

The typology of tonal systems in the Kinande complex verb

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Abstract

The status of auxiliary verbs in Bantu languages with a highly concatenative morphology has remained up till now a conundrum for linguistic theory. It is not always clear whether the auxiliary verb and the main verb form two maximal projections or a single maximal projection in a syntactic tree structure. Despite the fact that the structure of the simplex verb is relatively well understood, the unit called INFL still poses problems, especially when the auxiliary is considered part of this INFL. This paper seeks to provide a typology of tonal systems used in the auxiliary and in the INFL of the complex verb in Kinande, a language of eastern DRC (former Zaire) in order to provide a phonological argument that certain kinds of auxiliary should be considered as part of a higher syntactic unit that encodes the tense. It is shown that tonal processes that are assigned as suffixal tones in the simplex (i.e. non complex) verb typically surface in the auxiliary. At the same time, it is also shown that the auxiliary forms an intonational phrase that is phonologically distinct from the main verb.

1. Introduction

This paper seeks to provide a typology of tonal systems used in the auxiliary and in the INFL of the complex verb in Kinande, a language of eastern DRC (former Zaire) in order to provide a phonological argument that certain kinds of auxiliary should be considered as part of a higher syntactic unit that encodes the tense. It is shown that tonal processes that are assigned as suffixal tones

in the simplex (i.e. non complex) verb typically surface in the auxiliary. At the same time, it is also shown that the auxiliary forms and the main verb constitute a single intonational phrase. The paper is organized as follows: §1 deals with the tonal processes in the tense-aspectual markers (TAM) of the simplex verb, §2 deals with the tones in the complex verb, and §3 is a summary of the processes in both the simplex and complex verbs followed by some concluding remarks about the status of the auxiliary and the main verb.

However, before dealing with the tonal processes in the simplex verb, the structure of the verb, simplex and complex, is in order here. It is given in (1, 2).

Kinande is a typical Narrow Bantu language whose structure of the simplex verb typically consists of the following concatenative morphemes: SM-TAM-OM-Rt-Ext.- FV. (The abbreviations are as follows: SM = subject marker, TAM = tense-aspect marker, OM = object marker, Rt = root, Ext = extension, FV = final vowel).

This structure is illustrated in the following Kinande form.

- (1) tu-náàmundisyaàtààsyaya-ba-king-ul-ir-a
SM TAM OM Rt Ex t(s)FV
we them open
'we will one more time open for them'

The verb may appear in a more complex form, that is, it may consist of the auxiliary followed by the main verb as illustrated in (2).

(2) The structure of the complex verb:
auxiliary+ main verb.

tuà - lyaà - byaà tuà - ka - gánda
SM TM be SM TM stem
we be we go
'we were going'

2. The tense-aspectual markers in the Kinande simplex verb

Because Kinande has numerous TAM morphemes, let me first give their positions in the INFL unit of the verb.

(3) Positions of the TM morphemes
(Valinande 1984, Mutaka 1994)

1 2 3 4 5 6 7 8 9 10 11 12 13
a nga na ma bi ri e ne mu ndi ta sya ya
ka
ki
ø

Some morphemes have fixed H tones, others are toneless and others have a regular H tone that anticipates onto the preceding vowel and delinks from its sponsor. The typology of most of these TAMs is presented in (4).

(4) Types of tones in the TMs (Mutaka 1994)

| Fixed tones | Toneless | Regular tones |
|-------------|------------|---------------|
| ka | na | li (lya) |
| | ndi | si (sya) |
| | si (sya) | ta |
| | ya | amaa |
| ne (nendi) | ne (nendi) | bi |
| abiùri | li (limu) | |
| | mu (limu) | |

2.1 The simplex verb with one TAM in the INFL unit

Let us first examine the tense on single tense markers that appear in the simplex verb. The verb roots in (a,b) is toneless whereas the ones in (c,d) is H. An example with an OM

is also given to show the changes that occurs when an OM is part of the expanded stem.¹

- (5)a. tw-a-humiraè /tu-a-hum-ir-aC-aL/
we hit for (in the remote past)
tw-a-mu-humira
we hit for him (remote)
tw-a-lusaàyaè
we took off our clothes
- b. tw-aà-huàmiraè/tu-a-hum-ir-aC-aHL/
we hit for (in the recent past)
tw-a-muà-huàmiraè
we hit for him (recent past)
tw-aà-luàsaàyaè
we took off our clothes
- c. tw-aà-tum-iraè /tu-a-tuàm-ir-aC-aL/
we sent for (remote past)
tw-a-mu-tumiraè
we sent for him (remote past)
- d. tw-a-tum-iùràà -aè /tu-a-tuàm-ir-aC-aHL/
we sent for (recent past)
tw-aà-muà-tum-iùràà -aè
we sent for him (recent past)

The TM -a- is underlyingly toneless. For a toneless verb root, no tone surfaces in the entire form as illustrated in (a) whereas a H surfaces on the root and pre-root vowel in the recent past tense as illustrated in (b). For a H tone verb root, a H surfaces on the TM -a- in a remote past tense just in case there is no OM in the form, otherwise, it surfaces with a L if there is an OM in the form. As for the recent past tense, the -a- surfaces with no tone if there is no OM in the stem, otherwise it surfaces with a H tone that anticipates

¹ When the final vowel is marked with a grave accent, this means that the form does not surface with a phrasal H on the penultimate vowel as is usually the case for most forms. In the subsequent examples, I have been marking the surface tones, that is the acute accent for the H tone and absence of an accent for a low tone. I have also been marking penultimate lengthening with a colon. Penultimate lengthening indicates the head of a trochee that is constructed at the right of an intonational phrase.

from the OM. Notice that the suffixal HL assigned by the recent past tense surface in the stem as illustrated in (c, d). Consider also the following forms:

- (6) tu-kaà-gándaê /tu-ka-gánd-aC-a/
we are about to go

tu-kaà-lusayaê
we are taking off our clothes

The H on kaà is fixed. It neither anticipates to the preceding vowel nor delinks from its sponsor.

- (7) a. tuà-ki-gándaê /tu-ka-gánd-aC-a/
while we are still going
tuà-ki-lusayaê
while we are still taking off our clothes
b. tuà-li-gándaê...
if we had gone ...
nyìù-ri-gándaà ...
if I had gone ...
nyìù-ri-lusayaà ...
if I had taken off my clothes ...
c. tuà-sya-gándaê
let us go one day
tuà-sya-lusayaê
let us go and take off our clothes

An examination of the forms in (6) indicates that the SM is toneless. The H on the SM in these forms in (7) must therefore originate from the TMs -ki-, -li-, sya. The l/r alternation in (7b) is due to the quality of the round vowel that precedes. For an account, see Mutaka (1987). Consider the following forms:

- (8) a. tu-taà-gándaâaè
let us go Informational imperative²
tu-taà-lusyaâaè
let us take off our clothes please

² The imperative here could be called ‘informational’ in that the speaker actually informs his interlocutor that he is now leaving. (See also the use of the term ‘informational’ in footnote 2, about the morphemes -limu-.)

tu-taà-humiraâaè
let us hit please

- b. tu-taà-tumaâaè let us send
c. eri-humiùtra to hit for
eriù-ta-humiùtra
to merely hit for
erinaàtahumiùri:ra
to just merely hit for

The H that surfaces on -ta- is presumably fixed like the one in -ka- although, underlyingly, it is associated to a H that anticipates onto the preceding vowel and delinks from its sponsor as illustrated in the forms in (c). Notice that this -ta- is part of a discontinuous morpheme ta ... a. At this stage, it is not clear how the contour tone gets onto the prefinal vowel. Consider also the following forms:

- (9) a. ta-gándaâaè go please
ta-lusyaâaè
take off your clothes
ta-humiraâaè hit for please
b. taà-tumaâaè send please

The -ta- in this subjunctive form must be toneless as only the lexical H on the H tone verb surfaces on it as shown in (b). This -ta- is also part of the discontinuous morpheme ta...a as in the previous example.

- (10)a. tuà-ya-gáand-árár-á
let us go in the very near future on purpose
tuà-yaà-luàsiriraàyá
let us go and take off our clothes on purpose
tuà-yaà-huàm-ir-á
let us go and hit
b. tuà-ya-tuàmáê
let us go and send
tuà-ya-tum-iùráê
let us go and send for
c. eri-ya-hum-iùtra
to go and hit

The TM -ya- in these forms derives from the verb ári-ya-a ‘to go’. It presumably gets a suffixal H that surfaces on the vowel that

precedes it as shown in the H tone verb root in (b). The subjunctive form assigns a suffixal HL in these forms. The suffixal H surfaces on the root and pre-root vowel of a toneless verb root as in (a) and on the penultimate and antepenultimate vowels of a H tone verb root as in (b). The lack of a H on -ya- in (10a) still needs an explanation that we do not have at this stage of our work. It is due to the irregularity of the verb *ári-gánda* ‘to go’. The fact that a H tone appears on the SM of forms in (a) indicates that the suffixal H both targets the root vowel and the TAM -ya- from which it anticipates. The TAM -ya- is toneless underlyingly as illustrated in (c).

To summarize so far, the H on a single TM may anticipate onto a preceding vowel and delink from its sponsor as on -ki-, and it may be a suffixal H that targets the TM as on -ya-. Concerning the imperative forms using the TAM -ya-, a suffixal H of the HL melody assigned by the tense targets both -ya- and the expected TBUs in the verb stem, that is, the first root vowel in a toneless verb root and the penultimate vowel in a H tone verb root. This summary is made clearer in the following tableau with illustrative examples.

1.2 The simplex verb with two TAMs in the INFL unit

Since the typology of tones in the forms with two TAMs is not very different from the one we encountered in the forms with a single TAM, I will only list the processes that do not figure in the previous tableau.

| Tone in INFL with 2 TAMs | Stem |
|---|-------------------------------|
| suffixal H on -ya- tu-aà-ya- | no special tone humiriraè |
| Branching H in -ama- e.g. tu-aàmaà- | no special tone humirìùtra |
| Loss of branching H in -ama- in an if-clause e.g. tu-ama- | no special tone humirìùtra |

| TAM in INFL | Stem |
|--|--|
| fixed H on -ka- tu-kaà- | no special suffixal tone humiraà-a |
| H anticipates & delinks from sponsor Tuà-kina | no special suffixal tone humiraà-a |
| suffixal HL targeting -ya- tuà-yaà- | suffixal HL huàmiraàè |
| special status of -a- in a H tone verb: a in recent past w/t OM: e.g. tu-a-aà with OM: e.g. tu-aà- | suffixal HL tum-ùràà -aè muà-tumùràà -aè |
| special status of -a- in a H tone verb: aà in remote past w/t OM: e.g. tu-aà-a with OM e.g. tu-a | suffixal L tumiraè mu-tumiraè |
| regular H of -ta- becomes fixed in informational imperative: e.g. tu-taà- | a LHL melody on the FV humiraàaè |

In the following section, we not only describe the forms used as auxiliary but also point out the tones used in the auxiliary and the TAM in the verb.

3. The tones in the complex verb form

As pointed out earlier, complex verb form means a form that consists of an auxiliary and the main verb as illustrated in the following examples.

- (20)a. tuà-lwáà tuà-kaà:-lyaè
‘we were eating’
tu-naà-lwáà tuà-kaà:-lyaè
‘we were indeed eating’
b. tuà-lwáà tuà-ka-huà:ma
‘we were hitting’

As illustrated in these forms, the complex verb consists of an auxiliary whose structure is SM-lwáà and the main verb whose structure is SM-TAM-Stem. Since the

auxiliary verb derives from the verb *ári-lu-a*, which is a toneless verb root, we must assume that the H on the SM is the result of a suffixal H usually found in the recent past tense (cf. Mutaka 1994). It will be observed that the H on *lwáà* results from a postlexical H spreading from the initial TBU of the following word.

What is new in the main verb is that the fixed H on the TAM *-ka-* spreads onto the preceding vowel and delinks from its sponsor. This H thus behaves like the H in a relative clause affirmative (Hyman, p.c.) in a form such as *oyuà-ka-humaà-a* ‘the one who is hitting’. Consider also the following forms:

- (21)a. *tuà-lwáà iù-tu-naà-muà:-lyaê*
 ‘we were eating’
tu-naà-lwáà iù-tu-naà-muà:-lyaê
 ‘we were indeed eating’
 b. *tu-naà-lwáà iù-tu-naà-mu-huà:ma*
 ‘we were indeed hitting’

These forms illustrate a second type of the use of the auxiliary *-lwáà* where the main verb starts with a complementizer *iù-*. Presumably, the H on *-naà-* is fixed in the TAM of the main verb as *-mu-* has been observed to be underlyingly toneless in simplex verbs. Actually, this *naà* is the same as the morpheme *-náà-* used also in combination with *-mu-*, (e.g. *tuà-lwáà iù-tu-náamu-huàma* ‘we were hitting’). Consider also the following forms:

- (22)a. *tuàlwáà iù-tu-abìürür -ryaê*
 ‘we had already eaten’
nyüü-lwáà iù-n-abìürür -ryaê
 ‘I had already eaten’
aà-lwáà iù-n-abìürür -ryaê
 ‘he had already eaten.’
 b. *tuàlwáà iù-tu-abìürü -huà:ma*
 ‘we had already hit’

Presumably, the H on *-bü-* in the main verb of this form is fixed.

- (23)a. *tuàlwáà iù-tu-naà-hakaàb-iöütrá*

‘we were in the state of being smeared’

- b. *tuàlwáà iù-tu-naà-huàm-iö:ráè*
 ‘we had already hit’

Because the main verb uses the suffixal aspectual marker *-iörá*, the H on the root vowel and the vowel that precedes it must be the result of a suffixal H assigned by the recent past tense. Consider also the following forms:

- (24)a. *tuàlwáà iù-móà-tu-a-n-aàmaà-hakaà:ba*
 ‘we had just smeared ourselves’
 b. *tuàlwáà iù-móà-tu-a-n-aàmaà-humüütra*
 ‘we had just hit for’
tuàlwáà iù-móà-tu-a-n-aàmaê-huà:ma
 ‘we had just hit’
tuàlwáà iù-móà-tu-a-n-aàmaà-humira Maguà:lu
 ‘we had just hit for Magulu’

The main verb in these forms uses a discontinuous TAM *móà..a-na-amaa-*. The H on *-aàmaà-* is presumably the branching H that was seen in the simplex verb onto this morpheme. Consider also the following forms:

- (25) *nyüü-lwáà w’áriür -ryaê*
 ‘we ought to eat’
baàà-lwáà b’áriür -ryaê
 ‘we ought to eat’
tuà-lwáà b’áriür -ryaê
 ‘we ought to eat’

These forms show that the auxiliary *-lwáà-* may be followed by a main verb in the infinitive as shown by these examples. The consonant “w-/b-” in these forms is an agreement marker that refers to *mundu* ‘person’ in the case of “w” and *bandu* ‘people’ in case of “b”.

To summarize, the auxiliary *lwá* takes a suffixal H that surfaces on the preceding vowel and the main verb contains tones that

may be fixed as in the case of -aàmaà-, a H that anticipates onto a preceding vowel and delinks from its sponsor as in the morpheme -kaà-, -biù-, and -naà-. In case the main verb has a complementizer -iù-, this complementizer always surfaces with a H. One peculiarity about -ka- is that its fixed H is now regular in that it anticipates and delinks from its sponsor.

A brief comparison of the subjunctive form of the auxiliary lwáà (from the toneless verb root -lu- in eri-lu-a) with the subjunctive form of eri-hum-a which has a toneless verb root will help clarify the assignment of the suffixal H into these forms.

- (26)a. tuà-luãà-á [tuàlwá] let us leave
 b. tuà-huàm-á let us hit
 nyi-naà-luãà-á [nyinaàlwá]
 let me come indeed
 (cf. /e-ri-luã-a/ 'to leave')
 nyi-naà-huàm-á
 let me hit indeed
 (cf. /e-ri-hum-a/ 'to hit')

As shown in these forms, the suffixal H surfaces onto the root vowel and the vowel that precedes it. Notice also that the auxiliary -lwá- may be used with an -iōrá suffixal aspectual marker as in the following example. Consider these forms:

- (27) moà-tu-aà-lwiōr iù-tu-aà-huàmi:raè
 /móà-tu-a-luã-iōrá/
 'we hit immediately'
 *moà-tu-aà-lwiōrá tu-aà-huàmiraè

When used in this tense, the form has to be followed by the complementizer iù-. This auxiliary -lwáà- can also be conjugated in other forms where it is preceded by aspectual markers as illustrated in the following forms.

- (28)a. tu-kaàndi-lw' iù-tu-aà-huàmi:raè 'we will hit immediately'
 b. tuà-lwe-ndi-lw' iù-tu- aà-huàmi:raè
 'we would hit immediately'

Finally, we would like to mention that -lwá- can be used as an aspectual marker in a non complex verb as illustrated below.

- (29) tu-naà-lwá-ndi-humiùtra³
 'we could hit for'
 siù-tuà-lwá-ndi-humiùtra
 'we would not hit for'

So far, we have seen the use of the auxiliary -lwáà-. Another auxiliary used in the complex verb is -bya- as illustrated in the following forms.

- (30).a. tu-anataà-byaà tuà-ka-humiùtra
 'we were at least hitting for'
 b. tu-náàmundiù-byaà tuà-ka-huà:ma
 'we will be hitting'
 c. tu-náàmundi-humiùtra
 'we will hit for'
 tu-náàmundiùta -humiùtra
 'we will at least hit for'

As shown in these examples, both the auxiliary -bya- "be" and the main verb -humira "hit for" take tense and aspectual markers. Because -bya- is a H tone root, the H that surfaces on the vowel which precedes it is the lexical H. As illustrated in (c), -ta- is underlyingly associated to a H tone that anticipates and delinks from its sponsor. Like in the case of lwáà, the H on byaà results from a postlexical H spreading from the preceding word as will be demonstrated later.

- (31) tu-a-byaà iù-tu-naàmu-humiùtra
 'we were hitting for'
 (in a recent past)
 tu-anaà-byaà iù-tu-naàmu-humiùtra
 'we were indeed hitting for'
 tu-anataà-byaà iù-tu-naàmu-
 humiùtra
 'we were at least hitting for'
 (remote)

³ Probably the TAM -ndi- derives from N-ri-, where ri- is the class 5 prefix marker for verbs and N- is the class noun prefix. This form could be derived diachronically from : tu-na-lwá e-N-ri-humira.

tu-endiù-byaà iù-tu- naàmu-
 humiùtra
 ‘we would be hitting for’
 tu-enàandiù-byaà iù-tu-naàmu-
 humiùtra
 ‘we would be hitting for’
 tu-nàamundiù-byaà iù-tu-
 naàmu-humiùtra
 ‘we will be hitting for’

As shown in these forms, the auxiliary -bya- may be followed by a main verb introduced by the complementizer iù-. Notice that when the main verb is not introduced by the complementizer iù-, the number of tense-aspectual markers it can have is restricted by the kinds of tense-aspectual markers used in the auxiliary. Consider the following examples:

- (32)a. tu-kaàndisyaà-byaà tuà-ka-humiùtra
 ‘we will be hitting for at that time’
 tw-a- humiùtra
 ‘when we will hit for at that time’
 tw-ama-humiùtra
 ‘if we hit for at that time’
 *tu-neàmu- humiùtra
 *tu-abìùrì - humiùtra
 *móà-tu-anaàmaà- humiùtra
 b. tu-kaàndisyaà-byaà iù-tu-neàmu-
 humiùtra
 ‘we will be in the act of hitting for’
 iù-tu-abìùrì - humiùtra
 ‘we will have finished hitting for’
 iù-móà-tu-anaàmaà-humiùtra
 ‘we’ll just have finished hitting for’

The following paradigms show that the tense is mostly expressed by the auxiliary verb.

- (33)a. tu-a-naà-byaà iù-tu-naàmuà:-lyaê
 (more recent)
 b. tu-a-na-byaà iù-tu-naàmuà:-lyaê
 (more remote)
 ‘we were eating indeed’
 (34)a. tu-a-byaà iù-tu-naàmuà:-lyaê
 (progressive, more recent)

- b. tu-aà-byaà iù-tu-naàmuà:-lyaê
 (more past)
 ‘we were eating’
 (35)a. tu-aà-byaà tuà-kaà:-lyaê
 (more past)
 b. tu-a-byaà tuà-kaà:-lyaê
 (more recent past)
 ‘we were eating’
 (36)a. tu-endiù-byaà iù-tu-naàmuà:-lyaê
 (more remote)
 b. tu-eàndiù-byaà iù-tu-naàmuà:-lyaê
 (more neutral with respect to tense)
 ‘we would be eating’
 (37)a. tu-enendiù-byaà tuà-kaà:-lyaê
 (more remote)
 b. tu-eneàndiù-byaà tuà-kaà:-lyaê
 (more neutral with respect to tense)
 ‘we would be eating’
 (38)a. tu-a-naà-byaà tuà-kaà:-lyaêê
 (recent past)
 b. tu-a-na-byaà tuà-kaà:-lyaêê
 (remote past)
 ‘we were eating indeed’
 (39)a. tu-a-naà-byaà tu-aà:-lyaê
 (more recent past)
 b. tu-a-na-byaà tu-aà:-lyaê
 (remote)
 ‘whenever we ate’
 (40)a. tu-anataà-byaà tuà-ka-humiùtra
 (remote)
 tu-anaàtaà-byaà tuàka-humiùtra
 (more recent past)

One crucial observation in these forms is that the suffixal H of the recent past tense seems to affect the TAM in the auxiliary whereas the suffixal L tone of the remote past tense affects the tone in the TAM of the auxiliary in the sense that a H tone on a TAM such as -na- or -ta- that would have anticipated does not. In the forms that express a remote past, the TAM surface with L as in (36a (on á of ándiù 37a (on áná), 38b, 39b,). In the case

of the recent past tense, notice that the lexical H does not surface if the TM immediately precedes the root as in (35b) unless this morpheme is -na- as in (38a, 39a).

We would like to point out that it is mostly the auxiliary that encodes the various shades of tense. An examination of the following forms will make this clearer.

- (41)a. tu-kaàndiù-byàà tu-a-humiùtra
‘when we hit for’
- b. tu-kaàndiù-byàà tu-ka-humiùtra
‘we will be hitting for’
- c. tu-kaàndiù-byàà tu-a-abi-humiùtra
‘after we have hit for’
- d. tu-kaàndiù-byàà tu-ana-abi-humiùtra
‘just after we will have hit for’
- e. tu-kaàndiù-byàà tu-ama-ata-humiùtra
‘if ever we hit for’
- f. tu-kaàndiù-byàà tu-ama-humiùtra
‘if ever we hit for’
- g. tu-kaàndiù-byàà iù-tu-limu-humiùtra
‘we’ll be on the verge of hitting for’
- h. tu-kaàndiù-byàà iù-tu-nàamu-humiùtra
‘we’ll be hitting for at that time’

These examples show that, when the auxiliary is kept constant, and that the tense-aspectual markers are changed in the main verb, various meanings that are not directly related to tense are revealed. It should be noticed that, in the main verb, the fixed H of -ka- becomes regular in that its H now anticipates onto the preceding vowel and delinks from its sponsor as illustrated in (b). Also, -ama- which is normally associated with a branching H loses its H and behaves as if it was completely toneless. In (e), the H on maà of -ama-ata- originates from the H of -ta-.

So far we have been using the auxiliary -bya-. Notice that it can also be used in the past tense with the suffixal tense marker -iòrá as illustrated in the following examples.

- (42)a. tu-a-bààràà tu-a-humiùtra
‘when we hit for’
(recent past tense)

- tu-a-bààràà tu-ama-humiùtra
‘if we decided to hit’
- tu-a-bààràà tu-ka-humiùtra
‘while we were hitting for’
- b. tu-a-à-bààràà tu-a-humiùtra
‘when we hit for’
(remote past tense)
- tu-a-à-bààràà tu-ama-humiùtra
‘if we decided to hit for’
- tu-a-à-bààràà tu-ka-humiùtra
‘while we were hitting for’

The auxiliary -bààrà’ here is in fact /bá-iòrá⁴ underlyingly. In the (a) forms, it is in the recent past tense whereas in the (b) forms, it is in the remote past tense. As shown in these examples, it is the auxiliary -bààrà- that carries the tense: remote or recent past tense. The main verb carries the aspectual markers that may modify the meaning of the complex verb in various ways, that is, meaning that is expressed in English with an if-clause, a when-clause, or a while-clause.

With respect to the tones in the auxiliary -bya- and -bààrà-, notice that they always end with a high tone. Following a suggestion by Larry Hyman (personal communication), this H most probably originates from the following word. The following arguments can be proposed for justifying such a move.

First, the penultimate length which is the clue for the end of the intonational phrase in Kinande never appears after the auxiliary. It rather appears at the end of the main verb. In other words, the auxiliary and the main verb constitute one intonational phrase.

Following another suggestion of Larry Hyman, it is highly probable that, in Kinande, the subject marker and the augment have an underlying H tone that surfaces onto the preceding vowel. Consider the following examples in support of this proposal:

⁴ The verb -bya is probably /bá-a/ in the underlying representation. The mid front vowel devocalizes before -a to give the glide in -bya. In bàrà, á+iò coalesce into á, thus giving bá-árá → bàrà.

- (44)a. amagándaà n' omuãliõùrmiõ
if he goes with a (specific) farmer
b. amagenda na mul iõùrmiõ
if he goes with a (non specific)
farmer

The difference between the two sentences is that the word for farmer in (b) has no augment. And it is precisely the verb that precedes this form that has a FV which surfaces with a L tone.

With these assumptions, we can now propose that the H on the FV of the auxiliary always originates from the main verb, whether this main verb starts with the complementizer iù-, a subject marker, or an augment as in the following examples:

- (46) tuàlwáà iù-tu-naà-mu-gáà:nda
we were (in the process of) leaving
tuàlwáà tuà-ka-gáà:nda
we were leaving
tuàlwáà b' árigáà:nda
we'd better leave
tu-anataà-byaa tu-ama-gáà:nda
whenever we had to leave

Apart from -lwá-, -bya-, and -bára, the verb stem -sal-a meaning 'vomit' serves also as an auxiliary. But it does not express the idea of "vomit" when used as an auxiliary. The following forms illustrate its use in a non-past form:

- (47). tuà-lyaa-salaà tu-a-humiùtra
(immediate past)
'we finally hit for'
tu-a-saàlaà tu-a-humiùtra
(recent past)
'we finally hit for'

tu-aà-salaà tu-a-humiùtra
(remote past)
'we finally hit for'

Consider also the following examples.

- (49)a. tuàlyaa-byaa twaàsalaà tu-a-
humiùtra
'when we finally hit for'
tu-naàlwándisyaàtaàsyaa-byaa tw-
aà-salaà tw-a-ya-humiùtra
'whenever we will have the
opportunity of hitting for one more
time'
tu-náamundisyaàtaàsyaa-byaa tw-
aà-salaà tw-a-ya-humiùtra
'when we'll have, each time, in the
far future, an opportunity to hit for'
b. *twaàsalaà tuàlyaa-byaa tu-a-
humiùtra
c. twabáàráà twaàsalaà tu-a-humiùtra
'when we finally hit for'
*twabáàráà twasaàlaà tu-a-humiùtra

As illustrated in these forms, twaàsalaà is sandwiched between the first auxiliary and the main verb. In case it is also considered as an auxiliary, I would like to point out two details about its use: (a) if there are two auxiliaries in the verb, it cannot be in the first position; (b) its tones do not change as illustrated in (c) even if the first auxiliary is in the past tense for example. In fact, it has an adverbial meaning, something like "finally."

Apart from these auxiliaries, that is -lwá-, -bya, bára, -sala, there are a few others that are monosyllabic and that do not look like verbs. They are exemplified below:

- (50)a. siù-tu-liù tu -a-gáà:nda
'we have not left yet'
siù-mu-liù mu -a-gá:ànda
'you have not left yet'
b. tuà-táà tu-a-gáà:nda
'(as) we have not left'
muà-táamu-a-gáànda
'(as) you have not left'
c. tu-náà tu-a-gáànda kwehiù
'have we left really?'

mu-náà mu-a-gáànda kweàhiû
 ‘have you left really?’

| Auxiliary | Main verb |
|--|---|
| suffixal HL related to the recent past tuà-lwáà special status of -a-: a in recent past tu-a-byaà | no special tone iû-tu-naàmu-humiûtra iû-tu-naàmu-humiûtra |
| Suffixal L related to the remote past tu-ana-byaà special status of -a-: aà in the remote tu-aà-byaà | no special tone iû-tu-naàmu-humiûtra iû-tu-naàmu-humiûtra |
| H on the FV resulting from a following word e.g. tu-aà-byaà tuà-lwáà | TBU of SM, Augment, complementiz. tuà-ka-humiûtra b' árihumiûtra iû-tu-naàmu-humiûtra |
| HTA from a specific morpheme e.g. ta: tu-anaàtaà-byaà | fixed H of ka changes to regular tuà-ka-humiûtra |
| failure of HTA related to remoteness tu-ana-byaà | no special tone tu-a-humiûtra fixed H of ka changes to regular tuà-ka-humiûtra |
| no special tone changes tu-kaàndilw' | suffixal HL in main verb iû-tu-aà-huàmi:raè |
| fixed H on morphemes such as ka- tu-kaàndiû-byaà | fixed H of ka becomes regular tuà-ka-humiûtra branching H on ama deletes tu-ama-humiûtra tu-amaàta-humiûtra |
| no special tone, suffixal H of HL tu-kaàndiûbyaà tuà-lwáà | H on the complementizer iû- iû-tu-abiûri -humiûtra iû-tunaà-huàmi:raè |
| suffixal H(L) in Aux → móa-tu-aà-lwiráà | suffixal HL in main verb iû-tu-aà-huàmi:raè |

As illustrated in (a,b), -li- and -tá- are used in the negative whereas -ná- is used in the interrogative, preferably with a question word such as kwáàhiû ‘really’.

Like all the auxiliaries we have discussed, they also carry a H tone which, as has been argued earlier, originates from the following word.

To summarize, the types of phonological processes that have been found in the complex verb are the following: (the type of process is given with an illustrative example that spans the two columns⁵.)

I would like also to mention that other verbs in Kinande also behave as auxiliaries and exhibit the same typological tonal processes. Relevant examples can be found in the full version of the paper.

4. Concluding remarks

The typology of tones that have been uncovered in the forms discussed in this paper has been of two types: the types of tones that surface in the INFL of a simplex verb and those which surface in both the auxiliary and the INFL of the main verb. It has been pointed out that, in the simplex verb, the tones that appear in the INFL may be of the following type:

-fixed H tone

-regular H tone that anticipates and delinks from sponsor

-suffixal H of the TAM -ya- which is actually a verb form.

-the TAM -a- has a special L tone in the recent past tense of a H tone verb root when there is no OM in the form and L when there is an OM in the form

-the TAM -a- has a special H tone in the remote past tense of a H tone verb root when

⁵ Notice that the different typological processes that appear in each column can be used as a basis for comparison with other types of tonological processes that appear in neighboring languages.

there is no OM in the form and it surfaces with a L when there is an OM in the form.

-the branching H of -ama- deletes in an if-clause

In the stem, a suffixal HL is assigned by the recent past tense and a suffixal L is assigned by the remote past tense.

In the auxiliary, in addition to the types of the tones found in the INFL of the simplex verb, the following types of tones have also been uncovered:

-suffixal H in auxiliary using a recent past tense form

-deletion of H on some tense markers that would otherwise have a H that anticipates in simplex verb forms

In the main verb:

-the fixed H of -ka- sometimes becomes regular by anticipating and delinking from its sponsor.⁶

In addition, it has been shown that the FV of the auxiliary verb always surfaces with a H that derives from the TBU of the following word. Both the auxiliary and the main verb are in an intonational phrase as penultimate lengthening which is sometimes a test to know where the intonational phrase ends only appears in the main verb and never in the auxiliary.

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⁶ Mark Baker (personal communication) has pointed out to me that -ka- and -a- must be special markers in Kinande as they are the ones that frequently appear in both the auxiliary and the main verb, and always in initial TAM position. This highly suggests that they may be tense markers. Alternatively, the word tense marker for -ka- may be a misnomer, that it is perhaps a mood marker, or something else.