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

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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 (¹á)).

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

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 ñmó), and one with a L-toned pronominal subject (1sg mi, 1pl yɛ, 3sg human ŋ, or 3sg non-human ɛ) (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

<table>
<thead>
<tr>
<th>Esi</th>
<th>Buy pens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esi</td>
<td>mó to pèn</td>
</tr>
<tr>
<td>pl.</td>
<td>‘You pl. buy pens.’</td>
</tr>
<tr>
<td>Yaw</td>
<td>yàw to pèn</td>
</tr>
<tr>
<td>‘Yaw buys pens.’</td>
<td></td>
</tr>
<tr>
<td>We</td>
<td>yè to pèn</td>
</tr>
<tr>
<td>‘We buy pens.’</td>
<td></td>
</tr>
</tbody>
</table>

b. CVR(V) HL

<table>
<thead>
<tr>
<th>Esi</th>
<th>Drink water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esi</td>
<td>èsì nòm insyù</td>
</tr>
<tr>
<td>‘Esi drinks water’</td>
<td></td>
</tr>
<tr>
<td>You</td>
<td>wó nòm insyù</td>
</tr>
<tr>
<td>‘You drink water.’</td>
<td></td>
</tr>
<tr>
<td>Yaw</td>
<td>yàw nòm insyù</td>
</tr>
<tr>
<td>‘Yaw drinks water.’</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>mì nòm insyù</td>
</tr>
<tr>
<td>‘I drink water.’</td>
<td></td>
</tr>
</tbody>
</table>

c. CVR(V) LH

<table>
<thead>
<tr>
<th>Esi</th>
<th>Turn herself</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esi</td>
<td>èsì dàné nè hɔ́</td>
</tr>
<tr>
<td>‘Esi turns herself.’</td>
<td></td>
</tr>
<tr>
<td>You</td>
<td>mó dàné mò hɔ́</td>
</tr>
<tr>
<td>‘You pl. turn yourselves.’</td>
<td></td>
</tr>
<tr>
<td>Yaw</td>
<td>yàw dàné nè hɔ́</td>
</tr>
<tr>
<td>‘Yaw turns himself.’</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>mì dàné mi hɔ́</td>
</tr>
<tr>
<td>‘I turn myself.’</td>
<td></td>
</tr>
</tbody>
</table>

d. CGV LH (/CVV/)

<table>
<thead>
<tr>
<th>Esi</th>
<th>Help Yaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esi</td>
<td>èsí ’bwá yàà</td>
</tr>
<tr>
<td>‘Esi helps Yaa.’</td>
<td></td>
</tr>
<tr>
<td>You</td>
<td>wó ’bwá yàà</td>
</tr>
<tr>
<td>‘You help Yaa.’</td>
<td></td>
</tr>
<tr>
<td>Yaw</td>
<td>yàw ’bwá yàà</td>
</tr>
<tr>
<td>‘Yaw helps Yaa.’</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>mì ’bwá yàà</td>
</tr>
<tr>
<td>‘I help Yaa.’</td>
<td></td>
</tr>
</tbody>
</table>

e. CVV LH

<table>
<thead>
<tr>
<th>Esi</th>
<th>Remember Kofi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esi</td>
<td>èsí kàé kòf</td>
</tr>
<tr>
<td>‘Esi remembers Kofi.’</td>
<td></td>
</tr>
<tr>
<td>You</td>
<td>mó kàé kòf</td>
</tr>
<tr>
<td>‘You pl. remember Kofi.’</td>
<td></td>
</tr>
<tr>
<td>Yaw</td>
<td>yàw kàé kòf</td>
</tr>
<tr>
<td>‘Yaw remembers Kofi.’</td>
<td></td>
</tr>
<tr>
<td>He</td>
<td>só kàé kòf</td>
</tr>
<tr>
<td>‘He remembers Kofi.’</td>
<td></td>
</tr>
</tbody>
</table>
The verbal morphology and phonology of Asante Twi

f. CVOV LH

ésí bisá àsèm  ‘Esi asks something.’
wó bisá àsèm  ‘You ask something.’
yàw bisá àsèm  ‘Yaw asks something.’
ò bisá àsèm   ‘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.

\[
\begin{array}{c}
\mu \\ \downarrow \\
X \\
\end{array} \rightarrow \begin{array}{c}
\emptyset \\ \mu \\
X \\
\end{array}_{\text{word}}
\]

[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 [1H] tone pattern, suggesting that there is no group of /1H/ 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).
Derivation of \textit{wó ‘bwá yàà}

\[
\text{wo boa yaa} \quad \rightarrow \quad \text{wo bwa yaa}
\]

\[
\text{ Glide Formation } \quad \mu \quad \mu \quad \mu \mu
\]

\[
\text{ H L H L } \quad \text{ H L L }
\]

The 'H 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 \textit{yàw bwá yàà} or \textit{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 \textit{bisa}.

\[
\text{(4) ATR Harmony}
\]

\[
\text{V }_{\text{pfx}} \quad \text{stem[ V }_{\text{]} \quad \text{[-ATR]} \quad \text{[+ATR]}}
\]

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).

\(^2\) 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.
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 ˈbɛ-ˈbɪsá ˈasèm ‘you pl. are about to ask something’, the [+ATR] value of the /i/ in bisa spreads leftwards through the prefix /ˈbɛ-/ (changing it to [bɛ]) and the progressive prefix (which is realized here as ˈo-), all the way to the 2pl pronoun /ˈmɔ́/ (changing it to [mɔ]). 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 ɔ́mɔ́; 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 [ɔ] 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 /n̥-. Examples are given below.³

(6) a. CV H

<table>
<thead>
<tr>
<th>CV H</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ėsí n̥-tó pɛn</td>
<td>‘Esi doesn’t buy pens.’</td>
</tr>
<tr>
<td>Wó n̥-tó pɛn</td>
<td>‘You don’t buy pens.’</td>
</tr>
<tr>
<td>Yəw n̥-tó pɛn</td>
<td>‘Yaw doesn’t buy pens.’</td>
</tr>
<tr>
<td>Mi n̥-tó pɛn</td>
<td>‘I don’t buy pens.’</td>
</tr>
</tbody>
</table>

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

éśí ñ-ⁿöm însyù  ‘Esi doesn’t drink water.’
wó ñ-ⁿöm însyù  ‘You don’t drink water.’
yàw ñ-ⁿöm însyù  ‘Yaw doesn’t drink water.’
mì ñ-ⁿöm însyù  ‘I don’t drink water.’

c. CVR(V) LH

éśí ñ-dàné nè hɔ̀  ‘Esi doesn’t turn herself.’
mó ñ-dàné mò hɔ̀  ‘You don’t turn yourselves.’
yàw ñ-dàné nè hɔ̀  ‘Yaw doesn’t turn himself.’
mì ñ-dàné mì hɔ̀  ‘I don’t turn myself.’

d. CGV LH (/CVV/)

éśí m-ᵐwá yàà  ‘Esi doesn’t help Yaa.’
wó m-ᵐwá yàà  ‘You don’t help Yaa.’
yàw m-ᵐwá yàà  ‘Yaw doesn’t help Yaa.’
mì m-ᵐwá yàà  ‘I don’t help Yaa.’

e. CVV LH

éśí ɲ-ʰáé kòfì  ‘Esi doesn’t remember Kofi.’
wó ɲ-ʰáé kòfì  ‘You don’t remember Kofi.’
yàw ɲ-ʰáé kòfì  ‘Yaw doesn’t remember Kofi.’
mì ɲ-ʰáé kòfì  ‘I don’t remember Kofi.’

f. CVOV LH

éśí m-ᵐísá ãsèm  ‘Esi doesn’t ask something.’
wó m-ᵐísá ãsèm  ‘You don’t ask something.’
yàw m-mísá ãsèm  ‘Yaw doesn’t ask something.’
mì m-mísá ãsèm  ‘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-tó pèn ‘you don’t buy pens’) or not (as might be argued for examples such as yáw ń-tó pèn ‘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

\[
C \ [+\text{nas}] \\
\downarrow \\
\mu \\
\downarrow \\
T
\]

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

\[
\begin{array}{c}
C \\
\downarrow \\
[+\text{nas}] \\
\downarrow \\
\text{Place} \\
\downarrow \\
[+\text{voi}] \\
[\text{labial}]
\end{array}
\]

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 èntóntó mé bisá àsèm ‘Mosquito asks something’ and èntóntó bisá àsèm ‘Mosquito will ask something’, where *èntóntó mé bisá àsèm and *èntóntó bisá àsèm,
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 *mĩ m-misâ ãsêm* ‘I don’t ask something’ from /mĩ ŋ-bisâ ãsêm/.

(9) Nasal Place Assimilation

\[
\begin{array}{c}
C \\
[+\text{nas}] \\
\text{Place} \\
C
\end{array}
\]

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 *wô ţ-ţâkē kôfî* ‘you don’t remember Kofi’, where the verb, which underlyingly has a LH tone pattern, surfaces with the tone pattern 1HH. The rule is schematized in (10).

(10) Tonal Plateauing

\[
\begin{array}{lll}
\mu & \mu & \mu \\
\mid & \mid & \mid & \mid & \mid & \mid \\
H & L & H
\end{array}
\]
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 \( wó \, j'-káé \, kófi \) below shows how the processes interact.

\[
\text{Nasal Tone Assimilation}
\]

\[
\begin{array}{c}
\text{wo n kae} \\
\text{\hspace{1cm}}
\end{array}
\]

\[
\begin{array}{c}
\text{H} \quad \text{L} \quad \text{LH}
\end{array}
\]

\[
\text{Floating L is deleted before a linked L}
\]

\[
\begin{array}{c}
\text{wo n kae} \\
\text{\hspace{1cm}}
\end{array}
\]

\[
\begin{array}{c}
\text{H} \quad \text{L} \quad \text{H}
\end{array}
\]

\[
\text{Tonal Plateauing}
\]

\[
\begin{array}{c}
\text{wo n kae} \\
\text{\hspace{1cm}}
\end{array}
\]

\[
\begin{array}{c}
\text{H} \quad \text{L} \quad \text{H}
\end{array}
\]

Notice that Nasal Tone Assimilation, and the deletion of the floating L before the linked L, feed Tonal Plateauing; if the L of the /\dot{n}/ 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
\([HH^1H]\) when the onset of the third syllable is an obstruent; otherwise HLH
surfaces as \([H^1HH]\) (2006: 60). In my data from KD and EA I have not found
evidence for any underlying HLH sequences surfacing as \([HH^1H]\) 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 \([H^1HH]\), 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 /bɛ-/.

\((12)\)

a. CV H

\[
\begin{align*}
esì & \ bɛ-tò \ pɛn & \text{‘Esi will buy a pen.’} \\
wò & \ bɛ-tò \ pɛn & \text{‘You will buy a pen.’} \\
yàw & \ bɛ-tò \ pɛn & \text{‘Yaw will buy a pen.’} \\
ɔ̀ & \ bɛ-tò \ pɛn & \text{‘He will buy a pen.’}
\end{align*}
\]

\(^4\) The 1sg subject and future tense are marked by a single portmanteau morpheme, /mɛ-/.
Note that this does not reduce to /mɪ + bɛ/, because there is no regular phonological process that
deletes /i/ between /m/ and /b/, and the output of Labial Nasalization is [mm], not [m].
The verbal morphology and phonology of Asante Twi

b. CVR(V) HL

ésí bê-nôm insyù  ‘Esi will drink water.’
wó bê-nôm insyù  ‘You will drink water.’
yàw bê-nôm insyù  ‘Yaw will drink water.’
mê-nôm insyù  ‘I will drink water.’

c. CVR(V) LH

ésí bê-dânê nê hɔ  ‘Esi will turn herself.’
mó bê-dânê mò hɔ  ‘You pl. will turn yourselves.’
yàw bê-dânê nê hɔ  ‘Yaw will turn himself.’
ɔ̀ bê-dânê nê hɔ  ‘He will turn himself.’

d. CGV LH (/CVV/)5

ésí bê-lbwá yaà  ‘Esi will help Yaa.’
wó bê-lbwá yaà  ‘You will help Yaa.’
yàw bê-lbwá yaà  ‘Yaw will help Yaa’
ɔ̀ bê-lbwá yaà  ‘He will help Yaa.’

e. CVV LH

ésí bê-lkáé kòfi  ‘Esi will remember Kofi.’
wó bê-lkáé kòfi  ‘You will remember Kofi.’
yàw bê-lkáé kòfi  ‘Yaw will remember Kofi.’
mê-lkáé kòfi  ‘I will remember Kofi.’

---

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.
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 rightward H tone spreading; indeed, Dolphyne transcribes ‘he will ask’ as [ò bé-bìsá]. 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-bìsá]. 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.

\[(13)\]  
\[\text{ésí bé-}^1\text{bísá àsèm}\]  ‘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 /bɛ-/ is absent in the negative future, so the floating H tone prefix marks both future and negative.

(14)  a. CV H

ésí ǹ-tó pèn  ‘Esi will not buy a pen.’
wó ǹ-tó pèn  ‘You will not buy a pen.’

ywáw ǹ́-tó pèn  ‘Yaw will not buy a pen.’
yè ǹ-tó pèn  ‘We will not buy a pen.’

b. CVR(V) HL

ésí ǹ́-nöm insyù  ‘Esi will not drink water.’
wó ǹ́-nöm insyù  ‘you will not drink water.’

ywáw ǹ́-nóm insyù  ‘Yaw will not drink water.’
ò ǹ́-nóm insyù  ‘He will not drink water.’

c. CVR(V) LH

ésí ǹ-dàné nè hɔ  ‘Esi will not turn herself.’
òmó ǹ-dàné òmó hɔ  ‘They will not turn themselves.’

ywáw ǹ́-dàné nè hɔ  ‘Yaw will not turn himself.’
yè ǹ-dàné yè hɔ  ‘We will not turn ourselves.’

d. CGV LH (/CVV/)

ésí ḿ-mwá yàà  ‘Esi will not help Yaa.’
mó ḿ-mwá yàà  ‘You pl. will not help Yaa.’

ywáw ḿ́-mwá yàà  ‘Yaw will not help Yaa.’
mí ḿ-mwá yàà  ‘I will not help Yaa.’
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

\[
\begin{array}{c}
\text{wo} \quad \text{n-} \quad \text{tɔ} \\
\text{H} \quad \text{H} \quad \text{L} \quad \text{H} \\
\end{array}
\]

\[
\text{wo} \quad \text{n-} \quad \text{tɔ} \quad \text{wó} \quad \text{ん-} \quad \text{tɔ} \quad \text{pɛn} \quad \text{‘You will not buy a pen.’}
\]

Floating H deleted/absorbed after H

\[
\begin{array}{c}
\text{wo} \quad \text{n-} \quad \text{tɔ} \\
\text{H} \quad \text{L} \quad \text{H} \\
\end{array}
\]
Nasal Tone Assimilation

(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

\[
\begin{array}{c}
yε \quad n- \quad tɔ \\
\text{H} & \text{L} & \text{H}
\end{array}
\]

\[yɛ \text{ ń-tɔ pen} \quad \text{‘We will not buy a pen.’}\]

Floating H links to subject

\[
\begin{array}{c}
yε \quad n- \quad tɔ \\
\text{H} & \text{L} & \text{H}
\end{array}
\]

Nasal Tone Assimilation

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)

\[
\begin{array}{c}
yaw \quad n- \quad tɔ \\
\text{L} & \text{H} & \text{L} & \text{H}
\end{array}
\]

\[yaw \text{ ń-tɔ pen} \quad \text{‘Yaw will not buy a pen.’}\]
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
\ | \ | 
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-ǹ-tó pèn  ‘Esi didn’t buy a pen.’
wá-ǹ-tó pèn  ‘You didn’t buy a pen.’

yàw à-ǹ-tó pèn  ‘Yaw didn’t buy a pen.’
yà-ǹ-tó pèn  ‘We didn’t buy a pen.’

b. CVR(V) HL

ésí á-ǹ-nòm insyù  ‘Esi didn’t drink water.’
wá-ǹ-nòm insyù  ‘You pl. didn’t drink water.’

yàw à-ǹ-nòm insyù  ‘Yaw didn’t drink water.’
wà-ǹ-nòm insyù  ‘He didn’t drink water.’

c. CVR(V) LH

ésí á-ǹ-dàné nè hɔ  ‘Esi didn’t turn herself.’
wá-ǹ-dàné wò hɔ  ‘You didn’t turn yourself.’

yàw à-ǹ-dàné nè hɔ  ‘Yaw didn’t turn himself.’
mà-ǹ-dàné mi hɔ  ‘I didn’t turn myself.’

d. CGV LH (/CVV/)

ésí á-ǹ-mwá yàà  ‘Esi didn’t help Yaa.’
wá-ǹ-mwá yàà  ‘You didn’t help Yaa.’

yàw à-ǹ-mwá yàà  ‘Yaw didn’t help Yaa.’
mà-ǹ-mwá yàà  ‘I didn’t help Yaa.’

e. CVV LH

ésí á-ǹ-káé kɔfì  ‘Esi didn’t remember Kofi.’
wá-ǹ-káé kɔfì  ‘You didn’t remember Kofi.’

yàw à-ǹ-káé kɔfì  ‘Yaw didn’t remember Kofi.’
yà-ǹ-káé kɔfì  ‘We didn’t remember Kofi.’
f. CVOV LH

ésí é-m-́misá àsem ‘Esi didn’t ask something.’
mwé-m-́misá àsem ‘You pl. didn’t ask something.’
yàw è-m-misá àsem ‘Yaw didn’t ask something.’
yè-m-misá àsem ‘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

\[
\begin{array}{c}
\mu \\
\mu' \\
T
\end{array}
\]

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 ˈi-tó pèn ‘Esi is buying a pen.’
ómó ˈó-tó pèn ‘They are buying a pen.’
yàw ʊ-tó pèn ‘Yaw is buying a pen.’
mì i-tó pèn ‘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 ò-tó pèn. 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 ʼi-nòm insyù ‘Esi is drinking water.’
wó ʼó-nòm insyù ‘You are drinking water.’
yàw w-nòm insyù ‘Yaw is drinking water.’
ó ó-nòm insyù ‘He is drinking water.’

c. CVR(V) LH

ésí i-dânè nè hɔ ‘Esi is turning herself.’
wó ó-dânè wò hɔ ‘You are turning yourself.’
yàw w-dânè nè hɔ ‘Yaw is turning himself.’
mì i-dânè mì hɔ ‘I am turning myself.’

d. CGV LH (/CVV/)

ésí i-bwá yàà ‘Esi is helping Yaa.’
ómó ó-bwá yàà ‘They are helping Yaa.’
yàw w-bwá yàà ‘Yaw is helping Yaa.’
mì i-bwá yàà ‘I am helping Yaa.’

e. CVV LH

ésí i-kàé kòfì ‘Esi is remembering Kofi.’
wó ó-kàé kòfì ‘You are remembering Kofi.’
yàw w-kàé kòfì ‘Yaw is remembering Kofi.’
mì i-kàé kòfì ‘I am remembering Kofi.’

f. CVOV LH

ésí i-bisá àsèm ‘Esi is asking something.’
wó ó-bisá àsèm ‘You are asking something.’
yàw w-bisá àsèm ‘Yaw is asking something.’
mì i-bisá àsèm ‘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

\[
\begin{array}{c}
\mu \\
\downarrow \\
\text{Root}
\end{array}
\]

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

<table>
<thead>
<tr>
<th>Example</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ési tô-ɔ̀ pɛ̀n</td>
<td>‘Esi bought a pen.’</td>
</tr>
<tr>
<td>wó tô-ɔ̀ pɛ̀n</td>
<td>‘You bought a pen.’</td>
</tr>
<tr>
<td>yàw tô-ɔ̀ pɛ̀n</td>
<td>‘Yaw bought a pen.’</td>
</tr>
<tr>
<td>ô tô-ɔ̀ pɛ̀n</td>
<td>‘He bought a pen.’</td>
</tr>
</tbody>
</table>
b. CVR(V) HL

<table>
<thead>
<tr>
<th>Twi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí nòm-ᵩ insyù</td>
<td>‘Esi drank water.’</td>
</tr>
<tr>
<td>wó nòm-ᵩ insyù</td>
<td>‘you drank water.’</td>
</tr>
<tr>
<td>yàw nòm-ᵩ insyù</td>
<td>‘Yaw drank water.’</td>
</tr>
<tr>
<td>ō nòm-ᵩ insyù</td>
<td>‘He drank water.’</td>
</tr>
</tbody>
</table>

c. CVR(V) LH

<table>
<thead>
<tr>
<th>Twi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí dàné-ᵩ nè hô</td>
<td>‘Esi turned herself.’</td>
</tr>
<tr>
<td>wó dàné-ᵩ wò hô</td>
<td>‘You turned yourself.’</td>
</tr>
<tr>
<td>yàw dàné-ᵩ nè hô</td>
<td>‘Yaw turned himself.’</td>
</tr>
<tr>
<td>mì dàné-ᵩ mì hô</td>
<td>‘I turned myself.’</td>
</tr>
</tbody>
</table>

d. CGV LH (/CVV/)

<table>
<thead>
<tr>
<th>Twi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí bóá-ᵩ yàà</td>
<td>‘Esi helped Yaa.’</td>
</tr>
<tr>
<td>wó bóá-ᵩ yàà</td>
<td>‘You helped Yaa.’</td>
</tr>
<tr>
<td>yàw bóá-ᵩ yàà</td>
<td>‘Yaw helped Yaa.’</td>
</tr>
<tr>
<td>yë bóá-ᵩ yàà</td>
<td>‘We helped Yaa.’</td>
</tr>
</tbody>
</table>

e. CVV LH

<table>
<thead>
<tr>
<th>Twi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí käé-ᵩ kòfi</td>
<td>‘Esi remembered Kofi.’</td>
</tr>
<tr>
<td>wó käé-ᵩ kòfi</td>
<td>‘You remembered Kofi.’</td>
</tr>
<tr>
<td>yàw käé-ᵩ kòfi</td>
<td>‘Yaw remembered Kofi.’</td>
</tr>
<tr>
<td>mì käé-ᵩ kòfi</td>
<td>‘I remembered Kofi.’</td>
</tr>
</tbody>
</table>

f. CVOV LH

<table>
<thead>
<tr>
<th>Twi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí bisá-ᵩ ìsèm</td>
<td>‘Esi asked something.’</td>
</tr>
<tr>
<td>wó bisá-ᵩ ìsèm</td>
<td>‘You asked something.’</td>
</tr>
<tr>
<td>yàw bisá-ᵩ ìsèm</td>
<td>‘Yaw asked something.’</td>
</tr>
<tr>
<td>mì bisá-ᵩ ìsèm</td>
<td>‘I asked something.’</td>
</tr>
</tbody>
</table>
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 ~ įyɛ̀ ~ ɔyɛ̀ appears along with the lengthening of the final segment shown above. Examples are given below.

(23) wó tɔɔyɛ̀ ‘You bought.’ wó nɔmɔyɛ̀ ‘You drank.’
     wó dànɛɛyɛ̀ ‘You turned.’ wó bɔáayɛ̀ ‘You helped.’
     wó kàɛɛyɛ̀ ‘You remembered.’ wó bísáayɛ̀ ‘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.

---

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.  

(24) Grammatical Tone Association

\[
\begin{array}{c}
\text{root} \\
\mu
\end{array}
\begin{array}{c}
T
\end{array}
\Rightarrow
\emptyset
\]

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 /bwá yáà ‘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.

---

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

<table>
<thead>
<tr>
<th>verb</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí á-tò ɔ̀np</td>
<td></td>
</tr>
<tr>
<td>‘Esi has bought a pen.’</td>
<td></td>
</tr>
<tr>
<td>wá-tò ɔ̀np</td>
<td></td>
</tr>
<tr>
<td>‘You have bought a pen.’</td>
<td></td>
</tr>
<tr>
<td>yàw à-tò ɔ̀np</td>
<td></td>
</tr>
<tr>
<td>‘Yaw has bought a pen.’</td>
<td></td>
</tr>
<tr>
<td>wà-tò ɔ̀np</td>
<td></td>
</tr>
<tr>
<td>‘He has bought a pen.’</td>
<td></td>
</tr>
</tbody>
</table>

b. CVR(V) HL

<table>
<thead>
<tr>
<th>verb</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí á-nòm ɪ̀nsyù</td>
<td></td>
</tr>
<tr>
<td>‘Esi has drunk water.’</td>
<td></td>
</tr>
<tr>
<td>wá-nòm ɪ̀nsyù</td>
<td></td>
</tr>
<tr>
<td>‘You have drunk water.’</td>
<td></td>
</tr>
<tr>
<td>yàw à-nôm ɪ̀nsyù</td>
<td></td>
</tr>
<tr>
<td>‘Yaw has drunk water.’</td>
<td></td>
</tr>
<tr>
<td>mà-nôm ɪ̀nsyù</td>
<td></td>
</tr>
<tr>
<td>‘I have drunk water.’</td>
<td></td>
</tr>
</tbody>
</table>

c. CVR(V) LH

<table>
<thead>
<tr>
<th>verb</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí á-dàné nè hɔ</td>
<td></td>
</tr>
<tr>
<td>‘Esi has turned herself.’</td>
<td></td>
</tr>
<tr>
<td>mwá-dàné mò hɔ</td>
<td></td>
</tr>
<tr>
<td>‘You pl. have turned yourself.’</td>
<td></td>
</tr>
<tr>
<td>yàw à-dáné nè hɔ</td>
<td></td>
</tr>
<tr>
<td>‘Yaw has turned himself.’</td>
<td></td>
</tr>
<tr>
<td>wà-dáné nè hɔ</td>
<td></td>
</tr>
<tr>
<td>‘He has turned himself.’</td>
<td></td>
</tr>
</tbody>
</table>

d. CGV LH (/CVV/)

<table>
<thead>
<tr>
<th>verb</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ésí á-bwá yàà</td>
<td></td>
</tr>
<tr>
<td>‘Esi has helped Yaa.’</td>
<td></td>
</tr>
<tr>
<td>wá-bwá yàà</td>
<td></td>
</tr>
<tr>
<td>‘You have helped Yaa.’</td>
<td></td>
</tr>
<tr>
<td>yàw à-bwá yàà</td>
<td></td>
</tr>
<tr>
<td>‘Yaw has helped Yaa.’</td>
<td></td>
</tr>
<tr>
<td>mà-bwá yàà</td>
<td></td>
</tr>
<tr>
<td>‘I have helped Yaa.’</td>
<td></td>
</tr>
</tbody>
</table>

\(^9\) 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

éśí á'-káé kõfi  ‘Esi has remembered Kofi.’
wá'-káé kõfi  ‘You have remembered Kofi.’

yàw à-káé kõfi  ‘Yaw has remembered Kofi.’
yà-káé kõfi  ‘We have remembered Kofi.’

f. CVOV LH

éśí é'-bí já́ àsõm  ‘Esi has asked something.’
wé'-bí já́ àsõm  ‘You have asked something.’

yàw è-bí já́ àsõm  ‘Yaw has asked something.’
yè-bí já́ àsõm  ‘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

[Perf  a-
     |  μ
     |  μ
     |  H  H → 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

\[ \text{wo a- kae wà-káé kòfì} \] ‘You have remembered Kofi.’

\[ \text{H} \quad \text{H} \quad \text{LH} \]

Tone Spreading and Grammatical Tone Association

\[ \text{wo a- kae} \]

\[ \text{H} \quad \text{H} \quad \text{H} \]

Perfect Polarity

\[ \text{wo a- kae} \]

\[ \text{H} \quad \text{L} \quad \text{H} \]

Tonal Plateauing

\[ \text{wo a- kae} \]

\[ \text{H} \quad \text{L} \quad \text{H} \]

Vowel Fusion

\[ \text{w a- kae} \]

\[ \text{H} \quad \text{L} \quad \text{H} \]

b. L-toned subject

\[ \text{yɛ a- kae yà-káé kòfì} \] ‘We have remembered Kofi.’

\[ \text{L} \quad \text{H} \quad \text{LH} \]
Tone Spreading and Grammatical Tone Association

\[
\begin{array}{c}
\text{yɛ a- kae} \\
\text{L H H}
\end{array}
\]

Vowel Fusion

\[
\begin{array}{c}
y a- kae \\
\text{L H}
\end{array}
\]

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

\[
\begin{align*}
\text{ésí } & \text{'ǹ-tó-ɔ́pɛ́n } & \text{‘Esi hasn’t bought a pen.’} \\
\text{wó } & \text{‘ǹ-tó-ɔ́pɛ́n } & \text{‘You haven’t bought a pen.’} \\
\text{yàw } & \text{‘ǹ-tó-ɔ́pɛ́n } & \text{‘Yaw hasn’t bought a pen.’} \\
\text{ɔ́ } & \text{‘ǹ-tó-ɔ́pɛ́n } & \text{‘He hasn’t bought a pen.’}
\end{align*}
\]

b. CVR(V) HL

\[
\begin{align*}
\text{ésí } & \text{‘ǹ-nôm-mɪ̀nsyù } & \text{‘Esi hasn’t drunk water.’} \\
\text{wó } & \text{‘ǹ-nôm-mɪ̀nsyù } & \text{‘You haven’t drunk water.’} \\
\text{yàw } & \text{‘ǹ-nôm-mɪ̀nsyù } & \text{‘Yaw hasn’t drunk water.’} \\
\text{ɔ́ } & \text{‘ǹ-nôm-mɪ̀nsyù } & \text{‘He hasn’t drunk water.’}
\end{align*}
\]

c. CVR(V) LH

\[
\begin{align*}
\text{ésí } & \text{‘ǹ-dáné-ɛ̀nɛ́ɛ̃hɔ́ } & \text{‘Esi hasn’t turned herself.’} \\
\text{wó } & \text{‘ǹ-dáné-ɛ̀nɛ́ɛ̃hɔ́ } & \text{‘You haven’t turned yourself.’} \\
\text{yàw } & \text{‘ǹ-dáné-ɛ̀nɛ́ɛ̃hɔ́ } & \text{‘Yaw hasn’t turned himself.’} \\
\text{ɔ́ } & \text{‘ǹ-dáné-ɛ̀nɛ́ɛ̃hɔ́ } & \text{‘I haven’t turned myself.’}
\end{align*}
\]
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).
Verbal Affixes

<table>
<thead>
<tr>
<th>Category</th>
<th>Marker(s)</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitual</td>
<td>∅</td>
<td>ò bì́sá</td>
<td>‘he asks…’</td>
</tr>
<tr>
<td>Negative (e.g. habitual)</td>
<td>/ǹ-/</td>
<td>ò m̀-m-sá</td>
<td>‘he doesn’t ask…’</td>
</tr>
<tr>
<td>Future</td>
<td>/ bè̀-/</td>
<td>ò bè́-bì́sá</td>
<td>‘he will ask…’</td>
</tr>
<tr>
<td>Negative future</td>
<td>floating H prefix+neg pfx</td>
<td>ò m̀-mísá</td>
<td>‘he will not ask…’</td>
</tr>
<tr>
<td>Progressive</td>
<td>L mora pfx</td>
<td>ò ò-bì́sá</td>
<td>‘he’s asking…’</td>
</tr>
<tr>
<td>#Negative progressive</td>
<td>identical to neg fut¹⁰</td>
<td>ò m̀-mísá</td>
<td>‘he isn’t asking…’</td>
</tr>
<tr>
<td>#Immediate future</td>
<td>prog pfx + / bè̀-/</td>
<td>ò ò-bé-bì́sá</td>
<td>‘he’s about to ask…’</td>
</tr>
<tr>
<td>Past</td>
<td>floating L pfx+L mora sfx</td>
<td>ò bì́sá-à</td>
<td>‘he asked…’</td>
</tr>
<tr>
<td>Negative past</td>
<td>/a-/ + neg pfx</td>
<td>wè̀m-sí́sá</td>
<td>‘he didn’t ask…’</td>
</tr>
<tr>
<td>Perfect</td>
<td>/a-/ + floating H pfx</td>
<td>wè-bì́sá</td>
<td>‘he has asked…’</td>
</tr>
<tr>
<td>Negative perfect</td>
<td>neg pfx+H pfx+L mora sfx</td>
<td>ò m̀-mísá-à</td>
<td>‘he hasn’t asked…’</td>
</tr>
<tr>
<td>#Imperative</td>
<td>floating L</td>
<td>(replaces lexical tones) bì́sá</td>
<td>‘ask…!’</td>
</tr>
<tr>
<td>#Negative imperative</td>
<td>/ m̀é-/ or /èè̀-/ + neg pfx</td>
<td>mé-m̀-mísá ~ èè-m̀-mísá</td>
<td>‘don’t ask…!’</td>
</tr>
</tbody>
</table>

Motional

‘come and X’ / bè̀-/ | ò bè́bì́sá-à | ‘he came and asked’

‘go and X’ / kò̀-/ | ò kò̀bì́sá-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-bisá-è ‘I asked’, m-à-bisá ‘I have asked’, but m-à-m-bisá ‘I didn’t ask’, mê-m-bisá-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:
A Schematic Representation of Similarities in Recent-past and Remote-past Forms

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

-\text{-} -i; -i; a copy of a preceding segment

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.,\textsuperscript{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/i], 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.

\textsuperscript{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: \textit{\textit{ǒbɛ́ ɓá nɔ́ ná m à-wɔ́ ṓfufu}} ‘By the time he comes, I will have pounded fufu,’ where the bolded portion is identical to \textit{m à-wɔ́ ṓfufu} ‘I have pounded fufu.’

\textsuperscript{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.
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 -\textit{i} or -\textit{ɪ} by default), and second, that the default realization of a featureless verb-initial mora is \textit{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 at least three major problems with Ofori’s account. The first is that, contrary to Ofori’s claim, [\textit{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 [\textit{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 [\textit{a}]- prefixes seen in the perfect and negative past cannot be empty moras underlingly; rather, they must be represented as /\textit{a}-/.

A second problem for Ofori’s account is that the /\textit{a}-/ prefixes and mora suffixes do not have the same tones. The mora suffixes always have L tone, while the /\textit{a}-/ prefixes have alternating surface tones. Thus, the mora suffixes are best analyzed as having an underlying L tone, while the prefixes are underlingly 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\textsuperscript{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 \textit{a-} surfaces as \[e\] with this verb due to ATR harmony).

\begin{tabular}{ll}
(33) & a. Past  \\
  & wó bisá-à àsèm & ‘You asked something.’  \\
  & mi bisá-à àsèm & ‘I asked something.’  \\

  & b. Perfect  \\
  & wé-\textsuperscript{1}bisá àsèm & ‘You have asked something.’  \\
  & yè-bisá àsèm & ‘We have asked something.’  \\

  & c. Negative past  \\
  & mwé-m-\textsuperscript{1}misá àsèm & ‘You pl. didn’t ask something.’  \\
  & yè-m-misá àsèm & ‘We didn’t ask something.’  \\
\end{tabular}

\textsuperscript{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

\[ \text{mú mí'-mísá-à àsèm} \quad \text{‘You pl. haven’t asked something.’} \]
\[ \text{mi mí-mísá-à àsèm} \quad \text{‘I haven’t asked something.’} \]

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 \( *wó \text{ mí'-mísá-à àsèm} \) ‘you didn’t ask something’ and \( *\text{mí mí'-mísá-à àsèm} \) ‘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 -yɛ̀ 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

\(^{14}\) 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 /bɛ/-

a. CV H

éší i-bɛ-tɔ pɛn  ‘Esi is about to buy a pen.’
ómọ ɔ-bɛ-tɔ pɛn  ‘They are about to buy a pen’
yɔw ɔ-bɛ-tɔ  pɛn  ‘Yaw is about to buy a pen.’
mì i-bɛ-tɔ pɛn  ‘I am about to buy a pen.’

b. CVR(V) HL

éší i-bɛ-nɔm insyù  ‘Esi is about to drink water.’
wó ɔ-bɛ-nɔm insyù  ‘You are about to drink water.’
yɔw ɔ-bɛ-nɔm insyù  ‘Yaw is about to drink water.’
mì i-bɛ-nɔm insyù  ‘I am about to drink water.’

c. CVR(V) LH

éší i-bɛ-danɛ nɛ ḥɔ  ‘Esi is about to turn herself.’
wó ɔ-bɛ-danɛ wɔ ḥɔ  ‘You are about to turn yourself.’
yɔw ɔ-bɛ-danɛ nɛ ḥɔ  ‘Yaw is about to turn himself.’
yɛ ɛ-bɛ-danɛ yɛ ḥɔ  ‘We are about to turn ourselves.’
The verbal morphology and phonology of Asante Twi

d. CGV LH (/CVV/)

ɛsí i-bè-bwá yàà  ‘Esi is about to help Yaa.’
ɔmò ɔ-bè-bwá yàà  ‘They are about to help Yaa.’

yàw ɔ-bè-bwá yàà  ‘Yaw is about to help Yaa.’
mi i-bè-bwá yàà  ‘I am about to help Yaa.’

e. CVV LH

ɛsí i-bè-kàé kòfì  ‘Esi is about to remember Kofi.’
wó ɔ-bè-kàé kòfì  ‘You are about to remember Kofi.’

yàw ɔ-bè-kàé kòfì  ‘Yaw is about to remember Kofi.’
ɔ̀ ɔ-bè-kàé kòfì  ‘He is about to remember Kofi.’

f. CVOV LH

ɛsí i-bè-bisá àsèm  ‘Esi is about to ask something.’
ɔmò ɔ-bè-bisá àsèm  ‘They are about to ask something.’

yàw ɔ-bè-bisá àsèm  ‘Yaw is about to ask something.’
yè è-bè-bisá àsèm  ‘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  tò pén  ‘Buy a pen!’
b. CVR(V) HL  nòm insyù  ‘Drink water!’
c. CVR(V) LH  dànè wò hô  ‘Turn yourself!’
d. CGV LH  bwà yàá  ‘Help Yaa!’
e. CVV LH  kàè kòfì  ‘Remember Kofi!’
f. CVOV LH  bisà àsèm  ‘Ask something!’
(36) Negative imperative - prefix /mɛ̃-/ or /ɛ̀ɛ̀-/ followed by the negative prefix /ǹ-/

a. CV H  mɛ̃-ń-tɔ̃ pɛ̃n  ~  ɛ̀ɛ̀-ń-tɔ̃ pɛ̃n  ‘Don’t buy a pen!’
b. CVR(V) HL  mɛ̃-ń-nɔ̃m ɪ̀nsyù  ~  ɛ̀ɛ̀-ń-nɔ̃m ɪ̀nsyù  ‘Don’t drink water!’
c. CVR(V) LH  mɛ̃-nɔ̃-dànɛ wɔ̃ hɔ̃  ~  ɛ̀ɛ̀-nɔ̃-dànɛ wɔ̃ hɔ̃  ‘Don’t turn yourself!’
d. CGV LH  mɛ̃-m- mwà ɣɔ̃  ~  ɛ̀ɛ̀-m- mwà ɣɔ̃  ‘Don’t help Yaa!’
e. CVV LH  mɛ̃-ŋ- ʊə̃ kɔ̃fì  ~  ɛ̀ɛ̀-ŋ- ʊə̃ kɔ̃fì  ‘Don’t remember Kofi!’
f. CVOV LH  mɛ̃-m- ʊə̃sà ɭɛ̃m  ~  ɛ̀ɛ̀-m- ʊə̃sà ɭɛ̃m  ‘Don’t ask something!’

(37) ‘Motional’ (‘come’ and ‘go’) – L-toned prefixes /bɛ̃-/ and /kɔ̃-/ respectively

a. CV H

é̃sì ɬbɛ̃-tɔ̃-ɔ̃ pɛ̃n  ‘Esi came and bought a pen.’
wɔ́ ɬbɛ̃-tɔ̃-ɔ̃ pɛ̃n  ‘You came and bought a pen.’
yàw bɛ̃-tɔ̃-ɔ̃ pɛ̃n  ‘Yaw came and bought a pen.’
mi bɛ̃-tɔ̃-ɔ̃ pɛ̃n  ‘I came and bought a pen.’

é̃sì ɬkɔ̃-tɔ̃-ɔ̃ pɛ̃n  ‘Esi went and bought a pen.’
wɔ́ ɬkɔ̃-tɔ̃-ɔ̃ pɛ̃n  ‘You went and bought a pen.’
yàw kɔ̃-tɔ̃-ɔ̃ pɛ̃n  ‘Yaw went and bought a pen.’
ɔ̀ kɔ̃-tɔ̃-ɔ̃ pɛ̃n  ‘He went and bought a pen.’

b. CVR(V) HL

é̃sì ɬbɛ̃-nɔ̃m-ɪ̀nsyù  ‘Esi came and drank water.’
wɔ́ ɬbɛ̃-nɔ̃m-ɪ̀nsyù  ‘You came and drank water.’
yàw bɛ̃-nɔ̃m-ɪ̀nsyù  ‘Yaw came and drank water.’
mi bɛ̃-nɔ̃m-ɪ̀nsyù  ‘I came and drank water.’

é̃sì ɬkɔ̃-nɔ̃m-ɪ̀nsyù  ‘Esi went and drank water.’
wɔ́ ɬkɔ̃-nɔ̃m-ɪ̀nsyù  ‘You went and drank water.’
yàw kɔ̃-nɔ̃m-ɪ̀nsyù  ‘Yaw went and drank water.’
ɔ̀ kɔ̃-nɔ̃m-ɪ̀nsyù  ‘He went and drank water.’
c. CVR(V) LH

Ésí bê-dânê-ê nê hô  ‘Esi came and turned herself.’
Wô bê-dânê-ê wô hô  ‘You came and turned yourself.’

Yâw bê-dânê-ê nê hô  ‘Yaw came and turned himself.’
Mî bê-dânê-ê mî hô  ‘I came and turned myself.’

Ésí kô-dânê-ê nê hô  ‘Esi went and turned herself.’
Wô kô-dânê-ê wô hô  ‘You went and turned yourself.’

Yâw kô-dânê-ê nê hô  ‘Yaw went and turned himself.’
Mî kô-dânê-ê mî hô  ‘I went and turned myself.’

d. CGV LH (/CVV/)

Ésí bê-bwá-à yàà  ‘Esi came and helped Yaa.’
Wô bê-bwá-à yàà  ‘You came and helped Yaa.’

Yâw bê-bwá-à yàà  ‘Yaw came and helped Yaa.’
Ô bê-bwá-à yàà  ‘He came and helped Yaa.’

Ésí kô-bwá-à yàà  ‘Esi went and helped Yaa.’
Wô kô-bwá-à yàà  ‘You went and helped Yaa.’

Yâw kô-bwá-à yàà  ‘Yaw went and helped Yaa.’
Mî kô-bwá-à yàà  ‘I went and helped Yaa.’
e. CVV LH

ési bè-kàé-è kòfì ‘Esi came and remembered Kofi.’
wó bè-kàé-è kòfì ‘You came and remembered Kofi.’

yàw bè-kàé-è kòfì ‘Yaw came and remembered Kofi.’
yè bè-kàé-è kòfì ‘We came and remembered Kofi.’

ési kò-kàé-è kòfì ‘Esi went and remembered Kofi.’
wó kò-kàé-è kòfì ‘You went and remembered Kofi.’

yàw kò-kàé-è kòfì ‘Yaw went and remembered Kofi.’
yè kò-kàé-è kòfì ‘We went and remembered Kofi.’

f. CVOV LH

ési bè-bisá-à àsèm ‘Esi came and asked something.’
mó bè-bisá-à àsèm ‘You pl. came and asked something.’

yàw bè-bisá-à àsèm ‘Yaw came and asked something.’
o bè-bisá-à àsèm ‘He came and asked something.’

ési kò-bisá-à àsèm ‘Esi went and asked something.’
wó kò-bisá-à àsèm ‘You went and asked something.’

yàw kò-bisá-à àsèm ‘Yaw went and asked something.’
o kò-bisá-à àsèm ‘He went and asked something.’

References


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