

Theory and description in African Linguistics

Selected papers from the 47th
Annual Conference on African
Linguistics

Edited by

Emily Clem

Peter Jenks

Hannah Sande

Contemporary African Linguistics

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Contemporary African Linguistics

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Part I

Phonetics and phonology

Chapter 1

A featural analysis of mid and downstepped high tone in Babanki

Pius W. Akumbu

University of Buea, Cameroon

In this study, I examine the occurrence of the surface Mid (M) and downstepped High (↓H) tone in Babanki, a Central Ring Grassfields Bantu language of Cameroon. Hyman (1979) has demonstrated that Babanki has two underlying tones, namely, High (H) and Low (L), and that on the surface, it contrasts three level tones, H, M, L, plus a downstepped High (↓H). There is also contrast between a falling (L) and a level low (Lo) tone before pause in the language. I demonstrate in this paper that the M tone is from two different phonological sources and derived by the regressive spread of the high register feature of a following H tone while ↓H is caused by the progressive spread of the low register feature of a preceding floating L tone. The M and ↓H tone are phonetically identical in the language but differ in that ↓H establishes a ceiling for following H tones within the same tonal phrase.

1 Introduction

Part of the complexity of tone in Grassfields Bantu (GB) languages of Northwest Cameroon such as Babanki (a Central Ring GB language) is the lack of correspondence between underlying and surface tones as well as the presence of many floating tones. There is no underlying M tone in Babanki, yet it occurs on the surface with the constraint that it must be followed by a H tone. Hyman (1979) has given a historical account of this M tone which is unnecessarily abstract as a synchronic analysis. I demonstrate in this paper that M tone results from the regressive spread of the [+R] feature of high tones which is blocked only by a nasal in NC initial roots. Downstep on its part results from the progressive spread of the [-R] feature of a floating L tone. The synchronic reanalysis of Babanki surface tones in this paper addresses the following issues: 1) What are the underlying

sources of the M tone? 2) How should the M tone be represented, as opposed to the downstepped H? I begin by illustrating in §2 that the lexical tones of Babanki are H and L even though a number of other tonal distinctions are found on the surface. I then proceed to examine the sources of M tone in the language in §3 before turning to discuss how the M tone is derived in §4. In §5, I provide evidence that both M and ↓H are phonetically identical and differ only in that the register is reset to high after M tone but not after ↓H which establishes a ceiling for future H tones within the same tonal phrase.

2 Babanki lexical tone

Babanki has two underlying tones, namely H and L, illustrated in (??). As a native speaker, I have provided most of the data but have also taken some from prior literature, particularly Hyman (1979) and a lexical database of 2,005 Babanki entries in Filemaker Pro™.¹

(1)

ndòŋ	‘potato’	ndónŋ	‘cup’
kà-bwìn	‘witchcraft’	kà-bwín	‘ridge’
à-sè	‘grave’	à-sé	‘profit(n)’
kà-mbò	‘bag’	kà-mbó	‘madness’

On the surface, however, several tonal realizations are possible. As noted by Hyman (1979: 160-161), there is a distinction between falling low (L) and level low (Lo) tones before pause as in (??):

(2)	L		L ^o	
kà-ntò	‘cross (n)’	kà-mbò ^o	‘bag’	/kà-mbò’/
nyàm	‘animal’	dzàm ^o	‘back’	/dzàm’/
tàn	‘five’	wàn ^o	‘child’	/wàn’/
à-sè	‘grave’	dzè ^o	‘kind of fruit’	/dzè’/

The level low tone is considered an effect of a floating high tone that follows the low tone and prevents it from falling. A mid (M) tone also occurs even though with an unusual constraint that it must be followed by a H tone:

¹The IPA symbols for the following orthographic symbols used in this paper are given in square brackets: ny [ɲ], sh [ʃ], zh [ʒ], gh [gʰ], ch [tʃ], j [dʒ], y [j].

- (3) a. káŋ fəsés²
 káŋ ' fə-sés
 fry IMP c19-pepper
 'fry pepper'
 b. kùmá kǎkǐ
 kùm ' kǎ-kǐ
 touch IMP c7-chair
 'touch a chair'
 c. ghá? kǎvú
 ghá? ' kǎ-vú
 hold IMP c7-hand
 'hold a hand'

The data show that the M **tone** is derived from a L **tone** found between two H tones as illustrated in §3.1 and discussed elaborately in §4. Finally, there is a downstepped H **tone** as in (??):

- (4) a. kǎ-fó` ↓kǎ nyàm
 kǎ-fó` kǎ nyàm
 c7-thing AM c9-animal
 'thing of animal'
 b. kǎmbó ↓kǎ wǐ?
 kǎ-mbó` kǎ wǐ?
 c7-madness AM c1.person
 'madness of person'
 c. kǎkǎŋ ↓kǎ byí shóm
 kǎ-kǎŋ` kǎ byí shóm
 c7-dish AM goat.c10 mine.c10
 'dish of my goats'

The data in (??) illustrate that the H **tone** of the associative marker (AM) is produced at a lower level than that of the preceding noun root because of the intervening floating L **tone**. This is discussed further and formalized in §5. The presence of both M and ↓H in the same language is of interest for two reasons. First, Babanki is unique in that Grassfields Bantu Ring languages are typically said to have either M or ↓H. As Hyman puts it:

²There is a change in the root vowel because in Babanki, /e/ and /o/ are realized as [ɛ] and [ɔ] respectively in closed syllables (Mutaka & Chie 2006: 75).

For example, it is known that the western **Ring** languages and **Babanki** (of the central **Ring** group) have similar downstep systems. The remaining languages of the central group (**Kom**, Bum, Bafmeng, Oku, Mbizinaku) all have systems with M **tone** instead of ↓H, a system which **Grebe & Grebe (1975)** have also documented for **Lamnsoq** of the eastern group (**Hyman 1979**: 176-177).

Second, although phonologically distinct, the M and ↓H tones are phonetically identical, as I shall show below, which is of particular interest to the study of **tone** in general. It is therefore necessary to examine how the M **tone** is derived and how it should be formally represented.

It is important to note that contour tones are rare in the language, allowed mainly in a few borrowed words. In the lexical database of 2,005 **Babanki** entries in Filemaker Pro™, only eight monosyllabic nouns with low-Rising (LH) and four with high-falling (HL) tones were found.³

3 Sources of Babanki M tone

The M **tone** is derived in **Babanki** from L via two separate processes which I will refer to as prefix L-Raising and stem L-Raising.

3.1 Prefix L-Raising: H # L-H → H # M-H

The L **tone** of a prefix is raised to M if it appears between two H tones as in the following examples.

- (5) a. tətóʔ tətáʔ
tə-tóʔ tə-táʔ
c13-bush c13-three
'three bushes'
- b. kəkím kə vətsón
kə-kím kə və-tsón
c7-crab AM c2-thief
'crab of thieves'

³LH: *əŋkəpəm* 'pig', *bələn* 'groundnut', *fəndzəndzə* 'type of bird', *kəŋgū* 'fool (n)', *mbwī* 'nail', *ŋgū* 'rake (n)', *sə* 'saw (n)', *tələm* 'cobra'.

HL: *bibi* 'deaf', *bôbô* 'Lord', *byə* 'pear', *lām* 'lamp', *kī* 'key', *chôs* 'church', *wās* 'watch'.

The presence of words like *sə* 'saw (n)', *lām* 'lamp', etc. suggests that many of the **Babanki** words with contour tones are borrowings.

- c. tətʰ? tətò
tə-tó? tət-bò
c13-bush c13-two
'two bushes'
- d. kəkím ká vəlèmə
kə-kím ká vəl-èmə
c7-crab AM c2-sibling
'crab of siblings'

Raising applies in (5a) where the L is flanked by Hs but not in (5b) where it is followed by a L **tone**. I return to the issue in §4 to provide a featural analysis of the raising.

3.2 Stem L-Raising: L-L # H → L-M # H

In **Babanki**, the L **tone** of certain noun roots that also have a L prefix is realized as M if it is followed by a H **tone**. The following sets of data show stem L-Raising when the noun is in N1 position in an associative N1 of N2 construction (6a), when the noun is followed by a modifier (6b), and in verb phrases (6c). Forms without raising (i.e. with surface L **tone**) are given in (6d):

- (6) a. kəkʰs ká wì?
kə-kòs ká wì?
c7-slave AM c1.person
'slave of person'
- b. fəkʰ? fə nyàm
fə-kò? fə nyàm
c19-wood AM c9.animal
'wood of person'
- c. fəsò fə↓wén
fə-sò fə wén
c19-abscess AM him
'his abscess'
- d. kəkyē lá kəmù?
kə-kyè lá kə-mù?
c7-basket just c7-one
'just one basket'

- e. wyé kàzhwī tsú
wyé kà-zhwì tsú
put c7-air there
'inflate it'
- f. kú kàlāŋ lúwèn
kú kà-lāŋ lúwèn
give c7-cocoyam now
'give cocoyam now'
- g. nyàm à wì?
nyàm à wì?
c9.animal AM c1.person
'animal of person'
- h. kàkòs kà mù?
kà-kòs kà-mù?
c7-slave c7-one
'one slave'
- i. áshù kàlāŋ nè mú↓ú
á-shù kà-lāŋ nè múú
INF-wash c7-cocoyam PREP c6a.water
'to wash cocoyam with water'

To account for the raising in (6a-c), Hyman (1979: 168) offers a synchronic analysis which mirrors the historical developments, as in (7):

(7) kákòs ká → kákôs ká → kàkòs ká → kàkôs ká ...

As seen, the prefix originally had a H **tone** which spreads onto the L **tone** stem.⁴ After spreading, the prefix H changes to L and then the resulting L-HL # H sequence becomes L-M # H by contour simplification. While this historical account derives the correct output, it appears to be unnecessarily abstract as a synchronic analysis. Instead, the H **tone** on the prefix can rather be analyzed as L (Akumbu 2011) and the change from L to M can be accounted for as a raising rule (see §4). There is, however, a complication that either analysis must deal with: L-L nouns that have a nasal as part of the root initial NC do not become L-M before H as illustrated in (8):

⁴Hyman's pre-autosegmental analysis also posits a floating L after the L stem, i.e., /-kòs/ 'slave'. This is ignored here because it is unnecessary and also an OCP violation.

- (8) a. kèndòŋ ká nyàm
 kà-ndòŋ ká nyàm
 c7-neck AM c9.animal
 ‘neck of animal’
 b. tàŋkàŋ tá ŋkà?
 tà-ŋkàŋ tá ŋkà?
 c13-comb AM c1.rooster
 ‘combs of rooster’
 c. fàŋgàm fá wì?
 fà-ŋgàm fá wì?
 c19-gong AM c1.person
 ‘gong of person’

To account for this, Hyman (1979: 167) distinguished two classes of nouns based on whether the stem syllable has an oral (O) or nasal (N) onset and observed that “a noun in the O class changes from L-L to L-M when in the N1 position before a H **tone** associative marker. A noun in the N class ...remains L-L.” He illustrates that L-Raising is blocked when the N1 is from a nasal class and posits that “in N1 position, N L-L nouns and L-Lo nouns have an underlying L prefix, rather than the underlying H proposed for other noun prefixes” (Hyman 1979: 169). Since HTS does not occur, there is no L-HL # H sequence to become L-M # H. While that analysis is historically plausible, we can again propose a more concrete analysis by which L-Raising is simply blocked when a L **tone** root has an NC onset. As argued in Akumbu (2011: 9), there is a L **tone** linked to the N in NC sequences that blocks the raising. This is because in these cases, the nasal forms part of the root and bears the same L like the root vowel because of the OCP (Snider 1999) that is enforced morpheme-internally in Babanki. The multiple linking of the L (to the nasal and root vowel) violates the condition for raising, namely, that the **tone** that precedes the target L must be singly-linked (Akumbu 2011: 6). L-Raising will automatically not apply to L-L° nouns since they have a floating H after them that prevents raising from occurring. The fact that the roots in (8) all end with a nasal could be relevant in providing a possibility of tying the failure of L-Raising to apply to some phonetic motivation. A possibility might be that the extra nasal, an extra mora, gives the L **tone** more of a chance to manifest itself. If so, then we might expect the same if the stem has a long vowel (another manifestation of an extra mora). Unfortunately, Babanki does not have long vowels and two other problems exist: there are stems, e.g. fàŋgù? fá wì? ‘small stone of person’, without final nasal that do not also become M, as well as stems with final nasal, e.g. kàbūm

ká wì? ‘mucus of person’, that do in fact become M. So far, the two sources of M **tone** have been presented: prefix L becomes M between Hs and stem L becomes M when preceded by a L prefix and followed by a H. It should be noted that this occurs over a word boundary although it is still unclear what the influence of the boundary is. In addition, there is another context in which a stem L becomes M. This arises when a coda consonant is deleted intervocalically (see Akumbu 2016 and references cited therein for more information on coda deletion in Babanki). As seen in (9), when the CVC stem is H and the following prefix vowel is L, the H+L sequence resulting from coda deletion is realized M:

- (9) a. *kàbā: kóm*
 kà-bán à-kóm
 c7-corn.fufu c7-my
 ‘my corn fufu’
 b. *kàŋkō: kóm*
 kà-ŋkón à-kóm
 c7-fool c7-my
 ‘my fool’
 c. *kàbā: kóm*
 kà-báŋ à-kóm
 c7-home c7-my
 ‘my home’

I propose to account for this by invoking the prefix raising rule. Thus, in (9a) for example, the input /*kà-bán à-kóm*/ first undergoes prefix L-Raising to become *kà-bán ā-kóm*. Next, the coda consonant (alveolar or **velar nasal**) is deleted in intervocalic position, creating the structure *kà-bá ā-kóm*. This is followed by vowel (schwa) deletion which allows its M **tone** to float: *kà-bá⁻-kó*. The floating M **tone** docks leftwards and causes the deletion of the H **tone**, since HM contour tones are not permitted in the language. The vowel that causes **vowel deletion** then undergoes compensatory lengthening, resulting to the surface structure [*kàbā: kóm*].

4 Featural analysis of Babanki M tone

In this section I show that the M **tone** can be insightfully accounted for using tonal features which spread. Various proposals for the use of features in the representation and analysis of **tone** have been addressed by Yip (1980), Clements

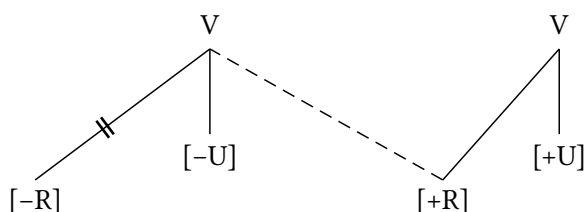
(1983), Pulleyblank (1986), Odden (1995), Snider (1999), Hyman (2011) and others. Following the **tone** features introduced by Yip (1980) and modified by Pulleyblank (1986), I assume the feature system in (10) for the two underlying Babanki tones:

(10)

	H	L
Upper	+	-
Raised	+	-

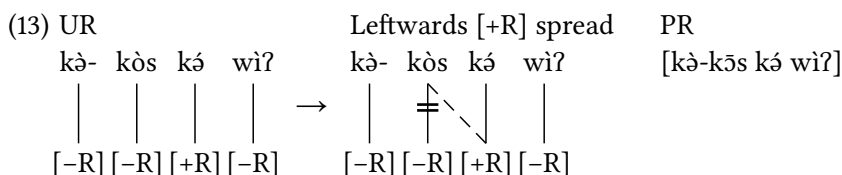
I propose that **Babanki** M **tone** be represented as [-U, +R] which can be derived directly from the leftwards spreading of the [+R] feature of a H **tone** to a preceding L **tone**, whose [-R] feature automatically delinks. I formulate the process in (11) where I link features directly to the TBUs even though there are arguments in the literature to link features to tonal nodes, e.g. Yip (1989) and Hyman (2011). This implies that linking features directly to TBUs is merely for expository convenience.

(11) Leftwards [+R] spread



It should be recalled that there are two different morphological restrictions on the application of this rule: the L **tone** that is raised must either be that of a prefix found between two H tones (§3.1) or of a stem preceded by a prefix L **tone** and followed by a H **tone** (§3.2). The first is an instance of **register** plateau where [-R] becomes [+R] between [+R] specifications. In both cases, the application of the rule results in a M **tone** with the features [-U, +R], as illustrated in the following derivations:

(12) UR		Leftwards [+R] spread	PR
tə- tóʔ tə- tsén		tə- tóʔ tə- tsén	[tətóʔ tətсэн]
	→	≡	
[-R] [+R] [-R] [+R]		[-R] [+R] [-R] [+R]	



To summarize this section, the resulting feature system of **Babanki** is as follows:

(14)		H	M	L
	Upper	+	-	-
	Raised	+	+	-

The use of features allows for a unified account of the Babanki derived M tone using one tone rule (albeit with constraints) thereby avoiding Hyman's abstract intermediate contour tones which are not realized on the surface. In the next section, I address the analysis of the JH downstep tone.

5 Babanki downstepped high tone

While the different sources of the M **tone** have been discussed above and its realization shown, nothing has been said about the ↓H **tone** which, like M is also a derived **tone** in the language. Downstep is commonly used to describe successive lowering of H tones in an utterance. The two kinds of **downstep** commonly mentioned in the literature are non-automatic **downstep**, phonologically conditioned by a floating L **tone** (Clements & Ford 1979; Pulleyblank 1986) or by one that had been lost historically, and automatic downstep, caused by an associated low **tone** (Stewart 1965; Odden 1982; Snider 1999; Connell 2014). Downstep has been described as a downward shift in **register** (e.g. Snider 1990; Snider & van der Hulst 1993; Snider 1999; Connell 2014). Automatic downstep occurs in **Babanki** but the focus in this study is on non-automatic downstep which has been noted in the **Babanki** nominal system (Hyman 1979; Akumbu 2011) as well as in the verb system (Akumbu 2015). As seen in the following data, the floating low **tone** that causes downstep in **Babanki** may be underlying:

(15) a. $\acute{\alpha}$ `-sé → $\acute{\alpha}\downarrow$ sé ‘to sharpen’
 $\acute{\alpha}$ `-sám → $\acute{\alpha}\downarrow$ sám ‘to migrate’
 b. $\acute{\alpha}$ `-bùm → $\acute{\alpha}$ bùm ‘to meet’
 $\acute{\alpha}$ `-sìm → $\acute{\alpha}$ sìm ‘to tighten’

As shown in (15a), a H verb stem is realized as a downstepped H after the infinitive prefix. Downstep can be accounted for by assuming that the H tone schwa of the infinitive prefix is followed by a floating L. The presence of this floating L tone is justified by the fact that the H tone of the verb root is realized on a lower register than the preceding H tone. When the H tone prefix is followed by a L tone verb, the verb tone does not change (15b). These data are analyzed as involving ↓H as opposed to the previous cases analyzed as involving M specifically because it is shown, subsequently (see Figure 1), that ↓H sets a new ceiling for subsequent Hs producing a terracing effect as opposed to M which results from the local raising of L and is obligatorily followed by H.

In the noun system, certain H tone stems have a following floating L tone in their underlying representation. Evidence has been presented that in Babanki, “class 7 nouns fall into three subclasses, A, B, C [corresponding to (16a, b, c)] which behave differently in context” (Hyman 1979: 163-164).⁵ Hyman illustrates the distinction between the three using noun-plus-noun (N1 of N2) associative constructions (AM). When H tone roots are in N1 position and are followed by the H tone of the AM, the latter is lowered to ↓H after A and B, but not C. Secondly, when in N2 position after a L toned AM, A and C become L-Lo, while B remains L-H. Finally, when in N2 position after the H toned AM, A becomes H-Lo, while B and C become H-↓H.

As said above, A and B cause the following H tone of the AM to be realized at a lower level than the preceding root H tone (16a,b):

- (16) a. kàfó ↓ká wì?
 kà-fó` ká wì?
 c7-thing AM c1.person
 ‘thing of person’
 b. kàkáj ↓ká ndòŋ
 kà-káj` ká ndòŋ
 c7-tin AM c1.potato
 ‘tin of potato’
 c. kàfú ↓ká wì?
 kà-fú` ká wì?
 c7-medicine AM c1.person
 ‘medicine of person’

⁵The historical origins of the different classes adopted synchronically by Hyman (1979) were: A = *LH, B = *HL, C = *HH.

- d. kàtyí ↓kó nyàm
kà-tyí` kó nyàm
c7-stick AM c9.animal
'stick of animal'

e. kàkím ká ká↓kú

kà-kím ká kà-kú

c7-crab AM c7-gift

‘crab of gift’

f. kàshí ká ká↓tán

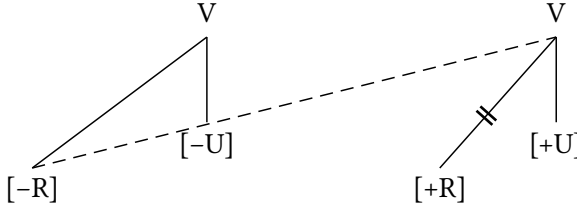
kà-shí ká kà-tán

c7-place AM c7-belt

‘place of belt’

Downstep of the AM H **tone** is best explained by the presence of a floating L **tone** on N1 noun roots. Hyman’s class C nouns (16c) do not cause downstep of the following H **tone** of the associative marker because they do not have a floating **tone** in their underlying representation. The forms in (16c) further show that the H **tone** of the AM spreads rightwards and delinks the L **tone** of the prefix of N2 nouns. It is this floating L **tone** that causes downstep of the H **tone** of N2 noun roots. Its [-R] feature spreads rightwards and delinks the [+R] feature of the following H **tone** as follows:

(17) Rightwards [-R] spread (Downstep)

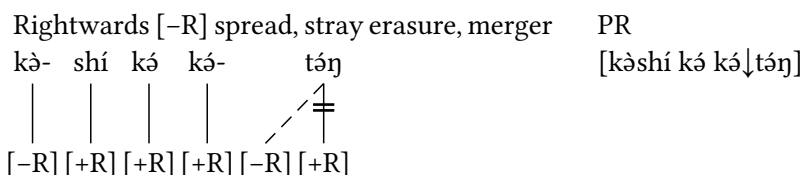


The application of this rule yields a ↓H **tone** with the features [+U, -R], as illustrated in the following derivations:

(18) UR Rightwards [-R] spread & stray erasure PR
 kà- fò ká wí? kà- fò ká wí? [kàfò ↓ká wí?]
 | | | | | | | |
 [-R] [+R] [-R] [+R] [-R] [-R] [+R] [-R] [+R] [-R]

(19) UR High tone spread⁶ & low tone delinking
 kà- shí ká kà- tán kà- shí ká kà- tán
 | | | | | | | |
 [-R] [+R] [+R] [-R] [+R] [-R] [+R] [+R] [-R] [+R]

⁶I have shown only the spread of [+R] here but it must be said that it is the entire **tone** root node that spreads both [+U,+R] and delinks [-U,-R] of the L **tone**.



Each [+U, -R], i.e., ↓H, sets a new ceiling for subsequent Hs such that H tones after the one downstepped in the same tonal phrase do not rise above it as seen in (20), where italics have been used to indicate downstep of all Hs following H:

- (20) kàkán ↓ká byí shóm ‘dish of my goats’
 nyám ↓sá wén shí sá ‘those animals of his’

The pitch traces in Figure 1 show lower F0 values (120Hz-125Hz) for all the H tones after ↓H compared to the F0 value of the H **tone** before ↓H which is approximately 138Hz (In this and subsequent Figures, vowels are demarcated by vertical lines and marked by **tone** labels (L, H, M, ↓H) on the second tier.)⁷

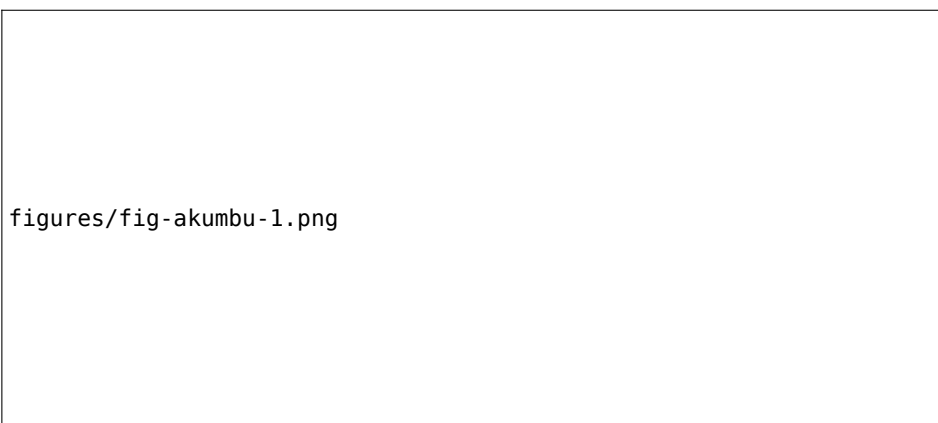


Figure 1: Downstep

We are now in a position to complete the tonal feature matrix to accommodate the downstepped high **tone**.⁸

⁷The pitch traces used in this paper were obtained from recordings of the author’s speech at the Phonology Laboratory at UC Berkeley and analyzed in Praat (Boersma & Weenink 2016).

⁸The matrix is said to be complete because although Babanki has two contrastive underlying **tone** heights but five in derived forms, I do not treat the fifth - the prepausal level low **tone** as separate phonological **tone** features because I analyze it as the late phonetic effect of a floating high **tone** that follows the low **tone** and prevents it from falling.

(21)

	H	↓H	M	L
Upper	+	+	-	-
Raised	+	-	+	-

An issue this raises is whether the M **tone** [-U, +R] and the ↓H **tone** [+U, -R] are phonetically distinguishable from one another. Hyman (1979: 162) has observed that “...the sequence H-M is identical, phonetically, to the sequence H-↓H.” He further states that “the two are distinguishable, however, since ↓H establishes a ceiling for future H tones within the same tonal phrase, while M does not.” The two tones therefore differ only in that they come from separate sources as well as on the effect they have on subsequent H tones. The pitchtracks in Figure 2 show that M and ↓H are not phonetically distinguishable.

figures/fig-akumbu-2a.png

figures/fig-akumbu-2b.png

Figure 2: Comparison between M and ↓H

In both phrases, the F0 of vowels with M and ↓H tones are around 120 Hz while the intervening H tone has an F0 of about 135 Hz, confirming that M and ↓H are phonetically very similar, particularly if all other factors surrounding the utterance are the same. It is not likely that the two tones are discriminable if they typically exhibit this small F0 difference. The phonetic sameness of Mid and downstepped H is not unique to Babanki as it has been reported in other languages e.g. Bimoba (Snider 1998).

Figure 3 and Figure 4 show that the phonetic pitch levels of H tones differ slightly depending on whether the preceding tone is M or ↓H. These pitchtracks show that a M tone may be followed by a H tone whereas the H tones following ↓H, are pronounced at the same level as the ↓H. Figure 3 shows that the F0 of vowels with H tone is about 126 Hz, slightly higher than the F0 of vowels with ↓H in Figure 4 which is about 120 Hz.

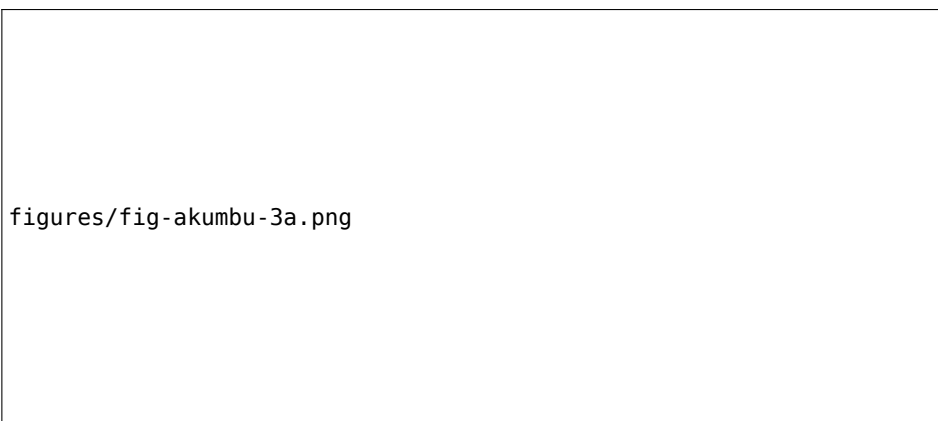


Figure 3: Comparison of H tone following M

6 Conclusion

Although there is no underlying M tone in Babanki, it appears on the surface when a prefix or stem L tone is raised in two separate conditions: prefix L-Raising takes place if it is found between two H tones while stem-Raising takes place if preceded by a L prefix and followed by a H tone. I have given a synchronic account of the processes that derive the M tone, arguing that it results from the regressive spreading of the [+R] feature of high tones which is blocked only by a nasal in NC initial roots. Downstep on its part results from the progressive spread

figures/fig-akumbu-3b.png

Figure 4: Comparison of H tone following ↓H

of [−R] feature of a floating L tone. Simple acoustic analyses have confirmed that both M and ↓H are realized with similar F0 levels.

It was stated above that the other Central Ring languages such as Kom have a much more general M tone (see Hyman 2005), while Western Grassfields Bantu languages instead have a downstepped ↓H. Babanki is unusual in having both M and ↓H. However, whereas the source of the M in other Central Ring languages is from an underlying /H/ that is lowered after a L, we have seen that Babanki creates output Ms from underlying /L/. Although Hyman's (1979: 166-168) account is unnecessarily abstract as a synchronic analysis, it clearly shows that M tone originates to avoid tonal ups and downs (Hyman 2010: 15). In particular, it is meant to avoid tonal contours surrounded by the opposite tone. As we have seen, unlike most other Ring languages, Babanki has rid itself of nearly all contours, but has developed a M tone level that is phonetically identical to ↓H, but phonologically distinct.

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Abbreviations

AM	associative (possessive) marker	INF	infinitive
c1-19	class Marker	n	noun
IMP	imperative	PREP	preposition

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Part II

Syntax and semantics

Chapter 2

Serial verb nominalization in Akan: The question of intervening elements

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In this paper, we hope to disambiguate the nature of look-alike intervening elements that appear between verbs in Serial Verb Constructions (SVCs) and Serial Verb Construction Nominalizations (SVCNs). To do so, we will first show that these intervening elements share the same phonological form. We will then show that although the intervening elements look the same on the surface, they can be differentiated by appealing to semantics and the construction from which the SVCN is derived. In doing so, we find that some of the intervening elements should, indeed, be regarded as TAMP markers, while others are nominalizers (NMLZ). In conclusion, we identify abstract schemata/templates that account for, and predict the positioning of, intervening elements found in Akan SVCNs.

1 Background

In this paper, we address the question of intervening elements in nominalized Serial Verb Constructions (SVCs).¹ Tense, aspect, mood and polarity (TAMP) markers

¹This project originated from a question from Clement Appah at the PhD defense of Qbádélé Bakari Kambon in which it was asked how do we know that the intervening elements between nominalized verbs from Serial Verb Constructions (SVCs) are actually tense, aspect, mood, polarity (TAMP) markers and not simply nominal markers. The video of the PhD defense can be viewed here: <https://youtu.be/QXDFwLV0Atc>.

surface with the same **phonological form** as nominalizing affixes (NMLZ) in **Akan**. We hope to show, with evidence, times in which such intervening elements are grammatical elements derived from the original **serial verb** construction – such as TAMP markers, etc. – and when they are actually nominal elements (NMLZ). To do so, we will first substantiate that nominalized verbs in **Akan** are made with /a-/ and /-N-/, which are the same affixes that can be found as TAMP markers in SVCs. While this identity of form could potentially lead to ambiguity in terms of analysis, there are some clear cues in terms of form, function and semantics that can help us to disambiguate and clearly identify intervening elements. What makes the investigation special with regard to SVCs relates to the intervening element available, depending on what type of SVC instantiated. In SVCs, the intervening elements may be either NMLZ or TAMP. We do not, however, find TAMP markers on single verbs; only nominalizers. The observation that TAMP can occur in the case of SVCs makes this investigation intriguing and it brings out a phenomenon that could not be observed if we were dealing with single verbs alone.

Pioneering work on SVC nominalization has been done in the last few decades (Bodomo & van Oostendorp 1994; Bodomo 2004; 2006; Hiraiwa & Adams 2008; Aboh & Dyakonova 2009; Kambon 2012). Following Bodomo & van Oostendorp (1994), much of this literature has followed the terminology of “Serial Verb Nominalization.” However, given that other constituents, when they appear in the SVC, also must surface in the nominal form, we prefer the term Serial Verb Construction Nominalization (SVCN). We feel that this terminology better accounts for all constituents of the construction and its nominalized form, whether or not these elements happen to be verbs or not.²

There are several potential ways of categorizing or typologizing SVCs. Such ways include on the basis of transitivity of included verbs, whether or not argument sharing exists, and/or based on the degree of idiomaticity, semantic integration and lexicalization. Following Osam (1994) categorization of SVCs based on degree of semantic integration (and associated degrees of lexicalization) Kambon (2012) showed that there are progressively greater degrees of integration ranging from the non-integrated Chaining Serial Constructions (CSCs) to Partial Lexicalized-Integrated Serial Verb Constructions (PL-ISVCs) to the most integrated Full Lexicalized-Integrated Serial Verb Constructions (FL-ISVCs).

The relationship between Semantic Integration and Lexicalization can be captured in Figure 1, which shows that as there is less conceptual distance between events, this is manifested in terms of progressively more lexicalization as expressed in the language.

²See Kambon (2012) and Kambon et al. (2015) for a discussion on revising some criteria and definitions of SVCs.

Separate sentences → Coordination → CSC → PL-ISVC → FL-ISVC → Single
Verb

Figure 1: Scale of lessening conceptual distance (Kambon 2012: 95)

Using Semantic Integration and Lexicalization as a means of categorization, Kambon (2012) showed that 98.63% (144 out of 146) of all FL-ISVCs identified have nominal counterparts while only 2.46% (17 out of 690) of all PL-ISVCs identified have nominal counterparts. CSCs, on the other hand seem to nominalize haphazardly as designata and denotata in the form of apparently random frozen proverbs, idioms/figures of speech and sentences.

While it is not our intention to rehash the entire means for identifying the FL-ISVCs to distinguish them from PL-ISVCs, it was decided that an independent means (other than nominalization itself, which would lead to circular argumentation) should be employed in order to categorize each one. Part of this came from Osam's (1994) initial discussion of FL-ISVCs, in which he writes, "Ranking high on the scale of integration are those verbal combinations that have become fully lexicalised into verb compounds and which are used as *lexicalised idioms*." (Osam 1994: 238, emphasis added). In recognizing that there was a link between semantic integration and idiomaticity, we employed Barkema's (1996) schema, which deals with defining characteristics of idioms on the basis of collocability, familiarity, flexibility and compositionality to test the idiomaticity and/or semantic integration of different types of SVCs identified for Akan. **Flexibility** deals with the degree to which a given idiom may take on various grammatical forms (i.e. number, specification, other types of morphological marking) without "breaking" the idiom and forcing a literal interpretation. **COMPOSITIONALITY** can be understood as the "degree to which the sum total meaning of the entire construction is readily derived from the parts contained therein" Kambon (2012: 47). **COLLOCABILITY** may be thought of as the "degree to which synonym or antonym alternatives can be freely switched in and out" Kambon (2012: 46). **FAMILIARITY** involves the currency of the idiom whereby it has become institutionalized to the point that the idiom, rather than the literal counterfeit form, is assumed by native speakers (Kambon 2012).

Using Barkema's (1996) schema, FL-ISVCs were identified on the basis of the following characteristics:

- Usually non-compositional
- Usually collocationally closed

- Usually inflexible
- Usually familiar (institutionalized)

In §3, we will argue that a key to understanding the nature of intervening elements in SVCNs is identifying the type of SVC source construction from which the SVCN is derived. Below, we illustrate with examples the various types of SVCs and their nominalized counterparts. We begin with examples of FL-ISVCs and nominalized counterparts.³

- (1) a. Yè-à-ká yèn hó á-bò mú.
1PL-PRF-touch 1PL.POSS body PRF-strike inside
'We have united ourselves.'
- b. Ñ-ká-bó-m(ú)
?NMLZ/?NEG-touch-strike-inside
'Unity'
- c. Ñkábóm hià yéń.
unity need 1PL
'Unity is important to us.'
- (2) a. Ȯ-ń-tú nè hó ń-kyé.
3SG.SBJ-NEG-uproot 3SG.POSS body NEG-give.as.gift
'He doesn't volunteer.'
- b. À-tù-hó-á-kyé
?NMLZ/?PRF-uproot-body-?NMLZ/?PRF-give.as.gift
'Volunteerism'
- c. Ȯ-wò àhùmbóró né àtùhóákyé.
3SG.SBJ-possess mercy and volunteerism
'He is merciful and has a volunteering spirit.' (lit. he has mercy and volunteerism)

Examples of FL-ISVCs with nominalized counterparts that have potentially ambiguous intervening elements:

- (3) a. Mè-ń-gyé ásém nó ń-tò mú.
1SG.SBJ-NEG-receive word DET NEG-throw inside
'I don't accept the story.'

³For consistency of presentation, examples come from **Asante** Twi unless otherwise indicated.

- b. Ñ-gyé-ń-tó-m(ú)
 ?NMLZ/?NEG-receive-?NMLZ/?NEG-throw-inside
 ‘Acceptance’
- c. Ñnyéntóm(ú) á-m-mà só wò hó.
 acceptance PST-NEG-come top at there
 ‘There was no acceptance there (between two or more people).’
- (4) a. Ǿ-à-twá àséím á-tò mè só.
 3SG.SBJ-PRF-cut matter PRF-throw 1SG.POSS top
 ‘He has falsely accused me.’
- b. Ñ-twá-ń-tó-só
 ?NMLZ/?NEG-cut-?NMLZ/?NEG-throw-top
 ‘False accusation’
- c. Dèè wó-á-ká yí nyínáá yè ñtwántósó.
 thing 2SG.SBJ-PRF-speak DEM all be false accusation
 ‘All that you are saying is a false accusation.’

A point that will be returned to later that should be noted here is that the prefix /a-/ in (1a) and (4a) is functioning as a **perfect** marker (PRF). Meanwhile /a-/ occurs in the nominalized SVC in (2b) and can be analyzed as functioning as a nominalizing prefix (NMLZ). Likewise, the prefix /N-/ in (1b), (3b) and (4b) seems to serve as a nominalizing prefix (NMLZ), while /N-/ in (2a) and (3a), a superficially similar /N-/, is NEG. Thus, the same phonological forms are serving different functions in the language. The disambiguation of these surface similarities of form is the basis of the primary research agenda of this paper.

PL-ISVCs were also identified as being generally on the other end of the scale as they are:

- Usually fully compositional
 - Usually collocationally limited
 - Usually semi-flexible (productive)
 - Usually partially familiar (somewhat institutionalized)
- (5) a. Ǿ-à-tó àdùàné á-dì.
 3SG.SBJ-PRF-buy food PRF-eat
 ‘He has bought food to eat.’

- b. Ñ-tǝ-dí-(é)
NMLZ-buy-eat-NMLZ
'Things bought and eaten.'
- c. ǝ-tǝá dí ñtódíé.
3SG.SBJ-often eat buying-and-eating
'He often buys what he eats.'
- (6) a. Mógyá nà nǎnǎnóm hwìè gù-ì.
blood PRT ancestors pour spill-PST
'It is blood that our ancestors shed.'
- b. Hwìè -gú-(ó)
pour-spill-NMLZ
'Pouring away'
- c. Hwìègúó kwà níé.
Pouring-away worthless be.this
'It is worthless pouring away.'

The examples in (7–8) show nominalized PL-ISVCs with potentially ambiguous intervening elements. Again, as noted in the case of FL-ISVCs (3–4), nominalizing affixes (NMLZ) may appear on the noun, e.g. (7b) and (8b), in which case they mimic the appearance of the **perfect** (PRF) /a-/ and negative (NEG) /N-/ prefixes, but without the semantic connotations that these carry once they appear as part of the nominal form.

- (7) a. Yè-à-fúá nó á-hwè nò.
1pl.SBJ-PRF-hold 3SG.OBJ PRF-beat 3SG.OBJ
'We have held and beat him.'
- b. Ñ-fùà-ñ-hwé
?NMLZ/?NEG-hold-?NMLZ/?NEG-beat
'Holding and beating'
- c. Sédèè wǝ-dí-ì nò ñfùàñhwé nó ñ-yé
manner 3PL-eat-PST 3SG.OBJ holding-and-beating CD NEG-be
'The manner in which they held him and beat him up is not good.'
- (8) a. Mé wǝfà á-wú á-gyà mè àdéé.
1SG.SBJ maternal-uncle PRF-die PRF-leave 1SG.OBJ thing
'My uncle has died and bequeathed me with something.'

- b. À-wú-ń-gyá-dé(é)
 ?NMLZ/?PRF-die-?NMLZ/?NEG-leave-thing
 ‘Inheritance’
- c. N’awúńnyádéé ñ-kò-sí àhé ínpó.
 3SG.POSS.inheritance NEG-EGR-stand how-much even
 ‘His/her inheritance did not even amount to much.’

Finally, CSCs were identified as having the following characteristics:

- Fully compositional or wholly non-compositional
- Flexible or inflexible
- Collocationally open or closed
- Familiar or non-familiar

- (9) a. Kà hyén kó-dú è-m-má èsúm ń-tó
 drive car EGR-arrive 3SG.SBJ-NEG.imp-let darkness NEG-encounter
 wò kwáń mú.
 2SG.OBJ road inside.
 ‘May darkness not catch up with you!’⁴ (Obeng 2001: 61)
- b. Kà-hyén-kó-dú(rú)
 drive-vehicle-EGR-arrive
 ‘May darkness not catch up with you!’ (Obeng 2001: 61)
- c. Yè-à-tò nò dín Kàhyénkódu
 1pl.SBJ-PRF-throw 3SG.OBJ name Kahyenkodu.
 ‘He/she was given the name Kahyenkodu.’
- (10) a. Ì-kó fòrò bóó.
 3SG.SBJ-fight climb rock
 ‘He/she fights then climbs a stone.’
- b. Ì-kó-fòrò-bóó
 NMLZ-fight-climb-rock
 ‘One who fights on rocky terrain’ (Obeng 2001: 79)

⁴With the connotation of ‘May a bad omen befall my enemy for his action towards me’.

- c. Òkófóròbóó yè òhéné bí díí.
 Òkófóròbóó be king INDF name
 ‘Okoforoboo is the name of a king.’

Now, in (11–12), we see examples of CSCs that also have potentially ambiguous intervening elements.

- (11) a. Wó-á-tò àbání nó á-pèṁ.
 2SG-PRF-encounter fortress DET PRF-knock.against
 ‘You have encountered the fortress and knocked against it.’
 b. À-tó-à-pèṁ
 ?NMLZ/?PRF-encounter-?NMLZ/?PRF-knock.against
 ‘The unsurpassable one’
 c. Nè ṁmráné nè Àtóàpèṁ.
 3SG.POSS praise.name be Atoapem
 ‘His praise name is Atoapem.’
- (12) a. Ñ-té m’ámánèhúnú nyínáá ñ-sèré mé.
 NEG-hear 1SG.POSS.catastrophe all NEG-laugh 1SG.OBJ
 ‘Don’t laugh when you hear of all my misfortunes.’
 b. Ñ-té-ñ-sèré.
 ?NMLZ/?NEG-hear-?NMLZ/?NEG-laugh
 ‘Do not hear and laugh’ (personal name).
 c. Yè-fré nò Ñtéñsèré.
 1pl.SBJ-call 3SG.OBJ Ntensere
 ‘We call him Ntensere.’

It is worth noting that while /a-/ and /N-/ may function as TAMP markers in clauses, they occur throughout the language as nominalizers (NMLZ), and not exclusively in the context of SVCNs.⁵ The following examples demonstrate this:

- (13) /a-/ as nominalizer (NMLZ)
- a. *dwo* ‘to be cool’ ⇒ *adwo* ‘coolness’ (i.e. *Mema wo adwo*. ‘I give you coolness/good evening.’)
 b. *dwene* ‘to think’ ⇒ *adwene* ‘thought/brain’ (i.e. *M’adwene ne se menkɔ*. ‘My thought is that I should go.’)

⁵For more discussion on nominal derivation in Akan, see Appah (2003).

- c. *didi* ‘to eat’ \Rightarrow *adidi(e)* ‘eating’ (i.e. *M’adidie asesa*. ‘My (manner of) eating has changed.’)
 - d. *dom* ‘to show grace towards’ \Rightarrow *adom* ‘grace’ (i.e. *Adom bi nti, εβεye yie*. ‘Because of a certain (show of) grace, it will be well.’)
- (14) /N-/ as nominalizer (NMLZ)
- a. *da* ‘to sleep’ \Rightarrow *nna* ‘sleep’ (i.e. *Nnansa yi nna koraa abo me*. ‘Recently sleep has been difficult for me.’)
 - b. *kyea* ‘to greet’ \Rightarrow *nkyea* ‘greetings’ (i.e. *Nkyea kyere ɔɔ*. ‘Greetings show love.’)
 - c. *kra* ‘to bid farewell’ \Rightarrow *nkra* ‘message’ (i.e. *Nkra a ɔde maa me nie*. ‘This is the message he/she left for me.’)
 - d. *kae* ‘remember’ \Rightarrow *nkae(ε)* ‘remembrance’ (i.e. *Nkaε da m’akoma soɔ*. ‘Remembrance lays on my heart.’)

In this section, we have provided a discussion of SVCs, including definitions, descriptions and illustrations of various types. In exemplifying SVCs, we have given an overview of characteristics prototypically associated with different categories into which SVCs may be grouped. We have also shown that SVCs can be nominalized and that similar looking elements, specifically /a-/ and /N-/, may appear in SVCs and SVCNs and in general as nominalizers in the language. When they appear in SVCNs, intervening elements /-a-/ and /-N-/ may potentially serve the same or different roles in the language including functioning as nominalization markers (NMLZ) as well as serving the grammatical function of TAMP marking. While this identity of form seems to present a level of difficulty in terms of disambiguation, in this paper, we intend to account for these intervening elements that appear between verbs in Serial Verb Construction Nominalization (SVCN). As such, we will show that for certain SVCs, upon nominalization, various finite characteristics such as tense, **aspect**, mood and polarity (TAMP) may be carried over into the noun form but they may perform other functions than TAMP. In §2, we will outline the methodology followed in this study. In §3, we will examine different types of SVCNs and show how intervening elements which are carried over from the SVC into the SVCN may be analyzed. In §4, we will propose two broad schemata or templates to account for **Akan** SVCNs. We argue these base template forms are the basic morphological schemas that native speakers know and utilize to develop new forms. Significantly, these schemata can be used to predict the nature of the intervening elements in an SVCN. §5 will present our conclusion.

2 Methodology

Examples of SVCNs were extracted from Osam (1994) and Agyeman (2002) as these were the two major works on semantic integration of SVCs in Akan. Using semantic integration as the basis of categorizing SVCs, each of these seminal works provided examples of FL-ISVCs, PL-ISVCs and CSCs. Given that each of these authors provided some of the most unambiguous and exemplary cases of each type of SVC, questionnaires were then developed based on such cases to get native speaker judgments on whether or not these SVCs could be nominalized. Additionally, using the aforementioned idiomaticity criteria, similar SVCs were identified from *The Dictionary of the Asante and Fante Language called Tshi* (Twi) (Christaller 1933), *Twi Nsem Nkorenkore Kyerewbea* wordlist (Department of Education 1971) Boadi (2005), *Twi Kasa Mmara ne Kaseso* and *Mfantse Nkasafua na Kasambirenyi Nkyerɛase: Dictionary of Mfantse Words and Idioms* (Bannerman et al. 2011). These texts were chosen due to their comprehensiveness, representativeness of various literary dialects of Akan and for the diachronic range of the language represented by them as a whole.

The study used purposeful sampling (Patton 2002: 230), primarily based on dialect of spoken Akan. In the first phase (P1), questionnaires were primarily administered at Accra (University of Ghana-Legon 48.1%), Cape Coast (University of Cape Coast 37.3%), and Winneba (University of Education-Winneba 17.9%). For P1, 75 participants mainly ranging from ages 21-40 were consulted, with most of them being literate speakers. For the second phase (P2), the bulk of participants were over 60 years old and were mostly non-literate. Taking advantage of the fact that most of the P1 participants were literate, questionnaires were distributed individually and respondents returned the forms filled out. Because P2 comprised mostly non-literate speakers, a different method of focus groups was employed wherein explanations of the nature of the study were provided and speakers gave their intuitions about nominalization and decomposition processes. For each phase, speakers of the main literary dialects of Akan, namely Asante Twi, Fante and Akuapem were consulted. For each SVC, speakers were asked to provide the corresponding nominal when one existed. Conversely, speakers were also given SVCNs and were asked to provide the SVC from which the nominalized form was derived so that both composition and decomposition processes would be adequately represented. Data was analyzed in order to ascertain whether or not there were similarities or differences in the kinds of SVCs (i.e. on the basis of transitivity, on the basis of argument sharing or on the basis of semantic integration/lexicalization) that could be nominalized. While there

were no significant behaviors on the basis of other aspects of SVC typology, it was found that lexicalization represented a salient feature effectively predicting nominalization behavior or lack thereof.

3 Analysis of intervening elements

In this section, we will exemplify SVCs and examine those for which derived SVCNs have intervening elements. As we showed in the background section, there are two major affixes: /a-/ and /N-/, which may serve as nominalizers. When /N-/ occurs within a **nominalized verb**, the first inclination might be to simply analyze it as a nominalizer, however one should be circumspect due to the fact that, in terms of function, the nasal affix in the language may serve as a (i) **negation** marker, e.g. (2a), (3a), (9a) and (12a); (ii) (singular or plural) nominal marker/nominalizer, e.g. (13a–d) or (iii) mood marker, e.g. (9a). It must be noted that /a-/ also has distinct manifestations as (i) past/**perfect** marker, e.g. (1a), (3a), (4a), (4c), (5a), (7a) and (8a); (ii) (singular or plural) nominal marker or a nominalizer, e.g. (13a–d); (iii) as a **conditional** marker (with a falling **tone**). In the following, we examine the status of intervening elements in different types of Serial Verb Construction Nominalization (SVCNs).

3.1 CSC Nominalization with Intervening elements

In this section, we consider the status of intervening elements in Chaining Serial Construction Nominalization (CSCNs). CSCs in **Akan** appear to retain TAMP markers when they are nominalized. This is not out of the ordinary as it has been attested by Koptjevskaja-Tamm (1993: 18) that cross-linguistically, “nominalizations may contain tenses, auxiliaries and adverbs.” This phenomenon can be seen in other instances of nominalization which are even more clear-cut, in which the intervening element is not phonologically (or semantically) ambiguous as it may be in the case of /-a-/ and /-N-/. In such cases, we are clearly dealing with aspectual markers. For example, in (15a–b), we find cases of the egressive (EGR) and ingressive (INGR) aspects in a nominal, which can only be interpreted as such as there are no phonologically similar phenomena that could occur in such positions in **Akan**. Thus, we find a language-internal justification of the notion that nominals may contain aspectual elements more prototypically associated with verbs.

- (15) a. Kò-tó-bé-tón
EGR-buy-INGR-sell
'Retail selling' (lit. go (and) buy (and) sell)
- b. Kò-dwàré-bé-dí-wó-dèé
EGR-bath-INGR-eat-2SG.POSS-thing
'Leprosy' (lit. go bathe (and) come (and) eat yours)

Table 1 shows more examples nominalized CSCs that have intervening elements.

Thus, in the case of *ntensere* (12, replicated here as 16), for example, because the source construction has **negation** and the resulting nominalized form also maintains the same semantic sense of **negation**, we argue that /-N-/ should be understood as **negation** (NEG) that has been transferred from the CSC to the CSCN.

- (16) a. Ñ-té m'ámánèhúnú ñ-sèré mé.
NEG-hear 1SG.POSS.catastrophe NEG-laugh 1SG.OBJ
'Don't laugh when you hear of all my misfortunes.'
- b. Ñ-té-ń-sèré.
NEG-hear-NEG-laugh
'Do not hear and laugh' (personal name)
- c. Yè-fré nò Ñtènsèré.
1pl.SBJ-call 3SG.OBJ Ntensere
'We call him Ntensere.'

Another clear example is *Amfaamfiri* (17a-c), which has TAMP markers indicating PST and NEG, again in both the source CSC and the resulting CSCN.

- (17) a. Ô-à-m-fá nè bóné á-m-firí nó.
3SG.SBJ-PST-NEG-take 3SG.POSS badness PST-NEG-lend 3SG.OBJ
'He/she didn't forgive him/her for his/her badness.'
- b. À-m-fá-á-m-firí
PST-NEG-take-PST-NEG-lend
'Unforgiving one.'
- c. Àmfáàmfirí bà-à há.
unforgiving one come-PST here
'The Unforgiving One came here.'

2 Serial verb nominalization in Akan: The question of intervening elements

Table 1: CSC Nominalizations with intervening elements

SVN	<div>Christaller (1933)</div> <div>EDG (1971)</div> <div>Obeng (2001)</div> <div>Boadi (2005)</div> <div>Bannerman et al. (2011)</div>				
1. a-bisa-nsu-a-ma-nsa COND-ask-water-COND-give-alcohol 'liberal, generous'	✓	✓	✗	✓	✗
2. a-di-a-boro-wo-kora PRF-eat-PRF-surpass-2SG-calabash 'fungus'	✓	✗	✗	✗	✗
3. a-hu-a-bɔ-birim PRF-see-PRF-strike-tremble 'one who inspires fear'	✗	✗	✓	✗	✗
4. a-ko-a-ma PRF-fight-PRF-give 'doubling'	✓	✗	✗	✗	✗
5. pɛ-wo-a-yɛ-dɛn look-2SG-PRF-do-what 'why should I look for you? (name)'	✗	✗	✓	✗	✗
6. n-te-n-sere NEG-hear-NEG-laugh 'do not hear and laugh (name)'	✗	✗	✓	✗	✗
7. a-to-a-pem PRF-encounter-PRF-collide 'unsurmountable point'	✗	✗	✓	✗	✓
8. a-wu-a-kyɛ PRF-hear-PRF-laugh 'one who dies for others'	✗	✗	✓	✗	✗
9. a-hunu-ani-a-n-ka-nsa PRF-see-eye-PRF-NEG-touch-hand 'lattice window'	✓	✓	✗	✗	✗

It is also worth noting that in each of the above constructions, in a manner consistent with how SVCs operate in the language, the same TAMP is found on each verb of the SVC as well as on each verb in the SVCN that is derived from it. Thus in (17a–b), the only logical choice for the identity of the affixes on V1 and the V2 is the **past tense** (PST). The primary factor that leads to this analysis is the marking of **negation** on both verbs as retained in the nominal. In **Akan**, the **negation** of the **past tense** calls for /a-/ on each verb before the negative prefix. Again, this is understood as compelling evidence that, particularly for CSCs, elements from the finite construction are carried over into the nominal form showing that some nominals are more verb-like.

It can be noted that because nominalized CSCs are primarily used as *designata* and *denotata* or names of persons, places, things, etc., this is typically the sentential context in which such nouns can be found. While Table 1 shows examples of nominalized CSCs with intervening elements, it should be kept in mind that there are innumerable sentences that have the potential to be frozen and applied as *designata* and *denotata* to any person, place or thing either as a proper name or nickname. We have shown above that there are some SVCNs whose intervening elements may be ambiguous, yet when we examine the SVC source construction, we find that for **Akan** CSCs, it is possible to transfer the TAMP marker from the SVC to the SVCN. Given that this is possible, it then follows that intervening forms should be manifested by the same **phonological form** that they had in the CSC in the CSCN.

3.2 PL-ISVC nominalization with intervening elements

As shown in Figure 1 above, we see that the micro-events expressed in the verb series in PL-ISVCs are closer together than CSCs in terms of conceptual distance. In other words, CSCs are closer to being like clauses separated by **coordination** or even more like separate sentences than PL-ISVCs (see **Osam 2004**). Another way of looking at it from the complementary side of the continuum is to say that PL-ISVCs are closer to being like Single Verbs than CSCs. Thus, in this section, we will look at how PL-ISVCs behave with regard to nominalization. The first thing that becomes imminently clear is that there are comparatively less attested PL-ISVC nominals with intervening elements than CSC nominals (see Table 2). Although this appears to be the case, it should be noted that PL-ISVC nominalization is still a productive process as in the last few years, a very prominent case of *dumsɔ* (*dumsɔ*) ‘intermittent blackouts’ has been coined by **Akan** speakers in Ghana to describe the situation of the erratic power supply issues that plagued the country at the time. Thus, while we see that the main function

2 Serial verb nominalization in Akan: The question of intervening elements

of CSC nominalization is to designate and denote persons, places or things, PL-ISVCs can also be created on the fly, so to speak, to refer to a situation. Below, we will turn our attention to those PL-ISVCs with intervening elements.

Table 2: PL-ISVNs with intervening elements

SVN	<div> <div>Christaller (1933)</div> <div>EDG (1971)</div> <div>Boadi (2005)</div> <div>Bannerman et al. (2011)</div> </div>			
1. m-fua-n-hwe NMLZ-hold-NMLZ-beat 'holding and beating'	✓	✗	✗	✗
2. tɔ-nko-a-da fall-nod-NMLZ-sleep 'nodding off to sleep'	✗	✗	✓	✗
3. a-wu-n-nya-de(ɛ) NMLZ-die-NMLZ-leave-thing 'inheritance'	✓	✓	✓	✓

- (18) a. Yè-à-fúá nó á-hwè nò.
1pl.SBJ-PRF-hold 3sg.OBJ PRF-beat 3sg.OBJ
'We have held and beat him.'
- b. M̃-fuà-n-hwé
NMLZ-hold-NMLZ-beat
'Holding and beating'
- c. Sédèè wɔ́-dí-ì nò m̃fùànhwé nó ñ-yé.
manner 3pl-eat-PST 3sg.OBJ holding-and-beating CD NEG-be
'The manner in which they held him and beat him up is not good.'

According to [Barkema \(1996\)](#), we find that compositionality (or lack thereof) is one of several criteria used to identify an SVC. In the case of *mfuanhwe* (18a–b), we see that the fully compositional meaning is transferred directly from the SVC (18a) to the SVCN (18b). In other words, *fua* means 'to hold' and *hwe* means

‘to beat’ in both the SVC and SVCN. While this may not seem remarkable, it is a salient feature in terms of differentiating PL-ISVCs from FL-ISVCs, each of which nominalizes to vastly different degrees, with PL-ISVCs rarely nominalizing while FL-ISVCs almost always have nominal counterparts recognizable by native speakers.

In (18a), note that while the source SVC has the **perfect** (PRF) /a-/, this TAMP marking is not carried over to the SVCN (18b). Rather, what we find is /-N-/ on both verbal elements. It may be recalled that in the **Akan** language /N-/ can function as a marker of **negation**, plurality, nominalization or mood. In the case of (18b), we see clearly that the nominal has not retained any type of TAMP marking from the SVC form as there is no semantic connotation of **negation** as we saw in the instance of nominalized CSC *ntensere*, for example (see 16a–b). Further, there is no indication of plurality or mood marking in the SVCN form (18b). This leaves the only possible option for /-N-/ as being the marker of nominalization. Thus, again, by way of a method for identifying intervening elements, we can look to the source SVC construction for guidance in understanding which, if any, intervening elements have been retained and transferred over to the derived SVCN. It is worth noting here that in our analysis of SVCNs, both verbs are marked with the same **phonological form** of /-N-/ at α -place of articulation. These types appear to follow a concordance marking type of system of finite SVCs similar to what is seen in **Bantu** and other **noun class** languages (Aikhenvald & Dixon 2006).⁶

⁶When there are two markers of nominalization in the same SVN, typically they have the same **phonological form**. Although presented as unlikely, Kambon (2012: 211) entertained the remote possibility that /-N-/ comes from an elided conjunction *na*, which in **Akan** joins two clauses or sentences, as shown below:

- (i) Fua na hwe → fua n’hwe
 hold conj beat
 ‘hold and beat’

In such an analysis, the initial /N/ would then still be interpreted as a nominalization marker. What makes this analysis unappealing is the fact that cross-dialectally, the intervening /-N-/ is not obligatory. Interestingly enough, Boadi (2005) has *mfuahwee* without the intervening /-N-/. Boadi’s version of the PL-ISVC patterns after the base template form typical of FL-ISVCs, which typically do not include any intervening elements.

Table 3: FL-ISVNs with intervening elements

SVN	<div> <div>Christaller (1933)</div> <div>EDG (1971)</div> <div>Boadi (2005)</div> <div>Bannerman et al. (2011)</div> </div>			
1. m-bɔ-n-to-hɔ NMLZ-hit-NMLZ-throw-there 'procrastination'	✓	✓	✓	✓
2. m-fa-(n)-to-ho NMLZ-take-NMLZ-throw-body 'comparison, example'	✓	✓	✓	✓
3. a-firi-n-hyia NMLZ-leave-NMLZ-meet 'meeting of an annual date'	✓	✓	✗	✓
4. n-nye-n-to-m(u) NMLZ-receive-NMLZ-put-inside 'acceptance, admission'	✓	✗	✓	✓
5. m-mɔ-to-so NMLZ-hit-throw-top 'accusation'	✓	✗	✗	✓
6. a-tu-ho-a-kyɛ NMLZ-uproot-body-NMLZ-give	✓	✓	✗	✓
7. a-kɔ-a-ba NMLZ-go-NMLZ-come 'welcome' (greeting)	✓	✓	✓	✗

However, in (19b), there is no active sense of the perfective in use here that would relegate the noun volunteerism to the **perfect**. This can be seen in (19c) in which the future tense is used with the TAMP-neutral *atuhoakye*. Thus, the intervening element /-a-/ in *a-tu-ho-a-kyɛ* is properly analyzed as a nominalizer (NMLZ) (19b). Again, while it is evident that the same **phonological form** of /-a-/ can be used for

different purposes in the language, it is also clear that by assessing TAMP marking in the source SVC and determining if any of these TAMP markers are/can be realized in the SVCN, we are able to disambiguate and see which /-a-/ we are dealing with in a given construction. Because FL-ISVCs as lexicalized idioms are consistently expected to express abstract concepts, we expect that TAMP marking will not occur regardless of whether the intervening elements are /-a-/ or /-N-/. As mentioned in §1, FL-ISVCs are prototypically expected to be non-compositional, collocationally closed, inflexible, and highly familiar due to their high degree of idiomaticity and concomitant lexicalization. Thus, similarly in (20a–b), we find that even when there is **negation** in a given SVC, TAMP marking is not carried over into the SVCN as we found with CSC ntensere.

- (20) a. Mè-ń-gyé w’ásém nó ń-tò mú.
 1SG.SBJ-NEG-receive 2SG.POSS.word DET NEG-throw inside
 ‘I don’t accept your word.’
 b. Ñ-gyé-ń-tó-m(ú)
 NMLZ-receive-NMLZ-throw-inside
 ‘Acceptance’
 c. Ñnyéntóm(ú) bíará á-m-mà só wò yèh ñtám(ú).
 acceptance any PST-NEG-come top at 1pl.POSS between
 ‘No acceptance came about between us.’

In light of the above discussion, for all intents and purposes, we seem to have a continuum where, as posited by Vendler (1967), with regard to verbs in general, SVCNs derived from CSCs retain more verb-like features upon nominalization while others derived from ISVCs are more prototypically nominal with such verbal elements such as TAMP marking stripped away. According to Vendler (1967: 131) there are imperfect nominals and perfect nominals, “one in which the verb is still alive as a verb, and the other in which the verb is dead as a verb, having become a noun.” It is important to note that rather than a sharp dividing line that would come with a “necessary and sufficient conditions” type of approach, here, we appear to be dealing with a continuum among nouns where some may be more on the noun-like side of the continuum (eg. ISVCs) while others may be more verb-like (eg. CSCs).

What we learn from the different SVCNs is that although there is potentially an instance of surface ambiguity with regard to the nature of intervening elements, once the source construction and resulting SVCN are examined, it becomes clear in each case that only one of the potential options is viable in any given case. For

instance, we observe that *ntwantoso* ‘false accusation’ and other FL-ISVCNs with intervening elements are more “noun-like” i.e. stripped of TAMP morphology. Additionally, its meaning is non-compositional, it is highly idiomatic and highly lexicalized. It is also highly familiar, as is expected for a more prototypical FL-ISVC. In his 2012 study, Kambon reports that when given the individual elements of the FL-ISVC *twa...to...so*, 100% of his respondents produced the SVCN and 93% of respondents gave ‘false accusation’ as the meaning of the noun. Thus, Kambon (2012) concludes that *ntwantoso* is probably one of the most recognizable, current and institutionalized cases of FL-ISVC nominalization. It then becomes increasingly clear that once we are able to identify the source construction in terms of semantic integration, lexicalization and idiomaticity, we may reasonably come to expect certain patterned behavior (or lack thereof) with regard to whether or not TAMP marking will be actualized upon nominalization.

Here, it is also worth noting that intervening elements in SVCNs in general and ISVCNs in particular are the exception rather than the rule with less than ten identified out of just short of 150 attested cases of FL-ISVC nominalization. Further, for the SVCNs with intervening elements, not all speakers produced forms with intervening elements. In fact, it was oftentimes more likely that speakers of Asante and Akuapem (dialects of Akan spoken in different regions of Ghana) would produce forms without intervening elements than that they would produce variants containing them. This begs the question of the motivation for the intervening elements when they do appear. One explanation could be wholly phonological, where the nasal /-N-/ may actually be phonologically conditioned and semantically null. This pattern was typical of Fante speakers interviewed in Phase Two study groups, in which they regularly produced forms such as *ngyen-tom* from *gye...to...mu*, *ntwantodo* from *twa...to...so*, *mbɔntohɔ* from *bɔ...to...hɔ* etc. Supplementing this analysis is the idea that, originally, FL-ISVCs were derived from CSCs and ultimately from separate clauses and/or sentences. This progression is illustrated in Figure 2 below.

It should be noted that although this is given as the putative route by which FL-ISVCs came to exist in the language, it is not thought that each and every FL-ISVC currently in the language had to necessarily take this same route. Rather, we argue that once these SVCs with different levels of semantic integration and concomitant lexicalization, appeared as classes of ISVCs, they provided a base template by which other similar SVCs could be created and nominalized on analogy with prototypical instantiations. We will look at these base template forms in §4 below.

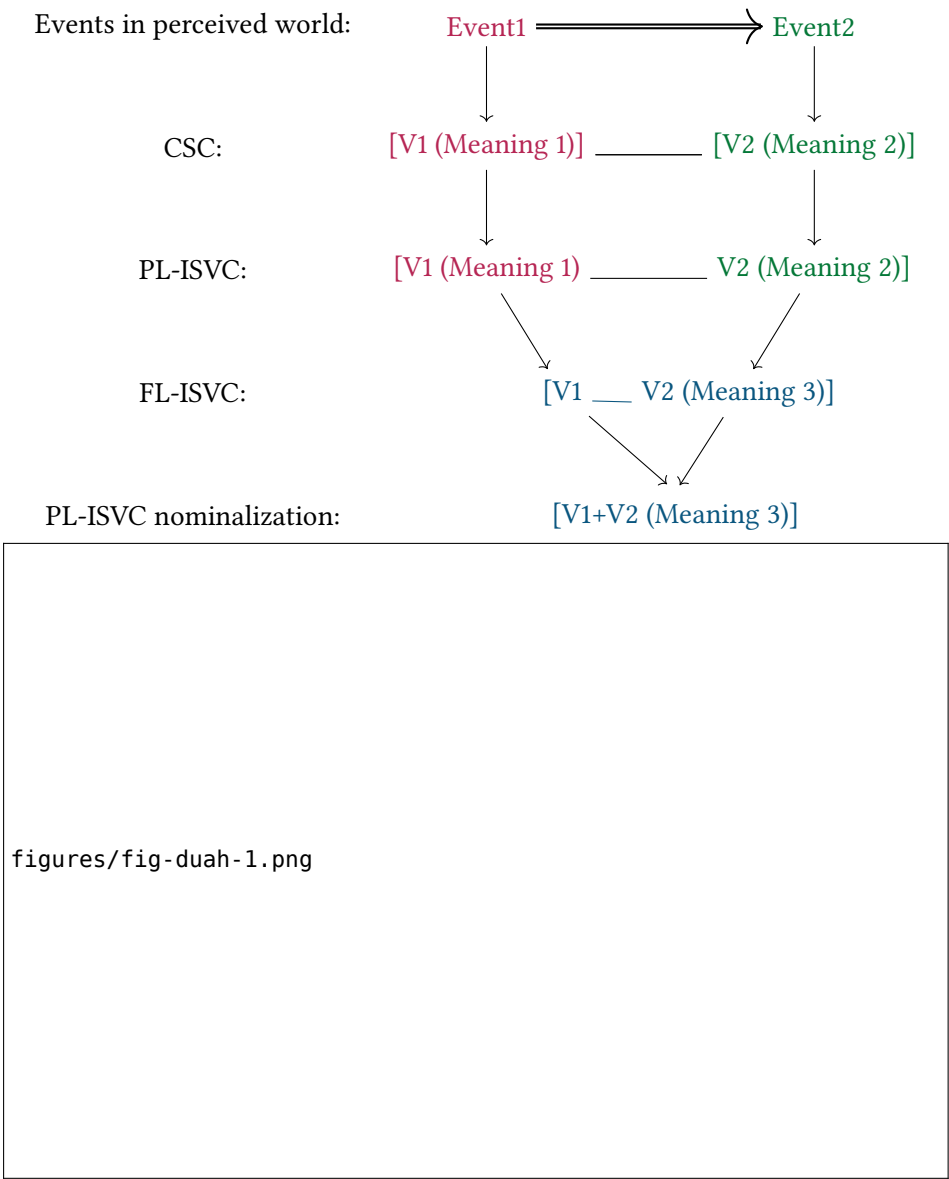


Figure 2: Iconicity from perceived world to nominalization (Kambon 2012: 41)

4 SVCN schemata and the nature of intervening elements

In this paper, we have illustrated that **Akan** SVCs have been shown to be of two main types, namely Integrated Serial Verb Constructions (ISVCs) and Chaining Serial Constructions (CSCs) (Osam 1994; Agyeman 2002; Kambon 2012; Kambon et al. 2015). We have also shown that tracing the SVCN back to its SVC source is indispensable as a method of determining the precise nature of intervening elements. We have argued that because CSCs are more verb-like, they retain more verbal elements like TAMP marking, while ISVCs are more noun-like and therefore, they are more likely to strip off this marking. In this section, we derive abstract schemata from the forms of the distinct types of nominals found in **Akan** and discussed in this study. We suggest that these schemata provide a way to predictably account for the internal structure of the various types of SVCNs found in **Akan**, paying particular attention to intervening elements (or lack thereof) between the erstwhile verb series in the SVCN complex. These schemata should enable us to reliably determine what type(s) of elements will occur in specific positions within SVCNs that are derived from different types of SVCs. To this end, we posit two (2) broad categorizations for all **Akan** SVCNs based on the level of semantic integration and lexicalization of the SVC from which the SVCN is ultimately derived.

The schemata proposed for SVCNs are based on the classification of SVCs based on semantic integration and lexicalization. Schema 1 (21) involves SVCNs (4) derived from ISVCs and Schema 2 (22) involves SVCNs that are derived from the CSC type.

(21) Schema 1: [([NMLZ]) V₁ ([NMLZ]) V₂ ([NMLZ]) ([OBJ])/([RELN])]_{ISVCN}

- likely FL-ISVC or PL-ISVC (formally)
- meaning derived non-compositionally (FL-ISVCs) or compositionally (PL-ISVCs)
- likely not to retain **verbal inflection**

(21') Ñ-twá-ń-tó-só

NMLZ-cut-NMLZ-throw-top

‘false accusation’

- (22)
- likely CSC
 - meaning derived haphazardly and functioning as denotata and designata
 - likely to retain verbal inflections

- (22') Ñ-té-ń-sèré
 NEG-hear-NEG-laugh
 'Do not hear and laugh' (personal name).

Thus, even though the SVCN in (4) and (4) appear to have the same intervening element /-N-/, with the same **phonological form** and **tone**, the intervening element /-N-/ does not have the same status, meaning or function in the two nominals. /-N-/ in the nominalized FL-ISVC (4) should be understood as a nominalization marker (NMLZ) while /-N-/ in the nominalized CSC (4), it should be understood as a **negation** marker that is retained in the SVCN as is evident in the semantics of the nominal. In other words, because *ntensere* is a Chaining Serial Construction Nominal (CSCN) it retains TAMP markers upon nominalization and its meaning is also compositional. Thus, unlike in FL-ISVC nominalization, in the CSC, each verb is still active and, therefore, TAMP is still in play all the way through to the point of nominalization. These two possibilities of nominalization and schemata for disambiguating the two are helpful in terms of providing a featural approach to predict what type of intervening elements should be expected to occur, when they do appear within the SVCN. Thus, when we have a CSCN, we can anticipate that TAMP markers will appear in specific positions vis-à-vis the verb-derived elements in the SVCN. In ISVCNs, we are more likely, on the other hand, to be dealing with nominalization markers where such elements appear.

Further, in the case of Schema 1, we posit that NMLZ markers may be viewed as instantiations of recycled morphology (Booij 2007). In other words, it may be argued that preexisting morphological markers have been reanalyzed and re-deployed with a different function over the course of time. Such an analysis would be consistent with a redeployment of markers of the defunct **noun class** system proposed by Osam (1993) as singular and/or plural nominal markers synchronically. In other words, the affixes found on nouns from the vestigial **noun class** system have also been reanalyzed as nominalizing markers for the primary function of consolidating two erstwhile disparate verbs into a single unit.

With specific reference to intervening elements, we argue that degree of lexicalization (and attendant semantic integration) may have a predictive power with regard to whether TAMP information will be retained or it will be stripped. Thus we can begin to form certain expectations with regard to nominalization behavior and the types of affixes that will be found in SVCNs based on the degree of lexicalization of the SVC source.

4.1 Counterfeit

In §1, we briefly alluded to the fact that /a/ can also serve as a **conditional** marker in the language, although when it is found as a **conditional** marker, it rules out the source construction as an SVC. Also, although orthographically the **conditional** marker /a/ is written the same as the other types outlined in §3, there is also a difference tonally where /a/ cliticizes on the preceding word (particularly when that word ends with an open syllable) and it also tends to be pronounced with a falling **tone** in careful speech, unlike other surface look-alikes. All the same, because conditionals can be nominalized, it is worth briefly outlining a third schema to account for what we term “counterfeit SVCNs.” Again, in order to differentiate this nominalized **conditional** construction from other superficially similar constructions, it is imperative that we take a look at the source construction from which it is derived. In pursuing this line of thinking, we find that in **Akan**, there are some nominals that may have the appearance of an SVCN but that may involve a more complex structure than that which we find in an SVCN. These counterfeit SVCNs that masquerade as proper SVCNs can actually be traced back to **conditional** constructions marked with an inter-sentential **conditional** marker /a/. Consider the structure of the nominals in (23) and (24).

- (23) a. Wó-tàñ mé á, wú!
2SG.SBJ-hate 1SG.OBJ cond, die.imp
‘If you hate me, die.’
b. Tàñ-mé-á-wù
Hate-1.sg-cond-die
‘If you hate me, you can (go ahead and) die.’ (a personal name)
c. Òkráman nò dín dè Tàñ-mé-á-wú.
dog DET name take Tanmeawu
‘The dog’s name is If-you-hate-me-then-die.’
- (24) a. Wó-dò mé á, brà!
2SG.SBJ-love 1SG.OBJ cond, come.imp
‘If you love me, come!’
b. Dò-mé-á-brà
love-1.sg-cond-come
‘A distant place’ (lit. if you love me, come)

- c. Mè-firi Dɔmeabra
 1SG.SBJ-come-from Dɔmeabra.
 ‘I come from Dɔmeabra.’ (name of a town)

In examples (23) and (24), although we can see /-a-/ as an intervening element, it should be noted that this is an entirely different phenomenon from that which we have been addressing throughout this paper with regard to SVCNs. First, the source construction is not an SVC in the first place as each sentence in (23a) and (24a) has a matrix clause and an **embedded clause**. It is also important to note that clauses in **Akan** must have a **subject** whether overt or not (Osam 1994: 262; Saah 1994: 120, see Duah 2013: 164-168 for an exceptional case). In the examples above, the covert **subject** of the **subordinate clause** is you and the clause is understood as being expressed in the imperative. With regard to the **embedded clause**, the imperative reading negates other readings. In (24a) no reading other than the **conditional** reading is available as the very morphological form is one that only surfaces in the imperative *bra* ‘come’ specific to a 2SG addressee and is in **complementary distribution** with *ba* ‘come’ in all other contexts. Thus, although the intervening /-a-/ makes these nominals appear similar to true SVCNs on the surface, a close analysis of the underlying morphosyntactic and semantic features reveal them to be reflective of entirely different linguistic phenomena.

Thus, we propose that multi-clausal nominalization (MCN) is formulated based on an entirely different schema from those delineated in (21–22) as shown below:

(25) Schema 3:

[s1 ([SBJ]) ([TAMP]) [V₁] ([cond]) [s2([SBJ]) ([TAMP]) [V₂] ([TAMP]) ([OBJ])]
]_{MCN}

- two separate clauses (either of which may or may not happen to include a SVC)
- compositional in finite form
- usually traceable back to source utterance in nominalized form

The discussion so far has revealed that SVCNs which are derived from FL-ISVCs tend to pattern more on the side of pure nominal with less finite verbal features/characteristics carried over. SVCNs with a PL-ISVC source seem to be in-between often structurally patterning after FL-ISVCs, while semantically patterning after CSCs in terms of retention of individual verbal semantics. Chaining Serial Constructions (CSC) tend to have most of their verbal features carried over into the nominal as exemplified in the retention of TAMP markers. Meanwhile, on the far-left end of the spectrum are the counterfeit SVCNs, which are more

sentence-like and retain their semantic and morphosyntactic features, even upon nominalization. Thus, while all of these possibilities may look the same on the surface, in truth they are not. Figure 3 illustrates these possibilities via a tripartite continuum.



Figure 3: Nominalization tripartite continuum

5 Conclusion

In conclusion, we find that in each case, whether CSC, ISVC or **conditional** sentence, using the source construction as a litmus test, we are consistently able to disambiguate superficially similar intervening elements in the nominalized construction. Further, it has been demonstrated that there is a continuum whereby there are more verb-like SVCNs that co-exist in the language with more nounlike SVCNs. The more verb-like SVCNs are those which are derived from Chaining

Serial Constructions (CSCs), which retain TAMP markers when they are present in the source SVC. The more noun-like SVCNs are those which are derived from PL-ISVCs and FL-ISVCs. In the case of SVCNs, their recycled morphosyntactic elements point to preexisting morphological and/or syntactic items redeployed in a different (typically more or less grammatical) function over the course of time (Booij 2007).

Abbreviations

1/2/3	first/second/ third person	NEG	negative
CD	clausal determiner	NMLZ	nominalizer
COND	conditional marker	OBJ	object
CONJ	conjunction	PL	plural
DEM	demonstrative	POSS	possessive
DET	determiner	PRF	perfect
EGR	egressive	PRT	particle
INGR	ingressive	PST	past tense
INDF	indefinite	RELN	relator noun
N	any nasal at αplace of articulation	SBJ	subject
		SG	singular

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Part III

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