LUGANDA VERB MORPHOLOGY: A NEW ANALYSIS OF THE SUFFIXES [-YE] AND [-A] AND THEIR DISTRIBUTION ACROSS THE INDICATIVE, SUBJUNCTIVE AND IMPERATIVE MOODS

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In this paper, I propose a novel morphological analysis of the Luganda (ISO 639-3: **lug**) verbal suffixes [-YE] and [-A]. I argue that the suffix [-YE] is bi-morphemic: [-Y] is a Perfective aspect morpheme, while [-E] is a functional suffix found in linguistic contexts indicating a change of state in the immediate past or in the immediate future. The data analysis further suggests that suffix [-A] is a default marker used as phonological filler. Finally, I show that the different linguistic contexts of use of the markers [-Y] [-A] and [-E] explain their distribution across the Indicative, Subjunctive and Imperative moods.[1]

1. Introduction

This paper presents a new morphological and distributional analysis of Luganda tense and aspect morphology. Central to the analysis is the novel interpretation of the morpho-semantic nature of the suffix [-YE] usually found in association with the expression of the Near and the Immediate Past tense. Differently from previous analyses, I argue that the suffix [-YE] is bi-morphemic: the marker [-Y] is an aspectual morpheme expressing the feature 'Perfective', whereas the marker [-E], I claim, is a suffix found in linguistic contexts that mark a change of state.

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[1] The data presented in this paper come from written sources as well as from language consultants. The two informants consulted for this paper are John Nsenza and Odoi Nora, who live and work in the capital city of Kampala. Both informants are in their thirties and have undergraduate college degrees.

The bi-morphemic analysis of the suffix [Y-E] is explanatorily more adequate than previous mono-morphemic analyses of the same. It accounts for the following important facts associated with Luganda verb morphology: (i) the distribution of Final Vowel [-E] across the indicative and Subjunctive moods; (ii) the morphological identity between the [-E] of the Perfective and the [-E] of the Subjunctive; (iii) the complementary distribution of [-Y] with Final Vowel [-A] and (iv) the morphological option for both [-Y] and [-E] to surface as separate endings.

I organize the present paper as follows. In section (2) I provide data in favor of a bi-morphemic analysis of the suffix [-YE]. In section (3) I demonstrate that [-Y] is a Perfective morpheme and I argue that [-E] is an independent suffix. Finally I discuss the morphological nature of the suffixes [-E] and [-A] and their complementary distribution in the indicative, Subjunctive, and Imperative moods.

Before discussing the analysis further, let me briefly introduce the theoretical premises to my analysis. I frame my analysis within a generative approach to syntax. I assume Merge and Move as the two main operations syntax has to build sentences (Chomsky 2005). Functional and Lexical morphemes are selected from the Lexicon and they project in the syntax as heads and phrases. Syntactic structure is built through phrases and heads merging and moving bottom up along three layers of the grammar: a Verb Phrase (VP)[2], an Information Phrase (IP) and a Complementizer Phrase (CP). Predicates acquire mood, tense, aspect and voice features via phrasal movement to specifier positions of functional projections. Further I assume with Cinque (1999:128-129) that each functional projection of the IP and CP layers of the grammar has a marked and a default value. The marked value is usually associated with overt morphology and the default value with the absence of any morphological marking.

Finally, following a Minimalist representation of the grammar, I assume that syntactic computation of a string precedes the phonological and the semantic interpretation of the same. In other words, after the lexical selection, the syntactic structure of a string is built and then the string receives a phonological and a semantic interpretation respectively in the phonological component of the grammar (PF) and in the semantic component (LF).

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[2] A full list of abbreviations can be found at the end of this paper.

2. The Suffix [-YE]

As recently documented cross-linguistically by Roses et al. (2003) and Nurse (2003:96), among many others, the majority of Bantu languages use a form of the Proto-Bantu final suffix *-id (*-ile,-ele,-ire,-ie)* as marker of the 'anterior', Perfect or Perfective aspect.

In his 1955 study of Sestwana, Cole suggests that [ILE] can be considered as the combination of the two suffixes [*IL] and [*E]. Although the two suffixes can never appear separately for Cole, they can be interrupted by other morphemes, e.g., causative or passive morphemes, as indicated in the examples in (1).

(1)   Simple form   rek-A
        Modified form   rek-ILE
        ILE-Passive W   rek-IL-W-E

The discontinuous nature of the suffixes [IL] and [-E], however, does not lead Cole to assume that IL and E are two distinct morphemes. Cole, in fact, considers [*ILE] as a semantic unit, i.e., the expression of the Completive aspect. After Cole, other studies agree with the hypothesis that the suffixes [IL] and [-E] are discontinuous; see Hyman and Katamba (1990), Hyman (1995), Hyman et al. (1998), Goldsmith (1996), Kimenyi (2004) and many others.

Particularly interesting is Kimenyi's (2004) comparative analysis of the morpheme [*ILE] in Kinyarwanda and several other Bantu languages. He argues that the Proto-Bantu morpheme [*ILE] is analyzable as a discontinuous morpheme: the morpheme [*IL], the expression of the Perfective aspect, and Final Vowel [*E], which he considers a default vowel added to the structure to satisfy the language's phonological constraints. In Kinyarwanda verb stems need to end in a vowel and Kimenyi argues that [-E] is the default vowel. Kimenyi's arguments are based on the discontinuous nature of morpheme in the presence of causative and passive morphology. Like in Sestwana, also in Kinyarwanda, the morpheme [-YE] can be interrupted by the passive morpheme [W] as in the following examples in (2) from Kimenyi's (2004) comparative analysis.

(2)   a. Ba-sek-A
          They-laugh-A
          'They laugh.'

       b. Ba-sek-W-A
          They-laugh-PASSIVE-A
          'They are laughed at.'

       c. Ba-sek-YE [basetse]
          They-laugh-PFV-E
          'They just laughed.'

       d. Ba-sek-Y-W-E [basetskwe]
          Thye-laugh-PFV-PASSIVE-E
          'They are just laughed at.'

The default nature of Final Vowel [-E] suggests that it is a phonological filler with no meaning on its own, and cannot possibly be the expression of the Perfective. Similarly in Ndebele, Hyman et al. (1998: 4, ft.2) suggest that the Perfective morpheme [ILE] consists of two suffixes [IL] and [-E]. Like the Kinyarwanda example in (2d), Passive [W] appears between [IL-] and [-E] as indicated in (3b).

(3)   a. thum-il-e
          send-Perfective

       b. Si-thúny-i-w-e
          it-send-PFV-Passive-E
          'It was sent.' (Hyman et al. 1998:4, fn. 2)

Ashton et al. (1954) and Kimenyi (2004) show that in Luganda, the Proto-Bantu suffix *-ile (*-ide) is realized as [Y-E] with variants [S-E], [-DDE] or [Z-E] depending on the phonological nature of the preceding consonant of the verb stem. The default form of the suffix is [-YE] and it is used with a verb stem ending in [b], [m], [n], [p], [-Y] or [ny] as in (4a-b). The form [SE] is the result of a spirantization process between a verb stem ending in [k or t] and the Perfective marker [-YE] as in (4c). The allomorphic form [DDE] occurs with monosyllabic stems or with polysyllabic stems that end with a liquid or a long vowel as illustrated in (4d-e). Finally, the form [ZE] derives from the process of imbrication and spirantization triggered by a verb stem ending in [l], [n], [d], [g] or [j] and the Perfective marker [-YE] as given in (4f-g).

(4)   a. -laba   >   -labye   'see'

        b. -soma   >   -somye   'read'

        c. -seka   >   -sese   'laugh'

        d. -nywa   >   -nywedde   'drink'

        e. -lya   >   -lidde   'eat'

        f. -gula   >   -guze   'buy'

        g. -siga   >   -size   'sow'

As described in Bastin (1983), Hyman (1995), Kula (2002) among many others, imbrication can be defined as the process of morphological fusion that occurs between the final syllable of the verbal stem and the Bantu Perfective morpheme *[ILE]. Depending on the Bantu language, imbrication may trigger a reduction of the expected sequences of suffixes, the elision of the Perfective maker [*L] or the lengthening of the verbal stem's final vowel.

        As in other Bantu languages, the Luganda morphemes [-Y] and [-E] surface together in the active voice of the Perfective aspect and of the 'so called' Near Past or Perfect as in (5a-b).

(5)   a. Ba-loop-ye   buloopi
           They-accuse-PFV   just
           'They have just accused.'

        b. Ba-a-loop-ye
           They-PST-accuse-PFV
           'They accused.'

But differently from the other Bantu languages, Luganda [-Y] and [-E] do not surface together in the Passive and Causative forms of the Perfective which end always and only in [-A], as indicated by the following examples.

(6)   Modified (YE) form   -A form

    a. Active   -sib-a   -sib-y-e   'tie'
       Passive   -sib-w-a/-sib-ibw-a -sib-idd-w-a
       Causative   -sib-y-a   -sib-izz-a

    b. Active   -leet-a   -lees-e   'bring'
       Passive   -leet-ebw-a   -leet-edd-w-a
       Causative   -leet-ya (>leesa)   -lees-ezz-a

On the other hand, assuming for a moment that the final [-E] found in the Subjunctive mood and the final [-E] of the Perfective are the same morpheme, Final Vowel [-E] surfaces without the Perfective marker [-Y] in the active and passive forms of the Subjunctive mood as shown in (7a-c).

(7)   a. Tujj-e
       We- come-E
       'Shall we come?'

     b. Ba-waay-iriz-ibw-e
       They-accuse-APPL-CAUS-PASSIVE-E
       'Let them be accused falsely!'

   c.   Ba-waay-iriz-ibw-a
       They-accuse-APPL-CAUS -PASSIVE- A
       'They are accused falsely.'

As I demonstrate in the course of this paper, I interpret the possibility for [-Y] and [-E] to surface both separately and together as evidence in favor of the hypothesis that [-Y] and [-E] are two separate suffixes. The data analysis presented in Section 3 shows that the marker [Y / DD] is the expression of the aspectual feature 'Perfective', while in section (3.2) an in-depth look at the linguistic distribution of Final Vowel [-E] reveals that [-E] is not a morphologically neuter default vowel, but is a functional suffix used in linguistic contexts signaling a change of state. The specific nature of Final Vowel [-E] accounts for its distribution across the Indicative and Subjunctive moods in Luganda, further suggesting that the [-E] of the Perfective and the [-E] of the Subjunctive are the same suffix.

3. The Perfective Nature of [-Y] and the Luganda Tense/Aspect System

In the Bantu literature there are two contrasting hypotheses regarding the nature of the suffix [*ILE]. From one hand, as Brisard and Meeuwis (in press) explain, many morphological analyses of the suffix [*ILE] consider it as part of the tense paradigm. More precisely, quoting Roses et al. (2003: 8), [*ILE] has been considered the expression of the "Anterior" or "Perfect" and it is used to refer to "a past action with current relevance […] or to a state that started in the past and continues into the present". On the other hand, Bastin (1986), Hyman and Katamba (1990:154) and Schadeber (2003), among many others, claim that historically the Proto-Bantu *[ILE] functioned also as a Perfective aspect.

Luganda [-YE] has also been considered either a tense or an aspect morpheme. According to Ashton et al. (1954:122-123) and to Dahl (1985), the morpheme [-YE] is the expression of the Immediate Past used to indicate 'the completion of an action/state entered upon within the immediate past'. Looking at the expression of the Past tense in Luganda, Ashton et al. (1954:122-123) and Dahl (1985) claim that Luganda has a three-way past distinction expressing the degree of remoteness: (1) the Remote Past, expressed through the infix [-A-], (2) the Near Past expressed by the combination of Past [-A-] and the morpheme [-YE] (see 5b) and; (3), as seen in (5a), the Immediate Past expressed by [-YE] alone.

According to Welmers (1973:349) and Hyman and Katamba (1990:154), [-YE] is an aspectual feature: for Welmers [-YE] is a Completive aspect morpheme, for Hyman and Katamba, at least diachronically, [-YE] expressed the Perfective aspect. In this paper, following the aspectual interpretation, I argue that the morpheme [-Y] is a Perfective aspect morpheme and that the combination of the Perfective aspect morpheme [-Y] and the tense morpheme [-A-] is used to express the Perfect.

In order to capture the subtle semantic nuances in the use of the aspectual morpheme [-Y] alone or together with the tense morphemes, I frame the analysis within Klein's (1992) representation of the Perfect tense and other past tenses. Though the literature presents several other valid analyses of tense and aspect, I believe Klein's work provides the best framework for understanding better the nuances of the Perfective nature of [-Y] and its distribution in Luganda.

3.1 The Luganda past tense system through Klein's (1992) analysis of tense.
In this paper, I use the interpretation and description of tense and aspect proposed by Klein (1992) in his analysis of the English Present Perfect. With Klein (1992:527, 538), I assume that "relevant entities of temporal reference are not

time points, but intervals or 'time spans' (ex. T, T' et.) which are elements of a structure", and that both Tense and Aspect can be interpreted as relations between time spans. I further consider that time spans have order relations such as T' before T'', T' after T'' and topological relations such as T' can include T''.

I take the time of utterance (TU) as the distinguished time span to which all time spans must relate. In order to measure the boundaries and the duration of time spans, I take into account the relation of TU with Topic Time (TT), which is "the time span to which the claim made on a given occasion is constrained" (Klein, 1992:535) and with the Time of Situation (TSit), which is the time of the event. The order and topological relationships between TT and TU determines whether an event takes place in the past, present or future (8a), whereas order and topological relationships between TT and TSit determine various aspectual relations (8b).

(8) a. (Klein 1992: 536)

PAST	PRESENT	FUTURE
TT before TU	TT includes TU	TT after TU

    b. (Klein 1992: 538)

PERFECT	PERFECTIVE	IMPERFECTIVE
TT after Tsit	TT including the end of Tsit and beginning of time after Tsit	TT properly included in Tsit

According to Klein (1992: 537, 544), the relations established in (8) are abstract, and languages may express them in different forms but what holds for all languages is that tense refers to the time for which a claim is made to TU, whereas aspect relates the time of the situation to the time for which a claim is made, i.e., TT. With regards to the three aspects represented in (10b), the Perfect is expressed as a relation where the TT occurs after TSit, which implies that TSit occurs in the past. With regards to the Perfective, TSit occurs prior to TT, though its end is partly contained in TT. This suggests that though the event/action has occurred prior to TT its effects are still present at TT. Finally an Imperfective unbound event occurs when TT and TSit fully contain each other.

The expression of different degrees of past in Luganda occurs through the interplay of tense and aspect morphology. Klein's notion of Past tense defined as TT before TU is expressed via the Past tense morpheme [-A-] infixed into a verbal stem ending with Final Vowel [-A], as the examples in (9) indicate.

(9)   a. Y-a-som-a   jjo?
            She-PAST-read-A   yesterday?
            'Did she read yesterday?'

         b. O-lowooz-a   y-a-gi-zimb-a   ddi?
            You-think-A he- PAST-it-build-A   when
            'When do you think he built it (the house)?'

         c. Y-a-gi-zimb-a   mu   lukumi mu lwenda mu ana
            He- PAST -it-build-A in   1940
            'He built it in 1940.'

         d. Ekiro kya   jjo   nn-a-sul-a   mu weema
            Night of   yesterday   I- PAST-sleep-A   in a tent
            'Last night I slept in a tent.' (Ashton et al. 1954:254-5)

         e. Ba-a-tuuk-a   jjo   ku nkya
            They-PAST-arrive-A   yesterday   morning
            'They arrived yesterday morning.' (Ashton et al. 1954:279)

This type of past expresses an event/action that took place in the past or better said it occurs at some time that precedes the TU. In Luganda, this form of the past is indefinite as to the exact time the event/action occurs and as to whether the action/event is actually finished and accomplished.

On the other hand, the co-occurrence of Past infix [-A-] with the marker [-Y] and the suffix [-E][3] is used to express an action/event that is finished or accomplished in the Near Past, more or less within the preceding 12 hours from the TU, as exemplified in (10).

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[3] For the moment I analyze the linguistic function of the Perfective morpheme [Y] only. The value of [-E] will be outlined in the next section.

(10)   a. Y-a-som-y-e   ku   nkya?
           She- PAST-read-PFV-E   this morning?
           'Did she read this morning?'

        b. Nn-a-lab-y-e   ekimyanso   mu bire ekiro
           I-PAST-see-PFV-E   in the sky   last night
           'I saw lightning in the sky last night.'

        c. Omulwadde   tw-a-mu-lab-y-e   eggulo
           The patient   we-PAST-him-see-PFV-E   yesterday
           'We saw the patient yesterday.' (Ashton et al. 1954:282)

In the examples in (10), the presence of the suffix [-Y] yields an interpretation of the events/actions as concluded or completed and the presence of the Past morpheme [-A-] has the effect of tying the completion of the action/event to the past. Because of the presence of the tense morpheme [-A], the actions/events in (10) have limited relevance on the Present which supports Nurse's (2003:96) observation that in many Bantu languages the possibility for the meaning of *ILE to shade over into the past or into a stative weakens its semantic relevance on the Present.

If one looks at Klein's Tense and Aspect representation, two are the order and topological relations between T and T' necessary to describe the data in (10): [TT before TU] and [TT after TSit]. The tense morpheme [-A-] suggests that the action/event in the examples in (10) has occurred at some time before TU, hence TT before TU. The morpheme [-Y] instead suggests that the action/event is completed/concluded in the past. The idea of completion in the past is explained by the fact TSit occurs prior to TT, i.e., it occurs in the past with respect to TT.

Lastly, in Luganda, relevance of an event/action that occurred in the Past on the Present is preserved when the morpheme [-Y] is used without the past morpheme [-A]. In this case, [-Y] functions as a Perfective morpheme. The suffix [-Y], in fact, is used when one wants to express an action/event that took place in the immediate past but still has some effect on the present. In other words, the notion of immediacy can be understood as an action/event that took place for a few seconds, a few minutes, a few hours before the TU, but that still has effect on the speaker/context. According to Welmers (1973: 342), in fact, the [-Y] cannot be used in an equivalent of 'I did it this morning', if one speaks in the late afternoon, as also indicated by the examples in (11).

(11)   a. A-som-y-e   bulungi
           He-read-PRV-E   well
           'He has read well.' (Ashton et al. 1954:127)

        b. A-gen-z-e   waggulu
           He-go-PFV-E   upstairs
           'He has gone upstairs.' (Ashton et al. 1954:254-255)

        c. Si-tun-z-e   kantu   olwa leero
           NEG-I-sell-PFV-E   a thing   today
           'I have not sold a thing today.' (Ashton et al. 1954:279)

        d. Omulimu   n-guma-z-e,   seebo
           Work   I- finish-PFV-E,   sir
           'I have finished the work, sir.' (Ashton et al. 1954:127)

        e. Abagenyi ba-tuu-s-e   seebo
           Guests they-arrive-PFV-E, sir
           'The guests have arrived, sir.' (Ashton et al. 1954:127)

The aspectual nature of [-Y] is implicit in the fact that, as Welmers states, [-Y] shifts the attention on 'the resultant present situation' rather than on the time when the action took place, therefore there is no need for a tense morpheme, such as [-A] that ties the event/action to the past.

Moreover, the completive meaning of the morpheme [-Y] is indirectly confirmed by the fact that in Luganda [-Y] does not seem to co-occur with the morphemes NEGATION+NNA (corresponding to English polarity items NOT-YET). Semantically, the morphemes NEGATION+NNA indicate that an action/event has not yet been completed, as shown in the following contrastive examples in (12).

(12)   A:Omulenzi   gwe   n-ku-tum-y-e   o-mu-lab-y-e?
           Boy   1REL   I-you-send-PFV-E   you-him-see-PFV-E
           'Have you seen the boy whom I sent you for?'

        B:Si-nna-mu-lab-a
           NEG I-yet-him-see-a
           'I have not yet seen him.' (Ashton et al. 1954:229)

        B1:*Si-nna-mu-lab-y-e

The lack of completeness of the action/event does not trigger the presence of the suffix [-Y] marking completeness.

According to Klein's system, the Perfective is characterized by a complex topological relation: [TT includes the end of TSit and beginning of time after TSit]. This relation can be broken down in two parts: though TSit occurs in part prior to TT, part of TSit is still contained into TT. The partial containment of TT and TSit explains the relevance of the Perfective action/event on the present; but the fact that TT partly occurs after TSit, and therefore part of TSit is in the past explains the idea that the action/event occurs in the past.

Finally, one interesting aspect of defining the Perfective in terms of partial inclusiveness between TT and TSit is the possibility of capturing the temporal closeness between the Perfective and Present in certain specific linguistic contexts. For instance, the Perfective and Present are interchangeable in the context of a tag question, such as "do you understand?", "do you agree with me?" and "am I right?",where speaker A asks speaker B for a feedback but not for a real information about the discourse. In Luganda, for instance, such a tag question can be formulated not only using the Present but also using the Perfective as illustrated in (13a-c).

(13)   a. O-ki-tegeer-a?
            You-it-understand-A
            'Do you understand?'

        b. O-ki-teg-edd-e?
            You-it-understand-PFV-E
            'Do you understand ?'

        c. O-teg-edd-e?
            You understand- PFV-E?
            'Do you understand?' (Ashton et al. 1954:123)

Because the Perfective is defined in terms of topical relations, the temporal distance between the Perfective and the Present might get so close that aspect and tense may overlap. In a situation where overlapping can occur, I claim that what really determines the choice in the speaker's mind between the Present and the Perfective is whether the action/event as a whole is perceived as Perfective (or bounded) or as non-Perfective (or unbounded) by the speakers at the TU.

Morphologically, such a choice is characterized by the presence of the suffix [-Y] in Perfective contexts and by the presence of Final Vowel [-A] in non-

Perfective contexts. The non-Perfective nature of the Luganda Present, which ends in [-A] is implicit in the fact that a verb in the Present can either have a generic, a progressive, or a habitual reading, i.e., a reading whose focal point is not the beginning or the end of the situation, but its course. According to Ashton et al. (1954:123), a verb in the present expresses (i) an action in progress at the time of speaking; (ii) a habitual action; (iii) a generic statement with no reference to the time of speaking, as often occurs in proverbs; and (iv) a fact closely connected with the future, as illustrated in the following examples.

(14)   a. N-gul-a   bintu   bya mmange
           I-buy-A   things   for my mother
           'I am buying things for my mother.' (Ashton et al. 1954:127)

        b. N-tund-a mmwanyi   e Nnateete
           I-sell-A   coffee berries   at Nnateete
           'I sell coffee berries at Nnateete.' (Ashton et al. 1954:123)

        c. Mazigag-a musota   gajj-a   na   muggo
           Tears   of snake   come-A   with stick
           'The tears of a snake come with a stick.' (Walser 1982: 2720)

        d. A-gend-a   nkya,   a-dd-a   ggulo
           He goes-A   in morning   he-comes-A   at night
           'He goes in the morning, he comes at night.' (Ashton et al. 1954:123)

     As seen above with the examples in (9), in Luganda, the Simple Past, which also ends in [-A], is used to express a non-Perfective action/event. It is indefinite as to the exact time the event/action occurs and as to whether the action/event is actually finished and accomplished. Taken together, the examples in (14) and in (9) clearly show that Final Vowel [-A] is found in correlation with unbound, in progress or habitual events that describe a past, present or future event in its duration, repetition or progression. The non-Perfective nature of a verb ending with Final Vowel [-A] explains the complementary distribution of [-A] with the Perfective morpheme [-Y][4]. [-Y] and [-A] cannot co-occur in the active voice because it is impossible for an event to be Perfective and non-Perfective at the same time.

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[4] See section 3.4 for an explanation of causative Perfective verb stems ending in <a> as suggested by the examples in (3).

However, the complementary distribution between [-Y] and [-A] does not necessarily imply that the final [-A] is a non-Perfective aspect morpheme. As I demonstrate in the next section, Final Vowel [-A] is a default vowel used phonologically to fill the final verbal stem position. The Final Vowel [-A] is a verbal ending not only for verbs in the indicative mood but also for verbs in the Imperative mood as well as for verbal stems in VN compound nouns. Nevertheless, the complementary distribution between [-A] and [-Y] can be syntactically accounted for by assuming, with Cinque (1999:128-129), that the Perfective and non-Perfective aspects are, respectively, the marked and the default value of the same aspectual projection. In the absence of the marked Perfective morpheme [-Y], a verb is by default non-Perfective, i.e. unmarked, and, consequently, it ends with the default marker [-A].

3.2 The verbal suffix [-E]. As seen above, in the indicative active voice, the Perfective marker [-Y] is always followed by Final Vowel [-E]. I argue that the concomitance between Final Vowel [-E] and the Perfective morpheme [-Y], as well as the presence of Final Vowel [-E] across the Indicative and Subjunctive, depends on the particular functional nature of [-E]. Following an intuition of Haddon (1955:79), I claim that, in Luganda, Final Vowel [-E] is a functional marker found in contexts indicating a change of state. In particular, the presence of [-E] indicates that a change of state has taken place in the immediate past or is about to take place in the immediate future. That Final Vowel [-E] maintains the same value across the indicative and Subjunctive moods suggests that the [-E] found in the Perfective and the [-E] found in the Subjunctive are the same suffix.

As to the Indicative, in the examples in (11), the marker [-E] is found together with the Perfective. The concomitance between [-E] and [-Y] remains explained by the very nature of the Perfective. As outlined above, the Perfective is used to indicate the completion of an action or a state entered upon within the immediate past, which implies that a change of state has occurred from the conditions previous to the occurrence of the event/action.

In Luganda, moreover, the Perfective and the suffix [-E] are also used in the context of explicit performatives. Explicit performatives express the intention of the speaker to perform an action that inevitably will bring a change of state at the TU or just immediately after TU as the data in (15) indicate.

(15)   a. Kaakano m-ba-ga-ss-e
            Now   I-you-pronounce married-PFV-E
            'I now pronounce you man and wife.'

b. N-ku-sonyi-y-e
   I-you-forgive- PFV-E
   'I forgive you.'

c. N-ku-sali-dd-e   ogw'okufa
   I-you-sentece- PFV-E to death
   'I sentence you to death.'

Through the presence of the Perfective marker, explicit performatives define actions/events that do not take place in the immediate past, but rather in the present or in the immediate future.

In Luganda, explicit performatives can also be expressed via the Present ending in [-A], but in this case they have either a progressive interpretation as in (16a) or express the passive voice as in (16b).

(16)   a. Kaakano m-ba-gatt-a
           Now   I-you- pronounce married-A
           'I'm now pronouncing you man and wife.'

        b. Olukiiko luno lu-komekkerez-edd-wa   wano
           Meeting   this it- adjoun-PFV-PASS   now
           'This meeting is now adjourned.'

The semantic contrast between the sentences in (15) and (16) support the claims relative to the functional nature of Final Vowel [-E] as a suffix indicating change of state.

Such a nature is further confirmed by the behavior of stative verbs, such as 'to hate' and 'to believe'. If [-E] is used in contexts that mark a change of state, it is unlikely found in concomitance with stative verbs, which semantically do not indicate a change of state. Such a prediction is borne out by the examples in (17a-b) that I contextualized as follows: (i) for both (17a-b) let's assume that in this very moment Mark says something evil to John and as an immediate result in (17a) John hates Mark for what Mark just said; and (ii) in (17b) John has changed his beliefs towards Mark.

(17)   a. Kati   John   t-a-ky-a-yagal-a   Mark   olw`ekintu
           Now   John   NEG-he-it-him-love-A   Mark   for the thing
           eki-bi   ky-a-   mugam-by-e.
           that   it-he   has just said- PFV-E
           'John hates Mark now for what he has just said.'

        a1.*Kati John t-a-ky-a-yaga-ze Mark olw`ekintu eki-bi ky-a-mugam-by-e.

        b. Kati   John   a-zi-kiriza   nti   Mark   muntu   mubi
           Now   John   he-it-believe   that   Mark   person   bad
           'Now John believes that Mark is a bad person.'

As the examples show, stative verbs seem incompatible with the presence of Final Vowel [-E] because of their semantic nature.

    Furthermore, in Luganda, it is also possible to capture the semantic contrast between a state, a change of state and a progressive by looking at the semantic and morphological contrast between the passive adjectival, Perfective and progressive forms of verbs such as 'lwala' (to become sick/ill or to be sick/ill) and 'koowa' (to become tired) as illustrated in the examples in (18) and (19).

(18)   a. Ente   er-wa-dde
           Cow   it-become ill- PFV-E
           'The cow is ill.' (Ashton et al. 1954:168)
           'The cow has become ill.' (Odoi Nora, informant)

        b. Ente   n-dwadde
           Cow   NCP-ill
           'The cow is ill.'

        c. Ente   er-wal-a
           Cow   it-becomes ill-A
           'The cow is becoming ill.'

In (18a), the combination of Perfective and [-E] marks a change of state in the health condition of the subject. This sentence has two possible interpretations. It may represent the present state of the cow, i.e., at the moment the cow is ill, but its state may well change in the future, but it can also represent a real change of state, i.e., the cow has become ill few minutes ago. In contrast, in (18b), the copulative use of deverbal adjectives expresses a permanent condition/state of the

subject. In this case, the cow is always ill. Finally, in (18c), the use of the Present ending in [-A] expresses the progressive or an unbound condition of the process during which the subject is getting ill.

Identical readings are obtained with the verb 'koowa' (to become tired) as illustrated by the examples in (19).

(19)   a. John   akoo-ye
            John   he-tired-PFV-E
            'John has become tired.'

        b. John   mu-koowu
            John   NCP-tired
            'John is tired.'

        c. John   a-koow-a
            John   he-become tired-A
            'John is getting/becoming tired.'

In the example in (19a), one can imagine A telling B that right now or few minutes ago John has become tired. As one can see the change of state is marked by the presence of the final [-E]. In (19b), one can imagine A commenting with B that since A has known John, John has always been tired. In this case, Luganda uses the passive form of the deverbal adjective to indicate a permanent state/condition. Finally, in (19c), one can imagine A and B looking at John working and A telling B that John is getting tired. From the above data and observations, one can conclude that in the indicative mood, the presence of the final [-E] is used to mark a change of state, whereas progressive states and permanent conditions are expressed, respectively, with the Present ending in [-A] and with deverbal adjectives or passive morphology.

Another context where Final Vowel [-E] marks a change of state is in the context of instructional language, i.e., when language is used to give instructions/orders/commands and to ask for permission. Instructional language contexts bring about a change of state because the action that must or shall take place will cause a different state to be brought to "Perfection" (Haddon: 1954:80). Luganda uses the Subjunctive and the Imperative mood to express instructional language. In the examples in (20), the Subjunctive is used in a main clause to express a statement or a question of a permissive/exhortative or mandatory nature that in English finds its correspondent in the modal 'shall' and in a dependent clause expressing an indirect command or the second of two commands.

(20)   a. Tu-jj-e?
           We-come-E
           'Shall we come?'

        b. Mu-gamb-e   aleme (o)kulwa
           Him-tell-E   not   to delay
           'Tell him not to delay.'

        c. Genda   osab-e   ekikajjo
           Go   (and)   ask-E   for a piece of sugar cane (Ashton et al. 1954:220)

        d. Ba-waay-iriz-ibw-e
           They-accuse-APPL-CAUS-PASSIVE-E
           'Let them be accused falsely.'

        e. Ba-waay-iriz-ibw-a
           They-accuse-APPL-CAUS-PASSIVE-A
           'They are accused falsely.'

The semantic contrast between (20d) and (20e) is interesting. In (20d), the presence of the final [-E] suggests an imminent change of state: the accusations towards the subject have not yet been made, but they are about to be made. On the contrary, in (20e) in the absence of [-E], the focus is on the result of event: the accusations towards the subject have already been made.

        The sentences in (21) represent other examples of instructional language, also expressed with Final Vowel [-E] of the Subjunctive.[5]

(21)   a. Mu-leet-e   ebikajjo'
           You (pl) bring-E   sugar canes
           'Bring ye sugar canes!' (Ashton et al. 1954:221)

        b. W-e-kub-e
           You-refl-beat-E
           'Beat yourself!'

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[5]For Ashton et al. (1954:222) the imperative plural is expressed through the Subjunctive mood and [e] is the Subjunctive marker.

    c. Mu-e-samb-e
       You-refl-kick-E
       'Kick yourselves!'

    d. Tu-te-geez-e
       Us-you-explain-E
       'Explain to us.' (Ashton et al. 1954: 225)

    e. Ki-n-deeter-e (kitabo)
       It to me bring-E
       'Bring it to me.' (Ashton et al. 1954: 225)

    f. Gu-tu-leeter-e (omugaati)
       It to us bring-E
       'Bring it (bread) to us.' (Ashton et al. 1954: 225)

In Luganda, however, commands can also be expressed in the Imperative mood. The Imperative of the affirmative 2nd singular person (22a) and of the negative 2nd singular and plural person (22b-c) is expressed by the same form of the verb stem used in the present Indicative, as indicated in the following examples.

(22)   a. Soma
        Read!
        'Read!'

      b. To-soma (sg.)
        Neg-read
        'Don't read!'

      c. Temusoma (pl.)
        Neg-you-read
        'Don't read you!'

The presence of Final Vowel [-A] in the sentences in (22) does not represent a counterexample to the statements above about the presence of Final Vowel [-E] in contexts of instructional language. Following Mutaka and Hyman's (1990) analysis and Hyman, Inkelas and Sibanda's (1999) analysis, I argue that, in Luganda, [-A] is a default vowel needed phonologically to fill out the final verbal

stem position. [-A] is not a morpheme marking the Imperative mood. Every time a verbal stem does not end with a specific morpheme, Final Vowel [-A] is inserted to comply with the phonological constraints of the language. My arguments are based on the distribution of Final Vowel [-A]. The Final Vowel [-A], in fact, is found as a verb ending in several finite and non finite tenses of the Indicative mood. It is also found in the Imperative mood as well as final endings of verbal stems in VN compound nouns.

With regards to the presence of Final Vowel [-A] in the Indicative mood, [-A] is found as final ending for verbs in the present, past and future tense and in the infinitive. With regards to the presence of the final [-A] in the Imperative mood, the default nature of the vowel [-A] in the 2nd singular Imperative is explained if one agrees with Zanuttini's (1997:114) claim that, cross linguistically, 2nd singular Imperative forms are *'bare verbal forms with zero tense and mood.'* A bare verbal form by definition has no mood or tense morphology. A bare form is the default form of a verb paradigm. In the case of Luganda the bare nature of the 2nd singular Imperative implies that the final [-A] is not a morpheme, but it is the default vowel [-A].

Ferrari (2005) demonstrates that, in Luganda, the 2nd singular Imperative, e.g., 'soma' is a bare verbal form and that therefore [-A] is not a morpheme. The bare verb form, in fact, can have different readings according to the context in which it is merged. It has a present Indicative reading, if it is prefixed by a subject clitic as in (23a), or it has an infinitive reading, if it is prefixed by the infinitive class marker [KU] as in (23b); or it can function as an Imperative as seen in (23c).

(23)　　a. A-soma
　　　　　　He-read
　　　　　　'He reads.'

　　　　b. Ku-soma
　　　　　　NCP-read
　　　　　　'To read.'

　　　　c. Soma
　　　　　　'Read!'

According to Ferrari (2005), the different readings are acquired in the syntax via movement of the bare form to different functional projections in the CP or IP layer of the grammar. For instance, following Kayne (p.c), Ferrari (2005) claims that the Imperative force to the bare form 'soma' is acquired via syntactic movement of the bare form under a null mood projection in the CP layer of the

grammar. Similarly, one can assume that the Indicative and infinite readings are acquired in the syntax via movement of the bare form under the Tense Phrase for the Indicative and under an Aspect Phrase for the infinitive. In those cases where the forms of the present Indicative and Imperative are identical, e.g., 2nd plural, Ashton et al. (1954:222) suggest intonation and tone as the disambiguating factors between the identical forms.

Furthermore, the moodless and tenseless nature of 'soma' is further supported by Ferrari's (2005) observation that 'soma' is used as the V component in VN compound nouns as indicated in the examples in (24).

(24)   a. Mu-tunda ssowaane
            NCP- person-sell dish
            'Dish seller.'

         b. Mu-lya matooke
            NCP- person-eat plantains
            'Plantain eater.' (Ferrari 2005: 389)

The cross mood distribution of Final Vowel [-A] suggests that [-A] is not a morpheme, i.e., it is neither an Imperative marker nor an Indicative marker, but [-A] is a default marker added to the structure when the stem needs a phonological filler to satisfy phonological language constraints. It follows that the presence of Final Vowel [-A] in the 2nd singular Imperative and in the negative Imperative does not contradict the claims that Final Vowel [-E] is a functional feature that indicates a change of state.

Lastly, with regards to the negative Imperative, the presence of the default vowel [-A] is semantically explained. If in the context of instructional language, a proposition marks that a change of state must or will take place, the presence of a negative operator denies the occurrence of such a change. It follows that if a change of state does not take place, there is no principled reason for the insertion of the morpheme [-E] and therefore by default the stem takes Final Vowel [-A] as its ending.

To conclude, the data analysis shows that the specific functional nature of [-E] explains its distribution across the Indicative and Subjunctive moods. It follows that the [-E] of the Perfective and the [-E] of the Subjunctive can be considered the same suffix. However, more research is needed to explain tonal differences in a small part of the verbal paradigm of the Perfective Indicative and the Subjunctive moods. According to Ashton et al. (1954: 455-456), verbs can belong to one of the following two tonal classes, e.g., tone class I (*òkugula* "to buy") and tone class II (*òkùkolà* "to do"). According to Asthon et al. (1954: 456,

462), Final Vowel [-E] bears a falling tone in the majority of the Perfective and Subjunctive forms of the verb. However, the final [-E] is tone marked with a low level tone, e.g., [è], in the 1st, 2nd and 3rd singular person of tone class II verbs. At the moment, I am not aware of any reason as to why such a difference in tone may contradict the above-proposed nature of Final Vowel [-E]. However, I leave the answer to this question to the future development of my research.

3.3 The case of the perfective causative and passive verbs. As illustrated in the examples in (6) and here again in (25), the Luganda causative and passive forms of the Perfective end in [-A] rather than in the expected Perfective Final Vowel [-E]. These examples would seem to represent a paradox for the claims relative to the nature of [-E].

(25) Simple form Perfective

	Simple form	Perfective	
Active	-sib-a	-sib-y-e	'tie'
Passive	-sib-w-a/-sib-ibw-a	-sib-idd-w-a	
Causative	-sib-y-a	-sib-izz-a	
Active	-leet-a	-lees-e	'bring'
Passive	-leet-ebw-a	-leet-edd-w-a	
Causative	-leet-ya (>leesa)	-lees-ezz-a	

However, in what follows, I demonstrate that the lack of Final Vowel [-E] is due to a phonological process of elision and vowel lengthening that occurs in the phonological component of the grammar. Because the elision of [-E] occurs at PF, [-E] is underlyingly present at the syntactic level of the grammar and therefore it receives its semantic interpretation at LF.

Let's first look at the causative verbs. Taking as reference Hyman (2003:83-85)'s template form for the causative and Perfective verb stem in Luganda, the causative suffix appears both before and after the Perfective suffix, as given in (26).

(26) V-stem- i̱- i̱r- i̱-
      V-stem – Causative-Perfective-Causative-
      láb-i̱- i̱r-i̱ – >láb-izz-aa
      make see +Perfective

According to Hyman (2003:84), the second [i̧] of the causative suffix fricates the [r] of the Perfective into a [z] and the [i̧] of the Perfective geminates the following [z] rather than deriving a long vowel yielding the final form [V-stem-izz-a]. I claim that two factors determine the absence of an overt final vowel [-E] from the Causative+Perfective template in (26). The first factor regards the Luganda syllable structure and the second one regards the presence of the spurious [H] tone [A].

Looking at the Luganda syllable structure, according to Hyman and Katamba (1999:351,353-356), in word or utterance final position, one can find only open monomoraic syllables (CV) or bimoraic syllables (CVV). In the case of bimoraic syllables, if the first of the two vowels is [-high], it is elided, while the second vowel is subject to a compensatory lengthening. For example, in the case of a consonant template such as [C-e-a], the elision of the first vowel [-E] followed by the lengthening of the second vowel [-A] yields a [C-aa] syllable. On the other side, a consonant template such as [C-ae] yields a [C-ee] syllable as the following examples suggest.

(27)   a. N-diga+e-mu > n-di-gee.mu
            'One buffalo.'

        b. Ba-sibe+a-ba-o > ba-si.baa.bo
            'Those prisoners.' (Hyman and Katamba, 1999: 353)

The final [-E] of the Perfective is not exempted from such elision as is shown in (28a) and (28b). In these examples, the final [-E] is deleted and followed by compensatory lengthening of the initial vowel [-A] of the enclitic wh- word 'ání' (whom).

(28)   a. À-gùl-íl-ìd-dè
            He-bribe-Perfective-E
            'He has bribed (someone)'

        b. À-gùl-íl- íd-dé=ání
            Àgùlílíddáání
            He=bribe-Perfective-e-whom
            'Whom has he bribed?' (Hyman and Katamba 1990:153)

According to Hyman and Katamba (1999), elision and compensatory lengthening take place post-lexically, which I interpret as such processes taking place at PF.

It is plausible to assume that the presence of Final Vowel [-A] on the Causative Perfective forms derives from the prohibition of having two contiguous [-high] vowels, the [-E] and [-A], in final word position. Let's assume that the Causative+Perfective template in (26) contains both Final Vowel [-E] of the Perfective [ir-E] and [-A] as represented in (29).

(29)   a. V-stem-iz-z-E-A

         b. V-stem-iz-z-a-a

The plausibility of the presence of both [-E] and [-A] in the structure in (29a) is confirmed by the following facts. As seen above, in Luganda, the Perfective is characterized by the presence of Final Vowel [-E]. Following Hyman and Katamba (1990:148-153), Final Vowel [A] of both causative and passive Perfective forms is not the default Final Vowel [-A] but it is an enclitic spurious floating [H] tone. Such a tone appears in the last syllable 'as soon as one combines the causative and passive extension with the modified base and places these within a tense that independently takes an [H] suffixal tone' (Hyman and Katamba, 1990:148). The spurious tone has the shape of [A], its presence is obligatory for phonological reasons and it always occupies the final position. It follows that the final bimoraic syllable of the structure in (29a) is [C-ea] which, as seen above, becomes [C-aa] as in (29b). Because, as Hyman and Katamba suggest, such elision and vowel lengthening are post-lexical processes, the elision of the final [-E] occurs at the phonological component of the grammar. Therefore, [-E] is underlyingly present in the syntax and it receives its interpretation at LF, though phonologically absent.

Moreover, the presence of [-E] in (26) is indirectly confirmed by the fact that, cross linguistically in other Bantu languages lacking the final spurious tone [-A], the combination of the Causative+Perfective morphemes yields a structure ending in [-E], as illustrated in the following Hyman's (2003: 77-79) examples from Nyakyusa (30a-b) and Tonga (30c-d) that subsume a similar verbal template.

(30)   V-stem   Causative   Causative+Perfective

       a. sat- 'be in pain'   -sas-į- 'give pain'   -sas-įįs-į- [sas-s-y-e]

       b. gel- 'measure'   -ges-į- 'try'   -ges-įįs-į- [ges-įįs-y-e]

       c. jal- 'close'   -jaz-į- 'make close'   -jaz-iz-į- [jaz-iz-y-e]

       d. bez- 'carve'   -bez-į- 'make carve'   -bez-ez-į- [bez-ez-y-e]

All of this suggests that, in these other Bantu languages, the absence of the obligatory final spurious tone [A] leaves the structure intact with Final Vowel [-E], whereas, in Luganda, the presence of the obligatory spurious tone triggers a vowel coalescence process with the consequent elision of the final [-E].

Similar reasoning can be applied to explain the phonological absence of Final Vowel [-E] from the Perfective passive form. As stated above, the presence of the final spurious [A] tone is obligatory when the passive morpheme combines with a Perfective verb. Moreover it is plausible to assume that phonologically the prohibition against having two contiguous [-high] vowels, i.e., [-E] and [A], holds also for the Passive verbs. It follows that, as in the case of the Causative, these two factors determine the elision of [-E] at PF. Similarly to the examples in (30), languages that do not have a final obligatory spurious tone maintain Final Vowel [-E] in the passive Perfective form, as suggested by the examples in (1-3) above.

4. Conclusion

This paper demonstrates that the verbal suffix [Y-E] is bi-morphemic in nature, arguing that [-Y] is a Perfective morpheme while [-E] is a functional suffix indicating 'a change of state'. Furthermore, the data analysis presented here suggests that Final Vowel [-A] is a default marker, a phonological filler, used to satisfy phonological constraints. I argue that the different functions of the markers [-Y], [-A] and [-E] explain their distribution and their distribution across the Indicative, the Subjunctive and the Imperative moods.

To summarize, my analysis shows the following distributions for the three suffixes. In the Indicative, Perfective [-Y] surfaces always with Final Vowel [-E], but [-Y] is in complementary distribution with Final Vowel [-A] that surfaces as a default vowel when the verb is in a non-Perfective aspect. The aspectual contrast between Perfective and non-Perfective is reflected in the complementary distribution of [-Y] and [-A].

The Final Vowel [-E] is found in both in the Indicative and in the Subjunctive moods. The data analysis shows that in both moods [-E] is found in those linguistic contexts that mark a change of state. Morphologically [-E] and [-A] can never surface together, e.g., *[EA], in the Subjunctive nor the Indicative mood. The default vowel [-A] is never found in the Subjunctive and because of the complementary distribution between [-Y] and [A], [E] is the only final ending in the Perfective Indicative. Moreover, as seen in (3.4) phonologically Final Vowel [E] undergoes a process of elision in the presence of an [-high] vowel, like [-A].

I further demonstrates that Final Vowel [-A] is a default maker. Its presence across the Indicative and Imperative mood is determined by Luganda phonological language constrains. Because of its default nature the presence of [-A] in the Imperative does not constitute a counterexamples of what said relative to the distribution of the final [E] in the contexts of instructional language. 2nd singular Imperative forms are bare forms and negative Imperative forms do not express a change of state and therefore they do not require the presence of Final Vowel [-E].

To conclude, the analysis of the final verbal markers [-Y], [-E] and [-A] as three different markers has made possible to explain and understand their distribution across the Indicative, Subjunctive and Imperative mood.

Appendix

List of abbreviations

APPL	Applicative
CAUS	Causative
CP	Complementizer phrase
IP	Information phrase
NCP	Noun class pronoun
NEG	Negative
PASS	Passive
PFV	Perfective
PST	Past
REL	Relative
TSit	Time of situation
TT	Topic time
TU	Time of utterance
VP	Verb phrase

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