A DIACHRONIC-TONOLOGICAL ANALYSIS OF CERTAIN
RANK SHIFTED VERBAL STRUCTURES IN NORTHERN SOTHO[1]

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1. Introduction

While analysing the surface tone of certain verbal constructions in
Northern Sotho some time ago, I ran into the difficulty that certain
structures simply could not be analysed in terms of the tone rules which
seemed to work for other aspects of the language.

The structures I am referring to include the so-called "future tense"
as in:

(1) "Future"

    bá <u>tló</u> e tlíʃa
    they fut. it bring   'they will bring it'

and the so-called "long present tense" as in:

(2) "Present"

    bá <u>á</u>   e tlíʃa
    they pres. it bring 'they are bringing it'

Some light was thrown on this problem by Talmy Givón, when he made the
statement that: "...the modality <u>prefixes</u>...and the verb-deriving <u>suffixes</u>
...have historically arisen from main verbs dominating sentential comple-
ments" [Givón 1971:394].

2. Underlying Tone and Some Tone Rules

The starting-point for determining the tone rules[2] is the underlying
tonal representation. If a syllable is realized as /+H/ in an environment
of /-H/ syllables, then that /+H/ syllable is taken to be underlying /+H/.

In terms of these principles, the following has been found:

a. The verb stem -tliʃa 'bring' has an underlying /-H/-/-H/ tone sequence and therefore belongs to the low class of stems, e.g.:

(3)   go tliʃa 'to bring'

b. The infinitive prefix go- 'to' is underlying /-H/. (cf. (3))
c. The object agreement morpheme -é- 'it' is underlying /+H/, e.g.:

(4)   go é tlíʃa
        to it bring   'to bring it'

Furthermore, it is evident from this example that the underlying /-H/ first syllable of the verb stem is realized as [+H] on the surface. This can only be ascribed to the influence of the preceding /+H/ syllable, to which it is assimilated. Assimilation (TA) may be schematized as:

(5)   TA: /-H/ → [+H] / /+H/___/-H/

It should be pointed out that the word-final syllable at the end of an utterance is never assimilated to a preceding /+H/ syllable.

d. The future tense marker -tlo- 'shall, will' and the present tense marker -a- are both underlying /-H/:

(6)   ke tlo tliʃa   'I shall bring'

(7)   ke a   tliʃa
        I pres. bring 'I am bringing'

e. The subject agreement morpheme bá- 'they' is underlying /+H/ as in:

(8)   bá á   tliʃa
        they pres. bring 'they are bringing'

Again the first syllable following bá- is assimilated to [+H].

3. The Problem

The following underlying tonal representations of the two structures under discussion may be deduced from the foregoing:

(9)   *bá tlo é tliʃa and *bá a é tliʃa

The first syllable of the verb stem is assimilated to [+H]:

(10)   *bá tlo é tlíʃa and *bá a é tlíʃa   (TA, cf. (5))

On the surface -tlo- and -a- are realized as [+H], but in this environment, in terms of the rules stated, assimilation cannot operate to change them to [+H]. On the other hand, the object agreement morpheme -é- cannot be changed to [-H] on the surface in terms of any known rule. But it is realized with a low pitch.

A possible explanation for these seemingly unaccountable surface pitch realizations is based on the hypothesis that at some earlier stage in their

historical development, these constructions must have been more complex.

4. The Future Tense

As far as the future tense is concerned, it has been convincingly argued by Ponelis [1975], working along the lines of Givón [1971; 1973], that the auxiliary verb -tlo is the result of rank shifting (cf. Halliday [1961:251]). He presents a synchronic semantic, syntactic and phonological analysis. Ponelis argues that the future tense:

(11)   bá tló bapala   'they will play'

is a development of the construction:

(12)   bá   tlá || || go bapala
       'they   come   to play'

where || || is a clause boundary, and the construction consists of a main verb (Givón's modality verb) followed by an infinitival subordinate clause. Rank shifting takes place: the main verb becomes an auxiliary verb and the subordinate clause is turned into a part of the new verb phrase. Ponelis [1975:59] puts it clearly that the auxiliary verb is still a <u>word</u> (and not a morpheme). This will be explained fully later.

Concerning the semantics, Ponelis [1975:51] holds that the meaning of modality verbs tends to become subsidiary to that of the verb of the subordinate clause, semantic grammaticalization follows and categorial values like "future tense" are brought about.

Phonologically the future tense developed from free to categorial cliticization and the word status of the auxiliary verb is confirmed by tone rules, according to Ponelis [1975:47, 59].

With this exposition in mind, we can now have a closer look at the "future tense" from a tonological point of view. Note that we are employing the asterisk here, as in (9) and (10) above, to indicate an underlying or derivational step which cannot be a surface configuration. Starting from its underlying structure as main (modality) verb plus subordinate clause and assigning the underlying tones to each syllable, the result is:

(13)   *bá   tla || || go é tliʃa
        they come   to it bring   'they come to bring it'

In this first step, the main verb and subordinate clause become semantically and syntactically more integrated/tightly fused, as:

(14)   *bá tla || go é tliʃa

where || is a phrase boundary, and the two clauses have become a unit of main verb + fixed phrase.

In this environment it is possible for the stem -tla 'come' of

the main verb to be changed to [+H] under the influence of the preceding /+H/ subject agreement morpheme (bá- 'they'), and followed by a phrase boundary: → *bá tlá go é tliʃa. The a shows an instance of tonal repetition. This type of tone influence is called repetition, which differs from assimilation in the following respects:

a.   The word-final syllable is changed to [+H], and

b.   more than one syllable is subject to change, e.g.:

(15)   *bá nyaka ‖ go béréka → bá nyáká ‖ go béréka   (Repetition)
                          'they want to work'

where a..a are the bearers of repeated [+H] tones, in their surface form.

Repetition (T Rep) may be schematized as in (16), where Σ=syllable:

(16)   TRep: /-H/ → [+H] $\Big/$ /+H/$\underline{}$ ‖ COMP.[3]
                                    $[\ \Sigma_1\ ]$

The main verb rank-shifts to an auxiliary verb followed by the new main verb. In the process of rank shifting the g of the infinitive prefix go- 'to' is deleted, followed by the coalescence of the a of -tla and the o of go- (## represents a full word boundary):

(17)   *bá tló # # é tliʃa

Assimilation of the first syllable in the new main verb to the preceding /+H/ object agreement morpheme -é- takes place:

(18)   *bá tló # # é tlíʃa   (TA)

This leads to a succession of four /+H/ syllables--an environment for the operation of dissimilation in terms of the rule:

(19)   Tonal Dissimilation (TD): /+H/ → [-H] $\Big/$ /+H/$_1^n$ $\underset{[-stem]}{\underline{}}$ /+H/ /+Σ/$_0^n$

as follows:

(20)   bá tló # # e tlíʃa (TD)

We have now derived the "future tense" to its surface form, since (20) is the same as example (1).

That -tlo must still be considered a word and not a prefixal mor-pheme is inter alia tonologically evident from the fact that the nega-

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[3]To specify COMP more accurately, more research has to be undertaken on the relation between the word category following the complement and the tone of its initial syllable.

tive tone rule for Northern Sotho still treats -tlo as a monosyllabic
verb stem. This rule causes monosyllabic verb stems of the Low class
to be realized as [+H], e.g.:

(21)   /go lwa/   'to fight'

(22)   go se lwé
        to not fight 'not to fight'   (NEG)

(23)   go se tló lwa
        to not fut. fight   'not to be going to fight' (NEG)
                            [Ponelis 1975:59]

5. The Long Present Tense

     Due to the lack of any synchronic comparable structures for the
"long present tense", a diachronic approach has to be followed in analysing
its present structure. According to Meinhof [1948:111] and van Warmelo
[1927:90], the present tense -a- can be traced back to *-ɣa (*-ga
according to Guthrie's transcription) as modality or main verb. Meinhof
reports that it occurs in Konde as -ja 'be, become', followed by the
infinitive and in Pedi (a dialect of Northern Sotho) as a, as in:

(24)   ke a   dira
        I pres. do   'I am doing'

Meinhof [1932:31] puts it clearly: *ɣ (*g) is deleted in Sotho.

     When the present tense is compared with the future tense, one is
struck by the tonal similarity between the two structures, except in a
few instances, which are not recorded in the following list. We will
point these out at a later stage.

(25)   Future   Present
    a. re tlo hlaba   b. re a   hlaba
        'we will slaughter'   we pres. slaughter
                                       'we are slaughtering'

    c. ke tlo dí   tlátʃa   d. ke a   dí   tlátʃa
        I will them fill   I pres. them fill
        'I will fill them'   'I am filling them'

    e. ó   tló tliʃa   f. ó á   tliʃa
        'she will bring'   she pres. bring
                                       'she is bringing'

    g. ó tló ba bóláya   h. ó á   ba bóláya
        he will them kill   he pres. them kill
        'he will kill them'   'he is killing them'

As already indicated, the present tense marker -a- is underlying /-H/.
When comparing it with the future tense marker it may be deduced that the
original modality/main verb *-ɣa is also underlying /-H/.

Tonological and morphological data indicate that the subordinate clause in these constructions can only be either infinitive or consecutive (cf. Lombard [1976:166]). The infinitive prefix and the consecutive subject agreement morpheme have an underlying /-H/ tone, which has the least tonological influence on the verb itself. Therefore, the original construction can, for example, be taken to be either (26) or (27):

(26)　*bá　 γa　|| ||　go é tliʃa
　　　　they pres.　　to it bring

(27)　*bá　γa　|| ||　ba　é tliʃa
　　　　they pres.　　they it bring

The following step would then be that the main/modality verb and the subordinate clause become more integrated:

(28)　*bá γa　|| {$^{go}_{ba}$} é tliʃa

This is followed by the repetition of the /+H/ on the subject agreement morpheme on the modality/main verb　*-γa:

(29)　*bá γá̠　|| {$^{go}_{ba}$} é tliʃa　　　　　(TRep)

Rank shifting takes place and the　γ　of the main/modality verb　*-γá is deleted to result in　-á̠-　as the present modality morpheme. The infinitive prefix　go-　or the consecutive subject agreement morpheme is also deleted (+ = morpheme boundary):

(30)　*bá á + é tliʃa　　　　　　(Rank shift)

The first syllable of the new main verb　-tliʃa　is assimilated to /+H/ by the preceding /+H/ object agreement morpheme:

(31)　*bá á + é tli̠ʃa　　　　　　(TA)

　　Finally, the object agreement morpheme is dissimilated to /-H/:

(32)　bá á + e̠ tli̠ʃa　　　　　　(TD)

As we have shown the full derivation of the "future tense" by examples leading up to (20), which is identical to (1), we have now shown the full derivation of the "long present", since (32) = (2). That the modality/main verb is shifted in rank to be realized as a morpheme is inter alia evident from the fact that it is subject to dissimilation in a favourable tonological environment, e.g.:

(33)　*ó　á　+　é lwa

which is realized on the surface as:

(34)　→ ó　a̠　+ é lwa　　　　　　(TD)
　　　　he pres.　it fight　　'he is involved in a fight'

6. Differences Between Future and Present

When it occurs in a similar tonological environment, the future tense marker is never dissimilated, but is realized with a /+H -H/ tone sequence (phonetically a falling tone) concomitant with a half-long vowel:

(35) ó tló· # # é lwa
        he will   it fight   'he will be involved in a fight'

In other words, dissimilation is realized when the historical word boundary is deleted, but not when the full word boundary is still present. According to Hyman [1975:196] a full word boundary is "hard to penetrate" and therefore dissimilation is not realized in the case of the future tense.

The /+H -H/ tone sequence is the result of the coalescence and fusion of -tla as original main/modality verb being /+H/ due to repetition, and the underlying /-H/ of the infinitive go-. This fusion gives rise to inherent quantity (being realized as a half-long vowel), which reveals the polymorphemic origin of -tlo and that clarifies its /+H -H/ tone sequence.

On the other hand, the present tense marker -a- is never realized with a /+H -H/ tone sequence, not even in rhythmic quantity position (i.e. the penultimate syllable in a sentence). This is evident from the following comparison:

(36) a.   bá   tlô: # # já   b. bá   a: + já
          'they will eat'   they pres. eat   'they are eating'

This indicates that no trace of fusion or coalescence is left in -a- and it is realized as a single morpheme.

Another reason why Ponelis [1975:59] regards the future tense -tlo as a word is that the relative suffix -gó is affixed to a word, a verb, e.g.:

(37)   (bá)   bá   tlo - gó # # tliʃa   (-TA)
          (those) they will-who   bring   'they who will bring'

His view is tonologically supported by the absence of the assimilation of the first syllable of the new main verb. This can only be ascribed to the ability of the full word boundary to block the operation of this rule. Similarly, dissimilation is blocked by the full word boundary in an otherwise favourable tonological environment:

(38)   (bá)   bá   tlo -gó # # é tlíʃa (-TD)
          (those) they will-who   it bring 'they who will bring it'

in which the object agreement morpheme é- is not dissimilated.

This same phenomenon also occurs in an environment where the final /+H/ syllable in an utterance is lowered when preceded by a /+H/ penul-

timate syllable. This may be formalized as Final-syllable Lowering (FsL), below, where sentence boundary is marked by $\neq$:

(39) FsL: /+H/ → [-H] $\Big/$ /+H/___$\neq$

This rule operates, for instance, when an underlying /+H/ monosyllabic verb stem in sentence-final position is preceded by the /+H/ subject agreement morpheme as penultimate syllable:

(40) *ga bá fé $\neq$ → ga bá fe̅ $\neq$ (FsL)
            not they gi̅ve
            'they don't give'

Final-syllable lowering is blocked when a full word boundary precedes the final syllable in the future tense with the relative suffix, e.g.:

(41) (bá)   bá tΙo -gó # # fá̲ (-FsL)
    (those) they will-who   gi̲ve
    'they who will give'

7. Summary

Tonological evidence supports the following points:

a. Both constructions developed from a main/modality verb plus subordinate clause sequence.

b. The whole structure with -tΙo has rank-shifted from a separate clause with a main verb to a part of a clause with -tΙo as an auxiliary. This is evident from the fact that:
    1. -tΙo is not subject to dissimilation (35),
    2. it is realized with a /+H -H/ sequence concomitant with inherent quantity (35),
    3. assimilation of the first syllable after the full word boundary is absent (37),
    4. dissimilation in an otherwise favourable tonological environment is blocked by the presence of the full word boundary (38),
    5. final-syllable lowering does not operate when preceded by a full word boundary (41), and
    6. it is treated as a monosyllabic verb stem by the negative tone rule (23).

c. The present tense marker has shifted in rank from main/modality verb to become a single morpheme, a modality prefix. This is evident from the fact that:
    1. it is subject to dissimilation (34), and
    2. it is not realized with a /+H -H/ tone sequence--not even in rhythmic quantity position (36).

Without any doubt, these structures can be interpreted along the

same lines for other Bantu languages. In this regard, Dr. Hazel Carter (London University) informed me in a personal communication that this historical development is supported tonologically in the case of Shona (Zezuru) for both structures. Furthermore, she presented synchronic evidence to illustrate different stages of development[4] in Northern and Southern Tonga, e.g.:

<u>Northern</u>   <u>Southern</u>

u-na ku-langa   unoolaṇga

'he will look'

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[4]Ponelis [1975:47,48] also refers to Zulu in connection with this phenomenon.

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