# THE VERBAL MORPHOLOGY AND PHONOLOGY OF ASANTE TWI[*]

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## 1. Introduction

This paper presents an analysis of the verbal morphology and associated phonological processes in Asante Twi, a member of the Akan group of languages/dialects spoken in Ghana and Côte d'Ivoire, which belongs to the Nyo subgroup of the Kwa language family (Lewis 2009). There has been considerable interest in Akan in the theoretical literature, largely due to some peculiarities in the tense/aspect system which will be addressed later in this paper. However, the verbal morphology and phonology have been given relatively little attention. In this paper I show that the verbal morphology exhibits a number of interesting properties including tonal marking of tense/aspect categories – the latter having been largely ignored or misrepresented in the previous literature.

## 2. Background on Akan and Asante Twi

The most well-known of the Akan dialects are Asante Twi, Akuapem Twi, and Fante. The name 'Twi' is often used to refer to the Asante and Akuapem dialects to the exclusion of Fante; hence it is not always clear which dialect is intended when a particular claim is made about 'Akan' or 'Twi'. There is a tendency in the literature to describe all three of the major Akan dialects together, which has a confounding effect whenever tone is relevant, since some of the most significant differences among these dialects are tonal. Relatedly, many sources present examples in the standard Akan orthography, which does

not mark tone, so tone is often omitted. In this paper, I focus on only one dialect (Asante) and I will depart from the conventional use of the Akan orthography in order to mark tone in my examples. All examples are from Asante Twi and are from my own notes, except where specified.[1]

The most thorough existing descriptions of the verbal morphology are found in Dolphyne 1965, 2006. The latter provides partial verb paradigms and a description of the phonology and morphology of three Akan dialects, but it does not give a full morphological analysis of the verbal tense/aspect system. There are some discrepancies between what Dolphyne 2006 reports and what my own consultants produce in some areas of the morphology and phonology, some of which I point out below. It is not entirely clear what accounts for these differences, but some possibilities include interspeaker variation (perhaps based on a generational difference) and the fact that Dolphyne simultaneously describes three Akan dialects while my focus is solely on Asante Twi. Other resources include Boadi 2008, which gives a partial analysis of the verbal morphology, and the discussion of Akan morphology and/or phonology found in Schachter and Fromkin 1968, Essilfie 1986, Osam 1994, Saah 1994, Dolphyne 1996, Ofori 2006a,b, and Stump 2009.

Asante Twi, like other Akan dialects, has two tones, High (H) and Low (L) (in this paper, H is marked by an acute accent (á), and L is marked by a grave accent (à); downstep is marked by a superscripted exclamation mark ($^!$á)).

The following verb root shapes are attested in Asante Twi (where C = consonant, V = vowel, R = sonorant consonant, G = glide, and O = obstruent): CV H, CVR(V) HL, CVR(V) LH, CVV LH (of which those whose first vowel is round surface as [CGV] due to a Glide Formation rule, with accompanying tone changes, while the others surface as [CVV]; this will be discussed further below), and CVOV LH. Dolphyne (1996) identified a number of 'root types' (for Akan, rather than Asante Twi specifically), which divided the root shapes into separate categories based on their behavior in different tense/aspect categories: CV H, CV L, Tone Group 1 (which consists of CVR(V) LL and CVR(V) HL verbs), Tone Group 2 (which consists of CVR(V) LH, CCV LH, and CVV LH verbs), and Tone Group 3 (which consists of CVOV LH verbs). I depart from Dolphyne (1996) in that I have no evidence for CV L verbs in my data, nor for CVR(V) LL verbs, and I do not make use of the concept of 'tone groups'. Rather, I will demonstrate how grammatical tones and lexical tones interact straightforwardly via regular phonological rules of the language to produce the surface tone patterns regardless of root shape. Therefore, although

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[1] This study is based on data from two young people (18-34; KD – male, EA – female), both native speakers of Asante Twi, and both having exposure to the Akuapem dialect. Data in this paper are from KD except where noted.

in each tense/aspect category described below I will provide examples of verbs with each of the shapes mentioned earlier, these should not be taken as significant categories in the grammar.

## 3. Asante Twi verbal morphology

In this section I provide data showing how each verb type is manifested in each tense/aspect category (note that I am treating [CGV] LH and [CVV] LH as different types for this purpose, even though they are both underlyingly /CVV/). In order to show the tone of the verb clearly, each verb is followed by an object since there is a Final Lowering rule that changes H tones to L in utterance-final position (this rule complicates the analysis of the verbal tone unless an object is present to 'protect' the verb from its effect). The tense/aspect categories are presented in groups based on the type of morpheme used to mark them: prefixes vs. suffixes and/or H vs. L tones. Where relevant, I will introduce regular phonological processes that account for the surface forms of the different verb types in a given category. For each verb, I give four examples – one with a H-toned subject (the name 'Esi'), one with a L-toned subject (the name 'Yaw'), one with a H-toned pronominal subject (2sg *wó*, 2pl *mó*, or 3pl *ómó*), and one with a L-toned pronominal subject (1sg *mì*, 1pl *yè*, 3sg human *ɔ̀*, or 3sg non-human *ɛ̀*) (the difference is significant since, as will be seen in the examples, in some tense/aspect categories, verbs have different tone patterns depending on the underlying tone of the subject, and in some cases the tone of the subject is altered depending on the tense/aspect).

**3.1 Categories with no tone marking on the verb root.** The Habitual is not marked by any tone, or by any segmental prefix or suffix. Thus, the Habitual reflects the underlying form of verb roots more straightforwardly than any other tense/aspect category. Examples are given in (1) (note: underlining indicates nasality).

(1)     a. CV H

       ésí tɔ́ pèn              'Esi buys pens'
       mó tɔ́ pèn             'You pl. buy pens.'

       yàw tɔ́ pèn           'Yaw buys pens.'
       yè tɔ́ pèn            'We buy pens.'

    b. CVR(V) HL

       ésí nôm ìnsyù         'Esi drinks water'
       wó nôm ìnsyù        'You drink water.'

       yàw nôm ìnsyù       'Yaw drinks water.'
       mì nôm ìnsyù         'I drink water.'

    c. CVR(V) LH

       ésí dàné nè hɔ̲̂       'Esi turns herself.'
       mó dàné mɔ̀ hɔ̲̂     'You pl. turn yourselves.'

       yàw dàné nè hɔ̲̂     'Yaw turns himself.'
       mì dàné mì hɔ̲̂      'I turn myself.'

    d. CGV LH (/CVV/)

       ésí ꜜbwá yàà        'Esi helps Yaa.'
       wó ꜜbwá yàà        'You help Yaa.'

       yàw bwá yàà        'Yaw helps Yaa.'
       mì bwá yàà         'I help Yaa.'

    e. CVV LH

       ésí kàé kòfì         'Esi remembers Kofi.'
       mó kàé kòfì        'You pl. remember Kofi.'

       yàw kàé kòfì       'Yaw remembers Kofi.'
       ɔ̀ kàé kòfì         'He remembers Kofi.'

f. CVOV LH

| | |
|---|---|
| ésí bìsá àsɛ̀m | 'Esi asks something.' |
| wó bìsá àsɛ̀m | 'You ask something.' |
| | |
| yàw bìsá àsɛ̀m | 'Yaw asks something.' |
| ò bìsá àsɛ̀m | 'He asks something.' |

The forms in (1)d exhibit Glide Formation, which deletes the mora belonging to a labial (round) vowel, changing it to [w] when it precedes another vowel within the word. The rule is schematized below.

(2)　　Glide Formation

$$\mu \rightarrow \varnothing \qquad \mu \qquad \qquad ]_{word}$$

$$\underset{|}{\underset{X}{\neq}} \qquad \quad \underset{|}{\overset{|}{X}}$$

[labial]
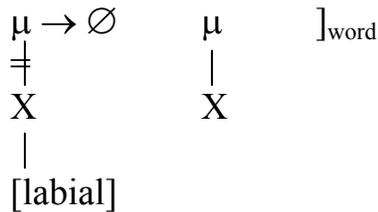
There are several arguments for assuming that this verb's underlying form is /boa/ and that Glide Formation applies to it. First, as we will see later, Glide Formation applies productively across the language, in some cases resulting in alternations, so the rule is independently motivated (and as will be discussed later, this verb does surface as [boa] in the past tense). Second, assuming /boa/ as the underlying form of the root helps us to understand its otherwise anomalous tone pattern. There are no verbs with a consistent [ˈH] tone pattern, suggesting that there is no group of /ˈH/ verbs. There are, however, LH verbs. The tone pattern on this verb makes sense if we assume that it is underlyingly LH. Elsewhere in the language, contour tones generally occur only where there are two moras; as also observed by Dolphyne (2006: 66), there are no rising tones observed on syllables with only a short vowel in the rime. The verb 'help' can be made consistent with this generalization if we assume that it is underlyingly bimoraic, i.e., /boa/ rather than /bwa/. In this analysis, the L tone is underlyingly linked to the first mora, which is lost when the /o/ undergoes Glide Formation. This leaves the L tone 'floating', and this L is then manifested as a downstep on the following H tone. A sample derivation for this verb is given in (3) (a circle around a tone indicates a floating tone).

(3)    Derivation of *wó ˈbwá yàà*

<div align="center">

wo boa yaa          →          wo bwa yaa
  |  ||  ∧                         |   |  ∧
μ μ μ μμ    Glide Formation    μ   μ μμ
 |  ||  ∨                           |   |  ∨
H  LH  L                         H(L)H  L

</div>
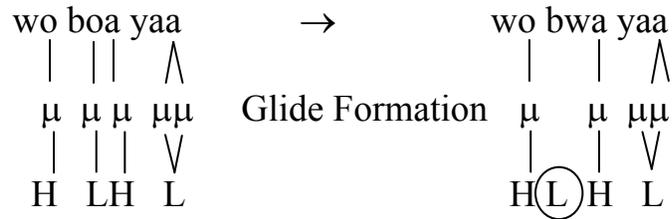
The ˈH tone pattern occurs on this verb anytime it is preceded by a H tone (either a H-toned subject or a H-toned prefix, such as the Future prefix to be discussed later). No downstep is evident in the forms *yàw bwá yàà* or *mì bwá yàà* because the subjects are L-toned, but I assume that there is a floating L tone at some point in the derivation of these forms as well; this L is either merged with the preceding (linked) L tone or else it remains until the end of the derivation but has no phonetic effect since it does not occur between two H tones.

A second rule that applies in the data above is ATR Harmony (4), which changes a [-ATR] vowel in a prefix to [+ATR] when the first vowel of the stem[2] is [+high, +ATR]. Notice that in (1)f, the 3sg pronoun surfaces as [o] rather than [ɔ]. This is due to the [+ATR] vowel in the first syllable of the verb stem *bisa*.

(4)    ATR Harmony

<div align="center">

V ]pfx          stem[ V
      ⌐-----------------⌐
[-ATR]            [+ATR]

</div>
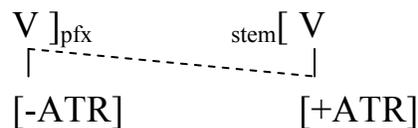
One point about ATR Harmony that is relevant to the data being discussed in this paper is that the [+ATR] counterpart of /a/ is /e/. Dolphyne treats the [+ATR] low vowel as being distinct from /e/ (in Twi but not in Fante), but they are indistinguishable in my consultants' speech. A table showing the [-ATR] vowels and their [+ATR] counterparts is shown in (5).

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[2] Note that 'stem' refers to the 'stem of attachment' for the target prefix. I am assuming that words are built from the inside out, such that the stem of attachment for a particular prefix includes the root plus any affixes already attached to the root. This is what accounts for the fact, to be discussed below, that ATR harmony applies iteratively from the root into a prefix, and then into another prefix to its left.

(5)     [-ATR]      [+ATR]

    a           e
    ɛ           e̩
    ɪ           i
    ɔ           o
    ʊ           u


ATR Harmony is an iterative rule, applying to the vowels in any number of prefixes (whether subject prefixes or tense/aspect markers). For example, in the immediate future form *mó ò-bè-bìsá àsèm* 'you pl. are about to ask something', the [+ATR] value of the /i/ in *bisa* spreads leftwards through the prefix /bɛ̀-/ (changing it to [bè]) and the progressive prefix (which is realized here as *ò-*), all the way to the 2pl pronoun /mɔ́/ (changing it to [mó]). Note, however, that the rule will not apply to a prefix vowel that is followed by a [+ATR] vowel within the same prefix. In particular, the 3pl subject pronoun invariably surfaces as *ɔ́mó*; its initial, [-ATR] vowel never harmonizes with the final, [+ATR] vowel. This follows from the requirement that the triggering vowel be part of the stem. See Dolphyne (2006) for further discussion of ATR harmony; note, however, that rather than the IPA symbols being used here, Dolphyne uses the vowel symbols from the Akan orthography, modified with diacritics (the orthography has only seven vowels, using <e> for IPA [e] and [ɪ], and <o> for [o] and [ʊ]).

The negative habitual is also not marked with a tone on the root; it consists of a regular habitual form plus the negative prefix /ǹ-/. Examples are given below.[3]

(6)     a. CV H


        ésí ń-ˈtɔ́ pɛ̀n       'Esi doesn't buy pens.'
        wó ń-ˈtɔ́ pɛ̀n       'You don't buy pens.'

        yàw ǹ-tɔ́ pɛ̀n       'Yaw doesn't buy pens.'
        mì ǹ-tɔ́ pɛ̀n        'I don't buy pens.'

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[3] Stump (2009: 200) claims that Negative forms of some categories (including the Habitual) have the tone reversed on the root-initial syllable. However, a comparison between the Habitual and Negative Habitual examples in this paper shows that the tone of the root remains the same, modulo the effects of the Tonal Plateauing rule described below.

b. CVR(V) HL

    ésí ń-ˈnôm ìnsyù          'Esi doesn't drink water.'
    wó ń-ˈnôm ìnsyù          'You don't drink water.'

    yàw ǹ-nôm ìnsyù          'Yaw doesn't drink water.'
    mì ǹ-nôm ìnsyù           'I don't drink water.'

c. CVR(V) LH

    ésí ń-dàné nè hɔ̰          'Esi doesn't turn herself.'
    mó ń-dàné mò hɔ̰         'You don't turn yourselves.'

    yàw ǹ-dàné nè hɔ̰         'Yaw doesn't turn himself.'
    mì ǹ-dàné mì hɔ̰          'I don't turn myself.'

d. CGV LH (/CVV/)

    ésí ḿ-ˈmwá yàà          'Esi doesn't help Yaa.'
    wó ḿ-ˈmwá yàà         'You don't help Yaa.'

    yàw m̀-mwá yàà         'Yaw doesn't help Yaa.'
    mì m̀-mwá yàà          'I don't help Yaa.'

e. CVV LH

    ésí ŋ́-ˈkáé kòfì          'Esi doesn't remember Kofi.'
    wó ŋ́-ˈkáé kòfì         'You don't remember Kofi.'

    yàw ŋ̀-kàé kòfì         'Yaw doesn't remember Kofi.'
    mì ŋ̀-kàé kòfì          'I don't remember Kofi.'

f. CVOV LH

    ésí ḿ-ˈmísá àsɛ̀m       'Esi doesn't ask something.'
    wó ḿ-ˈmísá àsɛ̀m       'You don't ask something.'

    yàw m̀-mìsá àsɛ̀m      'Yaw doesn't ask something.'
    mì m̀-mìsá àsɛ̀m       'I don't ask something.'

Notice that tone is transcribed on the nasal prefixes in (6), but in fact their surface tone is predictable: it is identical to the tone of the preceding mora (the negative prefix still needs to have an underlying L tone, however, in order to explain the presence of a downstep before H-initial verbs, as in (6)a and b). This seems to be true throughout the data regardless of whether the nasal syllabifies with the preceding mora (as can be assumed in examples such as *wó ń-ꞌtɔ́ pὲn* 'you don't buy pens') or not (as might be argued for examples such as *yàw ǹ-tɔ́ pὲn* 'Yaw doesn't buy pens'). This can be accounted for via a rule of Nasal Tone Assimilation, given in (7) (T stands for any tone, H or L).

(7)    Nasal Tone Assimilation
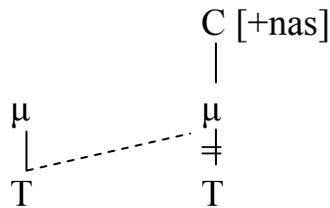


The rule must apply relatively early in the derivation since it feeds another rule, Tonal Plateauing, to be discussed later in the paper.

Another set of phonological processes is at work in the data in (6). First, in (6)d, f, the verbs /boa/ and /bisa/ surface with initial [m]. This is due to a rule of Labial Nasalization, where /b/ becomes [m] after a nasal consonant. This rule is given in (8).

(8)    Labial Nasalization
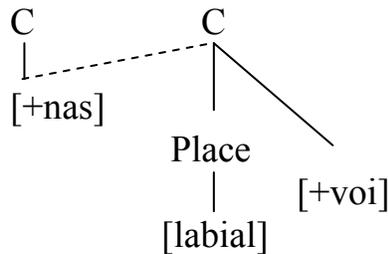


Labial Nasalization is an optional rule; in this paper I have given transcriptions that reflect Labial Nasalization where applicable, but all of these examples have fully grammatical counterparts in which Labial Nasalization does not apply. Note also that Labial Nasalization applies only within words, not across word boundaries. This can be seen in examples such as *èntɔ́ntɔ́m bé bìsá àsὲm* 'Mosquito will ask something' and *èntɔ́ntɔ́m bìsá àsὲm* 'Mosquito asks something', where *\*èntɔ́ntɔ́m mé bìsá àsὲm* and *\*èntɔ́ntɔ́m bìsá àsὲm,*

respectively, are ungrammatical. A final note about Labial Nasalization is that it differs somewhat from the rule described by Dolphyne (2006: 141-142). In the variety of Asante Twi described by Dolphyne, all plosives and affricates (not just labials) become nasals when preceded by a nasal consonant, yielding forms such as *nna* from /nda/ and *ŋŋo* from /ŋgo/ (2006: 1952; tones and glosses not given). Although my consultants do not outright reject forms like these in which nasalization applies to non-labial consonants, they do not volunteer these forms on their own, and they express a strong preference for forms where the rule does not apply to these segments. This is why I have formulated the rule in (8) as applying only to labials. At present I do not have an explanation for the discrepancy between Dolphyne's data and my own except to note that, as Dolphyne points out (2006: 142), the nasalization rule does not apply at all in Fante. Perhaps the rule is in the process of being lost from Asante Twi under influence from Fante (though this would not explain why it still applies to labials).

In addition to Labial Nasalization, there is a regular rule of Nasal Place Assimilation, shown below, where a nasal consonant takes on the place of articulation of a following consonant (9). Via the application of Nasal Place Assimilation plus Labial Nasalization, /n + b/ sequences surface as [mm], as in *mì m̀-mìsá àsὲm* 'I don't ask something' from /mì ǹ-bìsá àsὲm/.

(9)   Nasal Place Assimilation
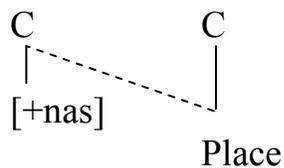


A final rule exhibited in the negative habitual forms above (examples (6)a, b, e, and f) is Tonal Plateauing, by which a L-toned mora surfaces with a downstepped H tone between two H-toned moras. This is seen, for example, in *wó ŋ́-ˈkáé kòfì* 'you don't remember Kofi', where the verb, which underlyingly has a LH tone pattern, surfaces with the tone pattern ˈHH. The rule is schematized in (10).

(10)  Tonal Plateauing
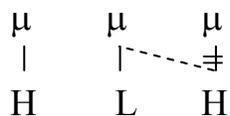
There are a few complications to the Tonal Plateauing rule that need to be addressed here. The first is that, as mentioned earlier, this rule must be preceded by Nasal Tone Assimilation. In addition, it must be assumed that the tone that is dislodged by Nasal Tone Assimilation is deleted or fused with a following identical (linked) tone, and that this also takes place before Tonal Plateauing. The derivation of the form *wó ŋ-ˈkáé kòfì* below shows how the processes interact.

(11)   wo n kae                          *wó ŋ-ˈkáé kòfì*      'You don't remember Kofi.'
       | |   | |
       H L   L H

          *Nasal Tone Assimilation*

          wo n kae
          \/   | |
          H (L) L H

          *Floating L is deleted before a linked L*

          wo n kae
          \/   | |
          H    L H

          *Tonal Plateauing*

          wo n kae
          \/   \|
          H (L) H
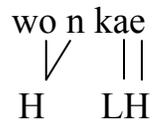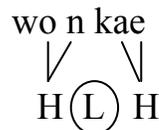
Notice that Nasal Tone Assimilation, and the deletion of the floating L before the linked L, feed Tonal Plateauing; if the L of the /ǹ-/ prefix were still present when Tonal Plateauing applied, the rule would be blocked. The same is true in (6)f.

Another complication is that Tonal Plateauing does not apply to verbs of the CVR(V) LH type (e.g., *dane* 'turn') as can be seen in (6)c above. However, this does not require any modification to Tonal Plateauing if we assume (following, e.g., Ofori 2006a) that the underlying form of verbs of this type does not contain the final vowel. This would mean that the H tone of the verb is floating, and therefore the representation of the verb would not meet the structural requirement for the application of Tonal Plateauing. Under this

analysis, the root-final vowel would have to be inserted by default at the end of the derivation.

A third complication is that there are some tense/aspect categories in which Tonal Plateauing does not apply where it would be expected to apply given the description of the rule in (10). First, it does not apply in habitual, or in the past (to be discussed below). The non-application of Tonal Plateauing in the habitual must be treated as an arbitrary fact about the habitual since there is no phonological element of this aspect category that would explain the failure of the rule.

It should also be noted that the Tonal Plateauing process observed in my data differs from the process described by Dolphyne (2006). Dolphyne proposed a Tone Spreading rule by which the underlying sequence HLH surfaces as [HHᴴH] when the onset of the third syllable is an obstruent; otherwise HLH surfaces as [HᴴHH] (2006: 60). In my data from KD and EA I have not found evidence for any underlying HLH sequences surfacing as [HHᴴH] except in cases where the L tone belongs to the negative nasal prefix. In all of my examples, if Tonal Plateauing applies, the output is [HᴴHH], indicating that the spread of the H tone is always from right to left, never left to right.

We turn now to another tense category in which the verb root is not marked by a grammatical tone: the future. As seen in the examples below, future is marked by the prefix /bɛ́-/.[4]

(12)   a. CV H

|  |  |
|---|---|
| ésí bɛ́-tɔ́ pɛ̀n | 'Esi will buy a pen.' |
| wó bɛ́-tɔ́ pɛ̀n | 'You will buy a pen.' |
|  |  |
| yàw bɛ́-tɔ́ pɛ̀n | 'Yaw will buy a pen.' |
| ɔ̀ bɛ́-tɔ́ pɛ̀n | 'He will buy a pen.' |

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[4] The 1sg subject and future tense are marked by a single portmanteau morpheme, /mɛ́-/. Note that this does not reduce to /mɪ + bɛ́/, because there is no regular phonological process that deletes /ɪ/ between /m/ and /b/, and the output of Labial Nasalization is [mm], not [m].

b. CVR(V) HL

| | |
|---|---|
| ésí bɛ́-nôm ìnsyù | 'Esi will drink water.' |
| wó bɛ́-nôm ìnsyù | 'You will drink water.' |
| yàw bɛ́-nôm ìnsyù | 'Yaw will drink water.' |
| mɛ́-nôm ìnsyù | 'I will drink water.' |

c. CVR(V) LH

| | |
|---|---|
| ésí bɛ́-dàné nè hɔ̰̀ | 'Esi will turn herself.' |
| mó bɛ́-dàné mò hɔ̰̀ | 'You pl. will turn yourselves.' |
| yàw bɛ́-dàné nè hɔ̰̀ | 'Yaw will turn himself.' |
| ɔ̀ bɛ́-dàné nè hɔ̰̀ | 'He will turn himself.' |

d. CGV LH (/CVV/)[5]

| | |
|---|---|
| ésí bɛ́-ˈbwá yàà | 'Esi will help Yaa.' |
| wó bɛ́-ˈbwá yàà | 'You will help Yaa.' |
| yàw bɛ́-ˈbwá yàà | 'Yaw will help Yaa' |
| ɔ̀ bɛ́-ˈbwá yàà | 'He will help Yaa.' |

e. CVV LH

| | |
|---|---|
| ésí bɛ́-ˈkáé kòfì | 'Esi will remember Kofi.' |
| wó bɛ́-ˈkáé kòfì | 'You will remember Kofi.' |
| yàw bɛ́-ˈkáé kòfì | 'Yaw will remember Kofi.' |
| mɛ́-ˈkáé kòfì | 'I will remember Kofi.' |

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[5] The downstep in the forms in (d) is the surface manifestation of the floating L tone that is left behind when the first mora of the root is deleted via the Glide Formation rule described earlier.

f. CVOV LH

ésí bé-ˈbísá àsɛ̀m          'Esi will ask something.'
mó bé-ˈbísá àsɛ̀m          'You pl. will ask something.'

yàw bé-ˈbísá àsɛ̀m         'Yaw will ask something.'
ò bé-ˈbísá àsɛ̀m           'He will ask something.'

Recall from the earlier discussion that Dolphyne (2006) claims that Tone Spreading (here, 'Tonal Plateauing') is rightward when the onset of the third syllable is an obstruent. This means that, for example, the future forms of the verb 'ask' should exhibit righward H tone spreading; indeed, Dolphyne transcribes 'he will ask' as [ò bé-bíˈsá]. In KD and EA's pronunciation, however, the downstep occurs between the first and second syllables in the underlying HLH sequence, i.e., [ò bé-ˈbísá]. Below is a spectrogram and pitch track showing KD's pronunciation of 'Esi will ask something', showing that the downstep occurs on the first syllable of the verb root rather than the second.

(13)   ésí bé-ˈbísá àsɛ̀m          'Esi will ask something.'
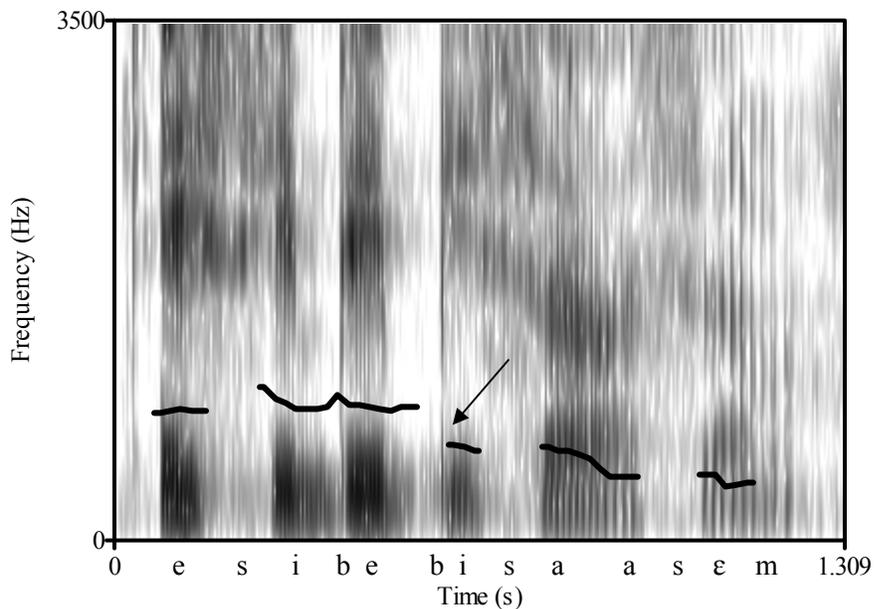


As seen in (14), the negative future does not assign a tone to the verb root, but it does come with a prefix tone that affects the tone of some subject markers (to be discussed below). Like other negative categories such as the negative habitual described above, the negative future is marked with the negative prefix /ǹ-/. In addition, however, the negative future has a floating H tone that

immediately precedes the negative /ǹ-/ marker. The regular (affirmative) future marker /bɛ́-/ is absent in the negative future, so the floating H tone prefix marks both future and negative.

(14)   a. CV H

ésí ń-ˈtɔ́ pèn          'Esi will not buy a pen.'
wó ń-ˈtɔ́ pèn          'You will not buy a pen.'

yàw ńń-ˈtɔ́ pèn         'Yaw will not buy a pen.'
yɛ́ ń-ˈtɔ́ pèn          'We will not buy a pen.'

b. CVR(V) HL

ésí ń-ˈnôm ìnsyù         'Esi will not drink water.'
wó ń-ˈnôm ìnsyù         'you will not drink water.'

yàw ńń-ˈnôm ìnsyù        'Yaw will not drink water.'
ɔ́ ń-ˈnôm ìnsyù         'He will not drink water.'

c. CVR(V) LH

ésí ń-dàné nè hɔ̲         'Esi will not turn herself.'
ɔ́mó ń-dàné ɔ̀mò hɔ̲       'They will not turn themselves.'

yàw ńń-dàné nè hɔ̲        'Yaw will not turn himself.'
yɛ́ ń-dàné yɛ̀ hɔ̲        'We will not turn ourselves.'

d. CGV LH (/CVV/)

ésí ḿ-ˈmwá yàà         'Esi will not help Yaa.'
mó ḿ-ˈmwá yàà          'You pl. will not help Yaa.'

yàw ḿḿ-ˈmwá yàà        'Yaw will not help Yaa.'
mí ḿ-ˈmwá yàà          'I will not help Yaa.'

e. CVV LH

| | |
|---|---|
| ésí ŋ́-ˈkáé kòfì | 'Esi will not remember Kofi.' |
| wó ŋ́-ˈkáé kòfì | 'You will not remember Kofi.' |
| | |
| yàw ŋ́ŋ́-ˈkáé kòfì | 'Yaw will not remember Kofi.' |
| yέ ŋ́-ˈkáé kòfì | 'We will not remember Kofi.' |

f. CVOV LH

| | |
|---|---|
| ésí ḿ-ˈmísá àsὲm | 'Esi will not ask something.' |
| mó ḿ-ˈmísá àsὲm | 'You pl. will not ask something.' |
| | |
| yàw ḿḿ-ˈmísá àsὲm | 'Yaw will not ask something.' |
| ó ḿ-ˈmísá àsὲm | 'He will not ask something.' |

The floating H tone that I propose behaves differently depending on the surrounding tones. If the subject has a final H tone, the floating H is deleted or absorbed, leaving no trace. If the subject has a final L tone, the behavior of the floating H depends on the status of the subject: if subject is a pronoun, the H tone links to the subject, changing its tone. If, on the other hand, the subject is a noun (e.g., a person's name), the H tone associates to the nasal consonant of the negative prefix.

  The derivation of negative future forms in each context is given below. First, (15) shows what happens to a form where the subject has an underlying final H tone: the floating H is deleted or absorbed, and then Nasal Tone Assimilation applies.

(15)   H-toned subject



wo    n-    tɔ          *wó ń-ˈtɔ́ pὲn* 'You will not buy a pen.'
 |     |     |
 H   Ⓗ L    H

*Floating H deleted/absorbed after H*

wo    n-    tɔ
 |     |     |
 H     L     H

*Nasal Tone Assimilation*

```
wo    n-    tɔ
 |    /     |
 H   (L)    H
```
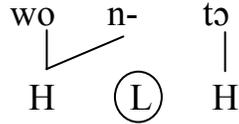
(16) shows the derivation of a form in which the subject is a L-toned pronoun. The floating H tone associates to the subject, causing it to surface with H tone. Nasal Tone Assimilation then applies, resulting in a downstepped H tone on the nasal prefix.

(16)  L-toned pronoun subject

```
yɛ     n-     tɔ              yɛ́ ń-ꞌtɔ́ pɛ̀n   'We will not buy a pen.'
      |      |
(H)    L      H
```
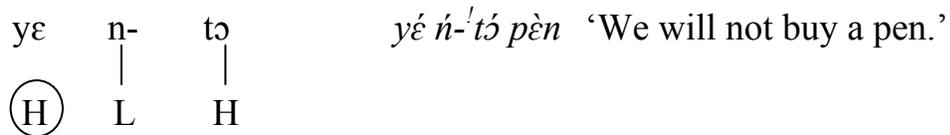
*Floating H links to subject*

```
yɛ      n-     tɔ
  \     |      |
   H    L      H
```

*Nasal Tone Assimilation*

```
yɛ      n-     tɔ
  \    /       |
   H  (L)      H
```
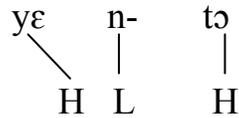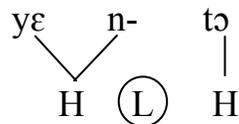
Finally, (17) shows the derivation of a form where the subject is a person's name with an underlying final L tone. The floating H tone prefix associates to the /n/ of the negative prefix, resulting in a falling tone, which causes lengthening of the nasal. Then Nasal Tone Assimilation applies, resulting in a HH tone pattern on the lengthened nasal prefix.

(17)  L-toned subject (name)

```
yaw    n-    tɔ           yàw ńń-ꞌtɔ́ pɛ̀n      'Yaw will not buy a pen.'
 |     |     |
 L    (H)L   H
```
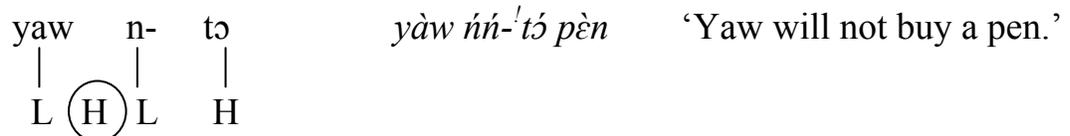
*Floating H links to nasal*

```
yaw     n-    tɔ
 |     /|     |
 L   H  L     H
```
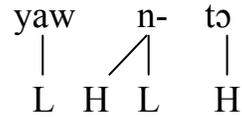
*Nasal is lengthened due to falling tone*

```
yaw    nn-    tɔ
 |     /|     |
 L   H  L     H
```

*Nasal Tone Assimilation*

```
yaw    nn-    tɔ
 |     V      |
 L    H(L)    H
```
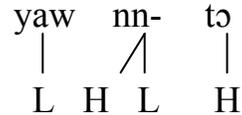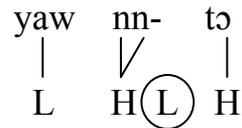
Why does the floating H associate to pronouns but not to L-toned nouns in subject position? There are a number of possible explanations. One is that L-toned nouns have underlying L tones while the 'L-toned' pronoun subjects are really toneless and get their surface L tones by default. Notice that this is the approach I have taken above. One benefit to this approach is that it allows us to avoid having to propose another rule deleting the underlying L of the pronoun (since otherwise an underlying L-toned pronoun with a floating H tone associated to it from the right should yield a rising tone rather than a level H tone). Such a rule would have to be specific to the subject markers, since rising tones are allowed to occur elsewhere in the language. Another possibility is that there is a restriction on H tone association such that the floating H will only associate to something within the same word, assuming (following, e.g., Dolphyne 2006) that pronoun subjects are prefixes and therefore contained within the word.

The negative past is marked by a prefix /a-/, which always has the same tone as the final tone of the subject, followed by the negative prefix /ǹ-/. Examples are given in (18).

(18)　a. CV H

　　　ésí á-ń-ˈtɔ́ pèn　　　　　'Esi didn't buy a pen.'
　　　wá-ń-ˈtɔ́ pèn　　　　　　'You didn't buy a pen.'

　　　yàw à-ǹ-tɔ́ pèn　　　　　'Yaw didn't buy a pen.'
　　　yà-ǹ-tɔ́ pèn　　　　　　 'We didn't buy a pen.'

　　b. CVR(V) HL

　　　ésí á-ń-ˈnôm ìnsyù　　　　'Esi didn't drink water.'
　　　mwá-ń-ˈnôm ìnsyù　　　　'You pl. didn't drink water.'

　　　yàw à-ǹ-nôm ìnsyù　　　　'Yaw didn't drink water.'
　　　wà-ǹ-nôm ìnsyù　　　　　'He didn't drink water.'

　　c. CVR(V) LH

　　　ésí á-ń-dàné nè hɔ̲　　　　'Esi didn't turn herself.'
　　　wá-ń-dàné wò hɔ̲　　　　　'You didn't turn yourself.'

　　　yàw à-ǹ-dàné nè hɔ̲　　　　'Yaw didn't turn himself.'
　　　mà-ǹ-dàné mì hɔ̲　　　　　'I didn't turn myself.'

　　d. CGV LH (/CVV/)

　　　ésí á-ḿ-ˈmwá yàà　　　　'Esi didn't help Yaa.'
　　　wá-ḿ-ˈmwá yàà　　　　　'You didn't help Yaa.'

　　　yàw à-m̀-mwá yàà　　　　'Yaw didn't help Yaa.'
　　　mà-m̀-mwá yàà　　　　　'I didn't help Yaa.'

　　e. CVV LH

　　　ésí á-ŋ́-ˈkáé kòfì　　　　　'Esi didn't remember Kofi.'
　　　wá-ŋ́-ˈkáé kòfì　　　　　　'You didn't remember Kofi.'

　　　yàw à-ŋ̀-kàé kòfì　　　　　'Yaw didn't remember Kofi.'
　　　yà-ŋ̀-kàé kòfì　　　　　　 'We didn't remember Kofi.'

     f. CVOV LH

        ésí é-ḿ-ꞌmísá àsɛ̀m        'Esi didn't ask something.'
        mwé-ḿ-ꞌmísá àsɛ̀m        'You pl. didn't ask something.'

        yàw è-m̀-mìsá àsɛ̀m        'Yaw didn't ask something.'
        yè-m̀-mìsá àsɛ̀m        'We didn't ask something.'

I analyze the tone pattern of the prefix /a-/ as resulting from the prefix having no underlying tone. It is assigned its tone via the Tone Spreading rule in (19), which spreads a tone rightward onto any toneless mora (μ' represents a toneless mora; note that it is crucial to indicate that the target of spreading is toneless, because tone spreading does not apply to any mora that already bears a tone).

(19)   Tone Spreading

$$\mu \quad \mu'$$
$$| \cdots$$
$$T$$
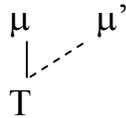
The /a/ also triggers Glide Formation or Vowel Fusion when a vowel precedes it, resulting in predictable surface changes to subject pronouns as exhibited in the data above.

     A final tense/aspect category that is not marked by a grammatical tone on the verb root is the progressive. As shown in (20), progressive forms have a L-toned prefix consisting of a segment that matches the final segment of the subject.

(20)   a. CV H

        ésí ꞌí-tɔ́ pɛ̀n        'Esi is buying a pen.'
        ɔ́mɔ́ ꞌó-tɔ́ pɛ̀n        'They are buying a pen.'

        yàw ẁ-tɔ́ pɛ̀n        'Yaw is buying a pen.'[6]
        mì ì-tɔ́ pɛ̀n        'I am buying a pen.'

---

[6] Note that this and other progressive examples involving the subject 'Yaw' are transcribed as having a L-toned syllabic glide preceding the verb root. Syllabic, tone-bearing glides are not attested elsewhere in the data, so the proper phonological representation of these segments may therefore be a vowel rather than a glide, as in, e.g., *yàw ù-tɔ́ pɛ̀n*. I have transcribed the prefixes as glides here in order to reflect their auditory profile, and to reflect more clearly the fact that they result from a lengthening of the immediately preceding segment.

b. CVR(V) HL

     ésí ˈí-nôm ìnsyù      'Esi is drinking water.'
     wó ˈó-nôm ìnsyù      'You are drinking water.'

     yàw ẁ-nôm ìnsyù      'Yaw is drinking water.'
     ɔ̀ ɔ̀-nôm ìnsyù      'He is drinking water.'

c. CVR(V) LH

     ésí ì-dàné nè hɔ̰́      'Esi is turning herself.'
     wó ò-dàné wò hɔ̰́      'You are turning yourself.'

     yàw ẁ-dàné nè hɔ̰́      'Yaw is turning himself.'
     mì ì-dàné mì hɔ̰́      'I am turning myself.'

d. CGV LH (/CVV/)

     ésí ì-bwá yàà      'Esi is helping Yaa.'
     ɔ́mó ò-bwá yàà      'They are helping Yaa.'

     yàw ẁ-bwá yàà      'Yaw is helping Yaa.'
     mì ì-bwá yàà      'I am helping Yaa.'

e. CVV LH

     ésí ì-kàé kòfì      'Esi is remembering Kofi.'
     wó ò-kàé kòfì      'You are remembering Kofi.'

     yàw ẁ-kàé kòfì      'Yaw is remembering Kofi.'
     mì ì-kàé kòfì      'I am remembering Kofi.'

f. CVOV LH

     ésí ì-bìsá àsɛ̀m      'Esi is asking something.'
     wó ò-bìsá àsɛ̀m      'You are asking something.'

     yàw ẁ-bìsá àsɛ̀m      'Yaw is asking something.'
     mì ì-bìsá àsɛ̀m      'I am asking something.'

The progressive appears to differ across dialects. Dolphyne (2006) states that the prefix [rɛ̀-] is used in Asante, but my consultants instead produce the forms in (20), and they claim that the [rɛ̀-] form is the Akuapem pronunciation. It is also spelled <re-> in the Akan orthography. My analysis of the form produced by my consultants is that the progressive prefix consists of a single L-toned mora. Because the mora is not underlyingly associated with any segmental features, it takes on the quality of whatever segment precedes it via a rule that spreads the entire segment's Root node (i.e., the node in the feature geometry that dominates all of the segment's features) to the empty mora, whether the segment is a consonant or a vowel. The rule is schematized in (21).

(21)   Root Node Spreading

$$\mu \qquad \mu$$
$$| \;\cdots\;\diagup$$
$$\text{Root}$$
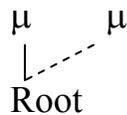
As will be discussed below, this analysis of the progressive as being marked by an empty mora affix is very similar to (and also bears on) Ofori's (2006a,b) analysis of the past suffix.

**3.2 Categories marked by L tone on the verb root.** There is one tense/aspect category that I analyze as being marked by a L tone on the verb root, namely, past. As shown in (22), past forms have a L tone on the first mora of the root, and when an object is present, the final segment of the verb root is lengthened, with a L tone occurring on the latter portion of the lengthened segment.

(22)   a. CV H

        ésí tɔ̀-ɔ́ pɛ̀n          'Esi bought a pen.'
        wó tɔ̀-ɔ́ pɛ̀n          'You bought a pen.'

        yàw tɔ̀-ɔ́ pɛ̀n         'Yaw bought a pen.'
        ɔ̀ tɔ̀-ɔ́ pɛ̀n          'He bought a pen.'

b. CVR(V) HL

ésí nòm-m̀ ìnsyù          'Esi drank water.'
wó nòm-m̀ ìnsyù          'you drank water.'

yàw nòm-m̀ ìnsyù         'Yaw drank water.'
ɔ́ nòm-m̀ ìnsyù           'He drank water.'

c. CVR(V) LH

ésí dàné-è nè hɔ̰̀          'Esi turned herself.'
wó dàné-è wò hɔ̰́          'You turned yourself.'

yàw dàné-è nè hɔ̰́         'Yaw turned himself.'
mì dàné-è mì hɔ̰́          'I turned myself.'

d. CGV LH (/CVV/)

ésí bòá-à yàà           'Esi helped Yaa.'
wó bòá-à yàà           'You helped Yaa.'

yàw bòá-à yàà          'Yaw helped Yaa.'
yɛ̀ bòá-à yàà           'We helped Yaa.'

e. CVV LH

ésí kàé-è kòfì           'Esi remembered Kofi.'
wó kàé-è kòfì           'You remembered Kofi.'

yàw kàé-è kòfì          'Yaw remembered Kofi.'
mì kàé-è kòfì           'I remembered Kofi.'

f. CVOV LH

ésí bìsá-à àsɛ̀m         'Esi asked something.'
wó bìsá-à àsɛ̀m         'You asked something.'

yàw bìsá-à àsɛ̀m        'Yaw asked something.'
mì bìsá-à àsɛ̀m         'I asked something.'

Following Ofori (2006a,b), I analyze the lengthening of the final segment as an empty mora suffix. The suffix takes on the quality of the vowel or consonant to its left via the Root Node Spreading rule described earlier. The past suffix therefore has the same phonological representation as the progressive prefix in my analysis, namely an empty mora linked to a L tone.[7]

When no object follows the verb, the ending *yɛ̀ ~ ìyɛ̀ ~ òyɛ̀* appears along with the lengthening of the final segment shown above. Examples are given below.

(23)   wó tɔ̀ɔ̀yɛ̀     'You bought.'                    wó nòm̀òyɛ̀ 'You drank.'

      wó dànéèyɛ̀ 'You turned.'                        wó bòáàyɛ̀   'You helped.'

      wó kàéèyɛ̀   'You remembered.'                  wó bìsáàyɛ̀ 'You asked.'

Ofori (2006a: 38-44) gives a number of arguments that the source of this ending is not an alternative past tense suffix *-yɛ̀* as was proposed by Dolphyne (2006). Ofori's analysis is that the empty mora of the past suffix becomes /ɪ/ when no object follows the verb, and then the segment /ɛ/ is inserted after the /ɪ/ for reasons of phonological augmentation. The /ɪ/ changes to [y] by Glide Formation, and its mora is preserved via lengthening of the root-final vowel. If the root is consonant-final, a high vowel is inserted after the root (this vowel surfaces as round when the final consonant is labial) before the past suffix. Ofori's rationale for assuming that there is an /ɪ/ at some point in the derivation appears to be the fact that in other dialects of Akan (i.e., Fante and Akuapem), verbs in this context end in *-ɪ* rather than having a lengthened final vowel followed by *-yɛ̀*. This may well be the historical origin of the *-yɛ̀* ending, but modern Asante lacks evidence for the *-ɪ* suffix. I therefore propose that the empty mora suffix is realized on all past affirmative forms (whether followed by an object or not) as lengthening of the root-final segment, and that there is a separate element *-yɛ̀* that is deleted when an object follows the verb.

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[7] Stump gives an alternative analysis of the past suffix as /-a/, claiming (2009: 223) in response to Ofori (2006a) that '…there is no independent motivation for the postulation of floating moras in this language'. However, representing the suffix as /-a/ does not allow for a satisfactory explanation of why the suffix always assimilates to the final segment of the verb root regardless of whether it is a consonant or a vowel. There is no independent process in the language (or, most likely, in any language) that changes /a/ into whatever consonant or vowel precedes it, so one would have to posit an item-specific rule of total assimilation that applies only to the suffix /-a/. It appears that Stump chose /-a/ as the suffix simply because the examples he used involved the verb *bisa* 'ask', which ends in /a/; his analysis fails when verbs not ending in /a/ are taken into account.

Evidence for the floating L tone prefix in the past comes from the fact that verb roots having initial H tone in other forms have initial L tone in the past (e.g., the verb 'bring' in (22)a). This change can be explained by a floating L prefix that associates to the left edge of the verb root via a rule of Grammatical Tone Association (24), replacing the lexical root-initial tone. [8]

(24)   Grammatical Tone Association

$$[_{root} \quad \mu$$

$$T \rightarrow \varnothing$$
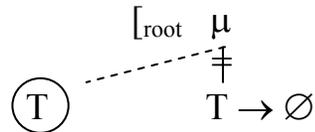
The floating L prefix may also have an indirect effect, in cases where the verb root has underlying initial L tone, precluding a distinct realization of the floating L on the root. In those cases, Glide Formation fails to apply, a fact that could be attributed to the L tone of the past. Notice that the forms of the verb *boa* 'help' in (22)d do not exhibit Glide Formation. Recall that this same verb does undergo Glide Formation in habitual forms such as *wó ˈbwá yàà* 'you help Yaa' in (1)d. It is possible that the rule simply does not apply in this tense. However, it is also possible that Glide Formation is reversed via a rule of Glide Vocalization when the mora that is delinked from the vowel is associated to a L tone marking the past tense. The data do not distinguish between these two possibilities at present, so this is only a hypothetical manifestation of the floating L. It is true that none of the forms in (22) exhibit the Tonal Plateauing rule, but since another tense/aspect category (habitual) is already marked as not undergoing this rule, the failure of the rule to apply in the past is not necessarily attributable to the presence of the floating L and therefore does not provide strong evidence for it.

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[8] Though this rule is similar to the Tone Spreading rule proposed above and can be assumed to apply at roughly the same point in the derivation, the two rules differ in that Grammatical Tone Association replaces the tone on the mora to which it links, while Tone Spreading applies only to toneless moras.

**3.3 Categories marked by H tone.** The perfect and negative perfect are marked by a H tone on the first mora of the verb root. Perfect (affirmative) forms are given in (25). As can be seen in the data, in addition to the tone changes (to be discussed further below), the perfect also has a prefix /a-/, which always surfaces with the same tone as the final tone of the subject.[9]

(25)   a. CV H

       ésí á-tɔ̀ pèn          'Esi has bought a pen.'
       wá-tɔ̀ pèn            'You have bought a pen.'

       yàw à-tɔ́ pèn         'Yaw has bought a pen.'
       wà-tɔ́ pèn            'He has bought a pen.'

    b. CVR(V) HL

       ésí á-nòm ìnsyù      'Esi has drunk water.'
       wá-nòm ìnsyù       'You have drunk water.'

       yàw à-nôm ìnsyù     'Yaw has drunk water.'
       mà-nôm ìnsyù       'I have drunk water.'

    c. CVR(V) LH

       ésí á-dàné nè hɔ̱̂      'Esi has turned herself.'
       mwá-dàné mò hɔ̱̂     'You pl. have turned yourself.'

       yàw à-dáné nè hɔ̱̂     'Yaw has turned himself.'
       wà-dáné nè hɔ̱̂      'He has turned himself.'

    d. CGV LH (/CVV/)

       ésí á-ˈbwá yàà       'Esi has helped Yaa.'
       wá-ˈbwá yàà        'You have helped Yaa.'

       yàw à-bwá yàà       'Yaw has helped Yaa.'
       mà-bwá yàà       'I have helped Yaa.'

---

[9] Notice that this prefix is phonetically identical to the negative past prefix described above. The similarity between these two affixes will be discussed in detail in §4.

e. CVV LH

| | |
|---|---|
| ésí á-ˈkáé kòfì | 'Esi has remembered Kofi.' |
| wá-ˈkáé kòfì | 'You have remembered Kofi.' |
| | |
| yàw à-káé kòfì | 'Yaw has remembered Kofi.' |
| yà-káé kòfì | 'We have remembered Kofi.' |

f. CVOV LH

| | |
|---|---|
| ésí é-ˈbísá àsèm | 'Esi has asked something.' |
| wé-ˈbísá àsèm | 'You have asked something.' |
| | |
| yàw è-bísá àsèm | 'Yaw has asked something.' |
| yè-bísá àsèm | 'We have asked something.' |

I analyze the perfect as having a H tone prefix that associates to the leftmost mora of the verb root. The clearest evidence for this prefix comes from forms where the subject has final L tone in (25)a-f above. As seen in those examples, verbs that otherwise have an initial L tone have initial H in the perfect when the subject is L-toned. Forms where the subject has H tone are a bit more complicated due to the application of some rules to be described below.

To account for the tone of perfect verbs after H-toned subjects, we need a rule of Perfect Polarity (26), which applies after Tone Spreading and feeds Plateauing. This rule changes a H to L when it immediately follows another H linked to the perfect prefix /a-/.

(26)   Perfect Polarity

$$[_{\text{Perf}} \quad \text{a-}$$
$$\mid$$
$$\mu \qquad \mu$$
$$\mid \qquad \mid$$
$$\text{H} \qquad \text{H} \rightarrow \text{L}$$
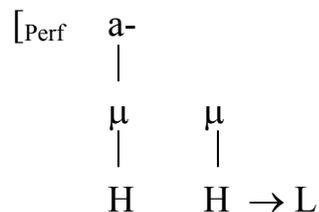
Below is a sample derivation showing perfect forms with a H-toned subject in (27)a and a L-toned subject in (27)b.

(27)   a. H-toned subject
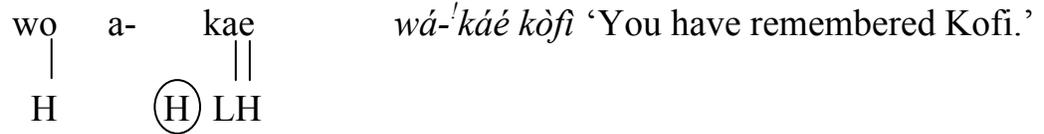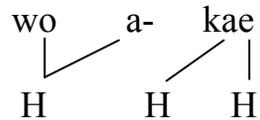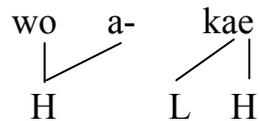
    wo    a-    kae               *wá-ˈkáé kòfì* 'You have remembered Kofi.'
     |          ||
    H      (H) LH

*Tone Spreading and Grammatical Tone Association*

    wo    a-   kae
     |   /    /  |
    H    H   H

*Perfect Polarity*

    wo   a-   kae
     |   /    /  |
    H    L   H

*Tonal Plateauing*

    wo   a-   kae
     |   /     \|/
    H  (L)   H

*Vowel Fusion*

    w   a-   kae
      \  /     \|/
    H  (L)   H

b. L-toned subject

    yɛ    a-    kae         *yà-káé kòfì*   'We have remembered Kofi.'
     |          ||
    L     (H) LH

*Tone Spreading and Grammatical Tone Association*

```
yɛ      a-      kae
 |\      /       / |
 |  \  /        /  |
 L       H    H
```

*Vowel Fusion*

```
y       a-      kae
  \    /         \
    \/            \
 L       H
```
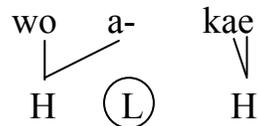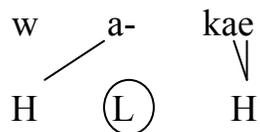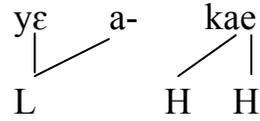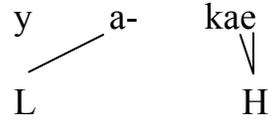
The negative perfect, like the perfect, has a H tone on the initial mora of the verb root. In addition, negative perfect is marked by the negative prefix /ǹ-/ and by lengthening of the final segment, with L tone on the lengthened portion of the segment.

(28)   a. CV H

| | |
|---|---|
| ésí ń-ˈtɔ́-ɔ̀ pèn | 'Esi hasn't bought a pen.' |
| wó ń-ˈtɔ́-ɔ̀ pèn | 'You haven't bought a pen.' |
| | |
| yàw ǹ-tɔ́-ɔ̀ pèn | 'Yaw hasn't bought a pen.' |
| ɔ̀ ǹ-tɔ́-ɔ̀ pèn | 'He hasn't bought a pen.' |

b. CVR(V) HL

| | |
|---|---|
| ésí ń-ˈnôm-m̀ ìnsyù | 'Esi hasn't drunk water.' |
| wó ń-ˈnôm-m̀ ìnsyù | 'You haven't drunk water.' |
| | |
| yàw ǹ-nôm-m̀ ìnsyù | 'Yaw hasn't drunk water.' |
| ɔ̀ ǹ-nôm-m̀ ìnsyù | 'He hasn't drunk water.' |

c. CVR(V) LH

| | |
|---|---|
| ésí ń-ˈdáné-è nè hɔ̰̀ | 'Esi hasn't turned herself.' |
| wó ń-ˈdáné-è wò hɔ̰̀ | 'You haven't turned yourself.' |
| | |
| yàw ǹ-dáné-è nè hɔ̰̀ | 'Yaw hasn't turned himself.' |
| mì ǹ-dáné-è mì hɔ̰̀ | 'I haven't turned myself.' |

    d. CGV LH (/CVV/)

            ésí ḿ-ˈmwá-à yàà        'Esi hasn't helped Yaa.'
            wó ḿ-ˈmwá-à yàà        'You haven't helped Yaa.'

            yàw m̀-mwá-à yàà         'Yaw hasn't helped Yaa.'
            yè m̀-mwá-à yàà         'We haven't helped Yaa.'

    e. CVV LH

            ésí ŋ́-ˈkáé-è kòfì        'Esi hasn't remembered Kofi.'
            wó ŋ́-ˈkáé-è kòfì        'You haven't remembered Kofi.'

            yàw ŋ̀-káé-è kòfì         'Yaw hasn't remembered Kofi.'
            mì ŋ̀-káé-è kòfì         'I haven't remembered Kofi.'

    f. CVOV LH

            ésí ḿ-ˈmísá-à àsèm      'Esi hasn't asked something.'
            mú ḿ-ˈmísá-à àsèm      'You pl. haven't asked something.'

            yàw m̀-mísá-à àsèm       'Yaw hasn't asked something.'
            mì m̀-mísá-à àsèm       'I haven't asked something.'

I treat the lengthening of the root-final segment as resulting from a mora suffix, whose phonological representation and behavior are identical to that of the past suffix described earlier. Therefore all of the arguments cited earlier in favor of a mora as the underlying representation of the past suffix also apply here. The similarity between the past and negative perfect has been the subject of some debate in the literature and will be discussed in depth in the following section.

**3.4 Interim summary.** Having presented all of the verbal categories necessary to exemplify the phonological rules that apply to verbs in Asante Twi, I will now summarize the verbal morphemes and phonological rules before moving on to discuss some important issues arising in the analysis of the verbal morphology. Below is a list of the verbal affixes covered in this paper (see the Appendix for data from categories listed here that were not discussed above; these are marked below with a pound sign).

(29)   Verbal Affixes

| Category | Marker(s) | Example | Gloss |
|---|---|---|---|
| Habitual | ∅ | ò bìsá | 'he asks…' |
| Negative (e.g. habitual) | /ǹ-/ | ò m̀-mìsá | 'he doesn't ask…' |
| Future | /bɛ́-/ | ò bɛ́-ˈbísá | 'he will ask…' |
| Negative future | floating H prefix+neg pfx | ó m̄-ˈmísá | 'he will not ask…' |
| Progressive | L mora pfx | ò ò-bìsá | 'he's asking…' |
| #Negative progressive | identical to neg fut[10] | ó m̄-ˈmísá | 'he isn't asking…' |
| #Immediate future | prog pfx + /bɛ̀-/ | ò ò-bɛ̀-bìsá | 'he's about to ask…' |
| Past | floating L pfx+L mora sfx | ò bìsá-à | 'he asked…' |
| Negative past | /a-/ + neg pfx | wè-m̀-mìsá | 'he didn't ask…' |
| Perfect | /a-/ + floating H pfx | wè-bísá | 'he has asked…' |
| Negative perfect | neg pfx+H pfx+L mora sfx | ò m̀-mísá-à | 'he hasn't asked…' |
| #Imperative | floating L (replaces lexical tones) | bìsà | 'ask…!' |
| #Negative imperative | /mɛ́-/ or /ɛ̀ɛ̀-/ + neg pfx | mɛ́-m̀-mìsá ~ ɛ̀ɛ̀-m̀-mìsá | 'don't ask…!' |
| #Motional 'come and X' | /bɛ̀-/ | ò bɛ̀-bìsá-à | 'he came and asked' |
| #Motional 'go and X' | /kɔ̀-/ | ò kɔ̀-bìsá-à | 'he went and asked…' |

(30) gives a list of phonological rules applying in the data presented in this section. Arrows indicate crucial rule orderings; other rules are not crucially ordered.

(30)   Glide Formation
       Vowel Fusion
       ATR Harmony
       Labial Nasalization
       Nasal Place Assimilation
       Root Node Spreading
       Grammatical Tone Association/
           Tone Spreading
       Perfect Polarity
       Nasal Tone Assimilation
       Tonal Plateauing
       Final Lowering

---

[10] This describes speaker EA's pronunciation. Speaker KD's negative progressive forms are less consistent, and he reports not having any negative progressive forms at all for certain verbs.

In the following section I discuss some theoretical issues arising in the analysis of the verbal morphology, particularly with respect to the past and perfect categories and their negative forms.

## 4. Theoretical issues in the interaction of tense/aspect and negation

The quote from Stump (2009) below summarizes a generalization that has commonly been made about Akan/Twi morphology:

> In Twi, negative verb forms exhibit an apparent reversal in tense morphology: the tense morphology of negative past-tense forms is that of affirmative perfect-tense forms, and that of negative perfect-tense forms is that of affirmative past-tense forms (*mè-bìsá-è* 'I asked', *m-à-bísá* 'I have asked', but *m-à-m̀-bìsá* 'I didn't ask', *mè-m̀-bísá-è* 'I haven't asked').

Similarly, Schachter and Fromkin (1968: 126) claim that 'In the presence of the NEGative morpheme, transformational rules apply which replace deep-structure PAS[t] by surface-structure PER[fect], and vice versa.' Dolphyne (1996: 93) describes the pattern as follows: 'The affixes of the Past and Perfect forms of the verb switch over between the positive and negative forms of the verb.' Essilfie (1986: 70) states that 'the Akan negative *Past tense form* translates the English Negative *Perfect tense* form while the Akan negative *Perfect* form translates the English *negative Past* form.' Similarly, in Saah's (1994: 21) description, a negative past form exhibits 'perfective morphology' while a negative perfect form 'bears the past tense morphology.' Finally, Ofori (2006b: 22) schematizes the situation as follows:

(31)   A Schematic Representation of Similarities in Recent-past and Remote-past Forms[11]

*Recent-Past in the Affirmative (Prefix)*        *Recent-past in Negative (Suffix)*

| a- | | -ɪ; -i; a copy of a preceding segment |

| -ɪ; -i; a copy of a preceding segment | | a- |
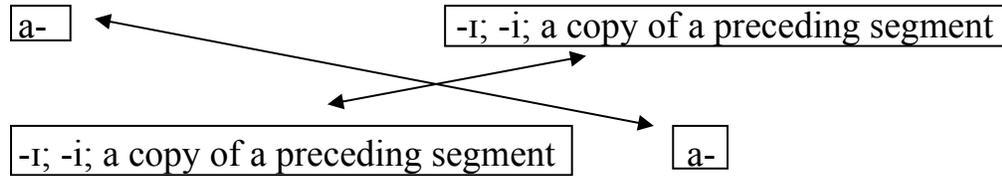
*Remote-Past in the Affirmative (Suffix)*        *Remote-past in the Negative (Prefix)*

While the sources cited above analyze the pattern as a 'replacement', 'reversal', etc.,[12] Ofori (2006a,b) analyzes all four of the affixes in (31) as having the same underlying form, namely, a single mora. He argues that '…the recent-past morpheme and the remote-past morpheme in Akan each [comprise] a single mora, and these moraic units are not inherently specified as either prefixes or suffixes, but are dependent on a Verbal Affix Hierarchy for their distribution as either prefixes or suffixes. The difference in segmental exponence between prefixal and suffixal position is predictable given certain observations about Akan phonology' (2006b: 22).

Ofori's (2006a,b) analysis is that all of the past and perfect markers reduce to empty mora affixes that are unspecified with respect to the side of the stem to which they attach (i.e., they are 'mobile affixes,' to use Noyer's (1994) term). When these moras occur as prefixes, their default segmental realization is [a] due to 'a general constraint in the language prohibiting non-low vowels initially' (Ofori 2006a: 30). When they are suffixes, they result in lengthening of root-final segment (or they surface as [i/ɪ], in case no object follows the verb). Ofori (2006a: 25) proposes a Verbal Affix Distribution Hierarchy, reproduced in (32), which accounts for the position of the affixes.

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[11] Note that what I have been calling perfect is called 'Remote-past' in Ofori's analysis. I use the term 'perfect' because this aspect marking is independent of tense. It can be used in the future, for example: *ɔ bɛ ꞌbá nɔ ná **m à-wɔ fùfù*** 'By the time he comes, I will have pounded fufu,' where the bolded portion is identical to *m à-wɔ fùfù* 'I have pounded fufu.'

[12] Osam (1994: 89) uses the term 'criss-crossing', but in his analysis the similarities between the forms are due to historical change and are not explained in the synchronic grammar.

(32)   Negative morpheme          *(strictly verb-root initial) >>*

       Recent-past mora           *(normally prefixal but must be verb-root edge-*
                                  *sharing so suffixing in the negative) >>*

       Remote-past mora           *(normally suffixing, but prefixing in the negative*
                                  *for avoidance of homophony)*

The interaction of these constraints results in the perfect marker, which is normally a prefix, becoming a suffix when the negative prefix is present in order to stay adjacent to the root. The past marker, which is normally a suffix, becomes a prefix in the negative in order for the form not to be homophonous with the negative perfect. Once the position of the mora is determined, the quality of the segment associated to it follows from what Ofori argues are regular phonological principles of the language: first, that an empty mora in suffix position will get its segmental features from the root-final segment when an object follows the verb (otherwise it becomes -ɪ or -i by default), and second, that the default realization of a featureless verb-initial mora is [a].

    As I have argued above, Ofori's (2006a,b) analysis of the past and negative perfect suffixes as empty moras does have significant advantages over alternative analyses, and I have adopted it here. However, other aspects of Ofori's analysis are not compatible with the data I have presented in this paper. There are are at least three major problems with Ofori's account. The first is that, contrary to Ofori's claim, [a] is not the default realization of a verb-initial vowel – at least not in the dialect of Asante Twi under discussion here. Recall that the progressive is marked by a prefixal segment whose features come from the final segment of the subject. I analyzed the progressive prefix as an empty mora, just like the past and negative perfect suffixes, since its behavior is the same (i.e., it exhibits total assimilation to the segment to its left). If this is indeed the correct analysis of the progressive, then we can see that the default realization of a verb-initial vowel is not [a]; rather, when an empty mora precedes the verb, the segmental features are filled in by the same Root Node Spreading rule that supplies segmental features to the past and negative perfect suffixes. Hence, the [a-] prefixes seen in the perfect and negative past cannot be empty moras underlyingly; rather, they must be represented as /a-/.

    A second problem for Ofori's account is that the /a-/ prefixes and mora suffixes do not have the same tones. The mora suffixes always have L tone, while the /a-/ prefixes have alternating surface tones. Thus, the mora suffixes are best analyzed as having an underlying L tone, while the prefixes are underlyingly toneless. Hence they could not all reduce to a single underlying form even in the absence of the vowel quality problem discussed above.

A third problem is that Ofori's account relies on homophony avoidance. This in itself is problematic *a priori* only if one accepts arguments made elsewhere against homophony avoidance as a property of synchronic grammars (see, e.g., Lass 1980, Gessner & Hansson 2004, Blevins & Wedel 2009, Mondon 2009, Paster to appear[13]). But it is especially problematic as an analysis of Asante Twi because the hypothetical homophonous forms that Ofori's analysis is designed to avoid would actually not be truly homophonous in any case, due to the tonal properties of the perfect aspect. Because his analysis ignores tone, Ofori assumes that if the negative past were formed with a suffix rather than a prefix, it would be homophonous with the negative perfect. But as will be shown below, once tone is taken into account, this is shown not to be the case.

To refresh the reader's memory, below are examples representing the four verbal categories of interest (recall that the prefix *a-* surfaces as [e] with this verb due to ATR harmony).

(33)   a. Past

        wó bìsá-à àsɛ̀m        'You asked something.'
        mì bìsá-à àsɛ̀m        'I asked something.'

    b. Perfect

        wé-ˈbísá àsɛ̀m        'You have asked something.'
        yè-bísá àsɛ̀m        'We have asked something.'

    c. Negative past

        mwé-ḿ-ˈmísá àsɛ̀m        'You pl. didn't ask something.'
        yè-m̀-mìsá àsɛ̀m        'We didn't ask something.'

---

[13] The references cited here deal primarily with the role of homophony avoidance in blocking sound change rather than in its potential effects in affixation. However, as pointed out by Paster to appear, phonologically driven morphological homophony avoidance would be analyzed using the same anti-homophony mechanisms that have been proposed for phonology, so if it is successfully argued against as a phonological constraint then it should not play a role in morphology either.

      d. Negative perfect

          mú ḿ-ˈmísá-à àsɛ̀m       'You pl. haven't asked something.'
          mì m̀-mísá-à àsɛ̀m        'I haven't asked something.'

Suppose that the past forms in (33)a above underwent simple negative affixation to form the negative past. We would expect our hypothetical regular negative past forms to be \*wó ḿ-ˈmísá-à àsɛ̀m 'you didn't ask something' and \*mì m̀-mìsá-à àsɛ̀m 'I didn't ask something'. Notice that while the form with the pronoun 'you' would be identical to the corresponding negative perfect form in (33)d, the form with 'I' would not be identical to its corresponding negative perfect form; the tone of the verb root differs. This is because, as discussed earlier, the negative perfect (like the perfect) is marked by a H tone on the first mora of the root. Therefore, an account relying on homophony avoidance to explain why the negative past is formed with a prefix rather than a suffix does not work for all of the data.

     A similar problem afflicts Stump's (2009) reanalysis, which is based on data from Dolphyne (2006). Stump proposes two abstract tense categories labeled 'tense$_1$' and 'tense$_2$'. Tense$_1$ is marked by a suffix; tense$_2$ is marked by a prefix. There are 'rules of semantic interpretation whose construal of the properties "tense$_1$" and "tense$_2$" in the interpretation of a given verb form is sensitive to whether this form is associated with the property "negative"' (Stump 2009: 221). So, a tense$_1$ form (i.e., a verb with a lengthened final segment) in the absence of a negative marker (or feature) is interpreted as a past form, while the same verb form in the presence of the negative will be interpreted as a (negative) perfect form. Similarly, a tense$_2$ form (i.e., a verb with the prefix *a-*) will be interpreted as a perfect form in the absence of the negative; if the negative is present, the same verb form will be interpreted as a (negative) past form. The problem for such an analysis is that it fails to account for tone. As described above, perfect is consistently marked by a H tone in both the negative and affirmative forms. Stump acknowledges the tonal complication but explains it away by claiming (as I mentioned earlier in describing the habitual) that some negative forms have the opposite tone from their corresponding affirmative forms (presumably this refers only to the initial tone of the verb root, since we do not observe any tonal alternations on non-initial moras in the root). This claim cannot be refuted by looking at other tense/aspect categories since Stump's claim extends only to 'some' categories, but it is worth reiterating that Stump does claim that there is a tonal reversal between the habitual and negative habitual, and that this claim is incorrect for Asante Twi.

     Given that neither Ofori's analysis nor Stump's reanalysis is successful, is there any possible analysis that both accounts for the data and treats the

similarity between the past/negative perfect suffixes and the perfect/negative past prefixes as significant rather than arbitrary? Of course it is possible to analyze each of these four categories as having its own unique morphology so that, for example, the perfect prefix *a-* is a distinct formal object from the negative past prefix *a-* that happens to have the same phonological shape. However, this approach seems unsatisfying in light of the behavior of the past and negative perfect suffixes, since as discussed above, both are analyzable as floating moras and have a *-yè* ending that is deleted when an object follows the verb.[14]

I propose a variant on Stump's (2009) analysis where the abstract 'tense$_1$' vs. 'tense$_2$' distinction is responsible for the segmental morphology of past and perfect and their respective negative forms, but perfect is also independently marked by a floating H tone prefix. The effect is that there is some redundancy in the exponence of aspectual features on the verb, since, for example, the presence of the tense$_2$ prefix *a-* in the absence of the negative marker is sufficient to indicate perfect aspect, but this verb will also bear a H tone on the root-initial mora as another marker of the perfect. Similarly, when the negative marker is present, the tense$_1$ mora suffix marks the verb as perfect, but the H tone on the root-initial mora also indicates perfect aspect.

## 5. Conclusion

In this paper I have described the verbal morphology of Asante Twi. I have shown how the verbal morphology is analyzable as a compositional system in which affixes and their associated meanings combine straightforwardly to produce transparent surface forms, with a few exceptions as noted. I have also proposed an apparently novel analysis of grammatical tone patterns in the verbal morphology that avoids reference to tone classes or lexical groupings. Previous analyses of Asante Twi morphology were discussed, with particular attention to the interaction of tense/aspect and negation, which has featured prominently in the literature. Though future research may produce a superior explanation for

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[14] Osam (1994), rejecting the possibility of a synchronic explanation for these patterns, instead attempts to explain them diachronically. He claims that over time, perfect markers tend to develop into perfective or past markers (following Heine 1993), and that negative forms are more conservative than affirmative forms (following Givón 1979). Based on these generalizations, he suggests a diachronic approach in which an old perfect suffix developed into a completive suffix and a new perfect prefix *a-*; the new perfect and completive had the same negative forms at this stage. After this, 'for some reason currently unclear… the completive developed a new negative form while the perfect maintained the older negative form' (Osam 1994: 94). See Ofori (2006a: 15) for several arguments against Osam's approach.

this complex pattern, I have provided one possible analysis that avoids the shortcomings of previous analyses.

### Appendix

Below are examples of verbs in tense/aspect/mood/polarity categories not presented in the paper.

(34)   Immediate future – progressive prefix (a L-toned mora) followed by the prefix /bɛ̀-/

    a. CV H

        ésí ì-bɛ̀-tɔ́ pɛ̀n         'Esi is about to buy a pen.'
        ɔ́mó ò-bɛ̀-tɔ́ pɛ̀n       'They are about to buy a pen'

        yàw ẁ-bɛ̀-tɔ́ pɛ̀n       'Yaw is about to buy a pen.'
        mì ì-bɛ̀-tɔ́ pɛ̀n        'I am about to buy a pen.'

    b. CVR(V) HL

        ésí ì-bɛ̀-nôm ìnsyù     'Esi is about to drink water.'
        wó ò-bɛ̀-nôm ìnsyù     'You are about to drink water.'

        yàw ẁ-bɛ̀-nôm ìnsyù    'Yaw is about to drink water.'
        mì ì-bɛ̀-nôm ìnsyù     'I am about to drink water.'

    c. CVR(V) LH

        ésí ì-bɛ̀-dàné nè hɔ̲    'Esi is about to turn herself.'
        wó ò-bɛ̀-dàné wò hɔ̲   'You are about to turn yourself.'

        yàw ẁ-bɛ̀-dàné nè hɔ̲   'Yaw is about to turn himself.'
        yɛ̀ ɛ̀-bɛ̀-dàné yɛ̀ hɔ̲   'We are about to turn ourselves.'

d. CGV LH (/CVV/)

|  |  |
| --- | --- |
| ésí ì-bɛ̀-bwá yàà | 'Esi is about to help Yaa.' |
| ɔ́mó ò-bɛ̀-bwá yàà | 'They are about to help Yaa.' |
|  |  |
| yàw ẁ-bɛ̀-bwá yàà | 'Yaw is about to help Yaa.' |
| mì ì-bɛ̀-bwá yàà | 'I am about to help Yaa.' |

e. CVV LH

|  |  |
| --- | --- |
| ésí ì-bɛ̀-kàé kòfì | 'Esi is about to remember Kofi.' |
| wó ò-bɛ̀-kàé kòfì | 'You are about to remember Kofi.' |
|  |  |
| yàw ẁ-bɛ̀-kàé kòfì | 'Yaw is about to remember Kofi.' |
| ɔ̀ ɔ̀-bɛ̀-kàé kòfì | 'He is about to remember Kofi.' |

f. CVOV LH

|  |  |
| --- | --- |
| ésí ì-bɛ̀-bìsá àsɛ̀m | 'Esi is about to ask something.' |
| ɔ̀mó ò-bɛ̀-bìsá àsɛ̀m | 'They are about to ask something.' |
|  |  |
| yàw ẁ-bɛ̀-bìsá àsɛ̀m | 'Yaw is about to ask something.' |
| yè è-bè-bìsá àsɛ̀m | 'We are about to ask something.' |

(35) Imperative (sg.) – floating L tone associates to every mora of the root, eliminating lexical H tones. Final Lowering does not apply to the object.

| | | |
| --- | --- | --- |
| a. CV H | tɔ̀ pɛ́n | 'Buy a pen!' |
| b. CVR(V) HL | nòm ìnsyù | 'Drink water!' |
| c. CVR(V) LH | dànè wò hɔ́ | 'Turn yourself!' |
| d. CGV LH | bwà yàá | 'Help Yaa!' |
| e. CVV LH | kàè kòfí | 'Remember Kofi!' |
| f. CVOV LH | bìsà àsɛ́m | 'Ask something!' |

(36)   Negative imperative - prefix /mɛ́-/ or /ɛ̀ɛ̀-/, followed by the negative prefix
       /ǹ-/

| a. CV H | mɛ́-ń-ꜜtɔ́ pɛ̀n | ~ ɛ̀ɛ̀-ǹ-tɔ́ pɛ̀n | 'Don't buy a pen!' |
|---|---|---|---|
| b. CVR(V) HL | mɛ́-ń-ꜜnôm ìnsyù | ~ ɛ̀ɛ̀-ǹ-nôm ìnsyù | 'Don't drink water!' |
| c. CVR(V) LH | mɛ́-ń-dàné wò hɔ̱́ | ~ ɛ̀ɛ̀-ǹ-dàné wò hɔ̱́ | 'Don't turn yourself!' |
| d. CGV LH | mɛ́-ḿ-mwá yàà | ~ ɛ̀ɛ̀-m̀-mwá yàà | 'Don't help Yaa!' |
| e. CVV LH | mɛ́-ŋ́-ꜜkáé kòfì | ~ ɛ̀ɛ̀-ŋ̀-kàé kòfì | 'Don't remember Kofi!' |
| f. CVOV LH | mɛ́-ḿ-ꜜmísá àsɛ̀m | ~ ɛ̀ɛ̀-m̀-mìsá àsɛ̀m | 'Don't ask something!' |

(37)   'Motional' ('come' and 'go') – L-toned prefixes /bɛ̀-/ and /kɔ̀-/,
       respectively

a. CV H

| ésí ꜛbɛ́-tɔ́-ɔ̀ pɛ̀n | 'Esi came and bought a pen.' |
|---|---|
| wó ꜛbɛ́-tɔ́-ɔ̀ pɛ̀n | 'You came and bought a pen.' |
| | |
| yàw bɛ̀-tɔ́-ɔ̀ pɛ̀n | 'Yaw came and bought a pen.' |
| mì bɛ̀-tɔ́-ɔ̀ pɛ̀n | 'I came and bought a pen.' |
| | |
| ésí ꜛkɔ́-tɔ́-ɔ̀ pɛ̀n | 'Esi went and bought a pen.' |
| wó ꜛkɔ́-tɔ́-ɔ̀ pɛ̀n | 'You went and bought a pen.' |
| | |
| yàw kɔ̀-tɔ́-ɔ̀ pɛ̀n | 'Yaw went and bought a pen.' |
| ɔ̀ kɔ̀-tɔ́-ɔ̀ pɛ̀n | 'He went and bought a pen.' |

b. CVR(V) HL

| ésí ꜛbɛ́-nôm-m̀ ìnsyù | 'Esi came and drank water.' |
|---|---|
| wó ꜛbɛ́-nôm-m̀ ìnsyù | 'You came and drank water.' |
| | |
| yàw bɛ̀-nôm-m̀ ìnsyù | 'Yaw came and drank water.' |
| mì bɛ̀-nôm-m̀ ìnsyù | 'I came and drank water.' |
| | |
| ésí ꜛkɔ́-nôm-m̀ ìnsyù | 'Esi went and drank water.' |
| wó ꜛkɔ́-nôm-m̀ ìnsyù | 'You went and drank water.' |
| | |
| yàw kɔ̀-nôm-m̀ ìnsyù | 'Yaw went and drank water.' |
| ɔ̀ kɔ̀-nôm-m̀ ìnsyù | 'He went and drank water.' |

c. CVR(V) LH

| | |
|---|---|
| ésí bɛ̀-dàné-è nè hɔ̰̂ | 'Esi came and turned herself.' |
| wó bɛ̀-dàné-è wò hɔ̰̂ | 'You came and turned yourself.' |
| yàw bɛ̀-dàné-è nè hɔ̰̂ | 'Yaw came and turned himself.' |
| mì bɛ̀-dàné-è mì hɔ̰̂ | 'I came and turned myself.' |
| ésí kɔ̀-dàné-è nè hɔ̰̂ | 'Esi went and turned herself.' |
| wó kɔ̀-dàné-è wò hɔ̰̂ | 'You went and turned yourself.' |
| yàw kɔ̀-dàné-è nè hɔ̰̂ | 'Yaw went and turned himself.' |
| mì kɔ̀-dàné-è mì hɔ̰̂ | 'I went and turned myself.' |

d. CGV LH (/CVV/)

| | |
|---|---|
| ésí bɛ̀-bwá-à yàà | 'Esi came and helped Yaa.' |
| wó bɛ̀-bwá-à yàà | 'You came and helped Yaa.' |
| yàw bɛ̀-bwá-à yàà | 'Yaw came and helped Yaa.' |
| ɔ̀ bɛ̀-bwá-à yàà | 'He came and helped Yaa.' |
| ésí kɔ̀-bwá-à yàà | 'Esi went and helped Yaa.' |
| wó kɔ̀-bwá-à yàà | 'You went and helped Yaa.' |
| yàw kɔ̀-bwá-à yàà | 'Yaw went and helped Yaa.' |
| mì kɔ̀-bwá-à yàà | 'I went and helped Yaa.' |

e. CVV LH

| | |
|---|---|
| ésí bɛ̀-kàé-è kòfì | 'Esi came and remembered Kofi.' |
| wó bɛ̀-kàé-è kòfì | 'You came and remembered Kofi.' |
| | |
| yàw bɛ̀-kàé-è kòfì | 'Yaw came and remembered Kofi.' |
| yɛ̀ bɛ̀-kàé-è kòfì | 'We came and remembered Kofi.' |
| | |
| ésí kɔ̀-kàé-è kòfì | 'Esi went and remembered Kofi.' |
| wó kɔ̀-kàé-è kòfì | 'You went and remembered Kofi.' |
| | |
| yàw kɔ̀-kàé-è kòfì | 'Yaw went and remembered Kofi.' |
| yɛ̀ kɔ̀-kàé-è kòfì | 'We went and remembered Kofi.' |

f. CVOV LH

| | |
|---|---|
| ésí bɛ̀-bìsá-à àsɛ̀m | 'Esi came and asked something.' |
| mó bɛ̀-bìsá-à àsɛ̀m | 'You pl. came and asked something.' |
| | |
| yàw bɛ̀-bìsá-à àsɛ̀m | 'Yaw came and asked something.' |
| ò bɛ̀-bìsá-à àsɛ̀m | 'He came and asked something.' |
| | |
| ésí kɔ̀-bìsá-à àsɛ̀m | 'Esi went and asked something.' |
| wó kɔ̀-bìsá-à àsɛ̀m | 'You went and asked something.' |
| | |
| yàw kɔ̀-bìsá-à àsɛ̀m | 'Yaw went and asked something.' |
| ò kɔ̀-bìsá-à àsɛ̀m | 'He went and asked something.' |

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