect object pronominal suffixes of 1st and 2nd person singular. Following is a paradigm of combined indirect and direct object forms attached to a verb with the 3rd person singular subject. For easy comparison, the paradigm includes the simple indirect object suffix as well (verb roots are underlined).

(17) COMBINATIONS OF SINGULAR AND PLURAL INDIRECT
OBJECT AND DIRECT OBJECT SUFFIXES ATTACHED TO
A VERB OF SINGULAR NUMBER

Singular Indirect Object		Plural Indirect Object	
<i>a hɛdkayá</i>	'he buys for me'	<i>a hɛdkandár</i>	'he buys for us (E)'
<i>a hɛdkayáwa</i>	'he buys it for me'	<i>a hɛdkandará</i>	'he buys it for us'
<i>a hɛdkátáyáwa</i>	'he buys them for me'		
(<i>a hɛdkátíwa</i>)			
(<i>a sɛmkatáyáwa</i>)	(Gudal dialect)		
(<i>a sɛmkatíwa</i>)	(Gudal dialect)		
		<i>a hɛdkandákwar</i>	'he buys for us (I)'
		<i>a hɛdkandákwará</i>	'he buys it for us'
<i>a hɛdkaká</i>	'he buys for you'	<i>a hɛdkakwár cek</i>	'he buys for you (pl)'
<i>a hɛdkakáwa</i>	'he buys it for you'	<i>a hɛdkakwará</i>	'he buys it for you (P)'
<i>a hɛdkátákáwa</i>	'he buys them for you'		
(<i>a sɛmkatákáwa</i>)	(Gudal dialect)		
<i>a hɛdkar cek</i>	'he buys for him'	<i>a hɛdkatár cek</i>	'he buys for them'
<i>a hɛdkará</i>	'he buys it for him'	<i>a hɛdkatará</i>	'he buys it for them'

The plural anaphore of the direct object (e.g., "He buys *them* for me") is available only for the indirect object in the first and second singular persons. For the other persons, one is obliged to use the singular anaphore of the direct object, e.g., one is obliged to say, "I buy *it* for him," even when *it* has a plural referent.

(18) COMBINATIONS OF SINGULAR AND PLURAL INDIRECT
OBJECT AND DIRECT OBJECT SUFFIXES ATTACHED TO
A VERB OF PLURAL NUMBER

Singular Indirect Object		Plural Indirect Object	
<i>a hɛdkamayá</i>	'they buy for me'	<i>a hɛdkamandár</i>	'they buy for us (E)'
<i>a hɛdkamayáwa</i>	'they buy it for me'	<i>a hɛdkamandará</i>	'they buy it for us (E)'
<i>a hɛdkámátáyáwa</i>	'they buy them for me'		
(<i>a hɛdkámátíwa</i>)	(Gudal dialect)		
(<i>a sɛmkámátáyáwa</i>)	(Gudal dialect)	<i>a hɛdkamandákwar</i>	'they buy for us (I)'
(<i>a sɛmkámátíwa</i>)		<i>a hɛdkamandákwará</i>	'they buy it for us (I)'
<i>a hɛdkamaká</i>	'they buy for you'	<i>a hɛdkamakwár</i>	'they buy for you (P)'
<i>a hɛdkamakáwa</i>	'they buy it for you"	<i>a hɛdkamakwará</i>	'they buy it for you (P)'
<i>a hɛdkámátákáwa</i>	'they buy them for you"		
(<i>a sɛmkámátákáwa</i>)	(Gudal dialect)		
<i>a hɛdkamar</i>	'they buy for him'	<i>a hɛdkamatár</i>	'they buy for them'
<i>a hɛdkamará</i>	'they buy it for him"	<i>a hɛdkamatará</i>	'they buy it for them'

The paradigm given above shows that the third singular person direct object (the anaphore of the direct object) may be added to any indirect object suffix. It has the variants of *-wa* (to be added after a suffix ending in a vowel, e.g., *a hɛdkamakáwa*) and *-rá* (to be added after suffix ending in *-r*, e.g., *a hɛdkamatará*).

We note that when it is attached to most plural indirect object suffixes, their high tone is effaced, or, perhaps better said, transferred to the end of the word, so that the verb ends in a low-high tonal sequence, a pattern already set in plural verb forms.

There is a plural form of the anaphore of the direct object, which occurs only in the cases of the first and second singular persons of the indirect object. Thus we have:

(19) *a hɛdkátáyáwa* (short form: *a hɛdkátíwa*)
'he buys them for me'
and

(20) *a hɛdkátákáwa* 'he buys them for you'
as well as the corresponding plural verb forms:

(21) *a hədkámátáyáwa* (*a hədkamatíwa*)
'they buy them for me'

and

(22) *a hədkámátákáwa*
'they buy them for you'

4.0 Conclusion

This paper has outlined the tonal behaviour exhibited in Mofu-Gudur verbs when personal object suffixes are attached to them. The tonal behaviour is constrained by a system which seeks to preserve the root tonal shape of the verb in question and thus, from an underlying viewpoint, that verb root's tonal accent shape.

NOTES

- 1 Mofu-Gudur is a Chadic language spoken in and around the Canton of Mokong in the Département of the Mayo Tsanaga, the Province of the Far North. Work in Mofu-Gudur under the auspices of S.I.L. has been in progress since 1978. Sincere thanks go to the Ministry of Scientific and Technical Research of the Republic of Cameroon, for the permission which has made possible this research.
- 2 The underlying segments in Mofu-Gudur are reflected in the following list used in this paper: *b, ɓ, c, d, ɗ, f, g, gw, h, hw, j, k, kw, l, m, mb, n, nd, ŋg, ŋgw, nj, p, r, s, ʔ, t, v, w, y, z, ɣ, ʔ, a, aa, e, ee, and ə*. The underlying sequences *əy* and *əw* are represented by *i* and *u* respectively.

Mofu-Gudur has two discrete tones, high and low; in this paper, high tone is marked (´), while low tone is left unmarked.

ABBREVIATIONS

C	consonant
V	vowel
PROG	progressive
S	singular
P, PL	plural
DO	direct object
IO	indirect object
E	exclusive
I	inclusive

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