

## Low Tone Spreading in Buli \*

Anne Schwarz

Humboldt University of Berlin

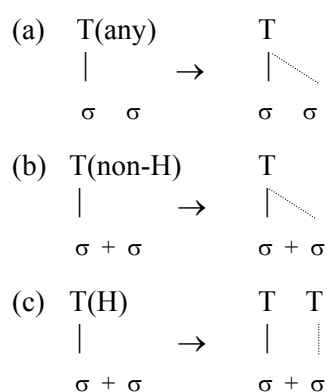
### Introduction

In Buli, tone<sup>1</sup> indicates lexical information as well as grammatical information<sup>2</sup>. The changing of tone patterns regularly observed on lexemes is covered best by an autosegmental approach with autonomous tonal and segmental tiers. It reveals considerable deviations between underlying and surfacing tones at several morpho-syntactic points. Realization of tone is sometimes oppressed or delayed. Cause for such disturbances is in all cases a low tone which spreads to the right and affects following high tones with different results. The aim of this paper is to show how L spreading acts and how it is integrated in the system of tonal contrast.<sup>3</sup>

The tone-bearing unit (TBU) is the syllable which often coincides with the morphological unit. Assignment and realization of more than one tone to the syllable is possible under certain

circumstances. At ordinary speech rate, contours from tone combinations are realized preferably on syllables containing long vowels or nasal codas and are simplified elsewhere. Toneless segments within a morpheme like epenthetic vowels receive their tone from the left and associate with the preceding tone available (1a). Across the morpheme boundary, tone may also spread from left to right, but H and non-H tones do not associate in a unified way. A non-H spreads the same manner within and across morphemes, whereby a single tone is multiply-attached (1b). A H on the other hand doubles across morpheme boundaries with the result that an inherently toneless morpheme gets its own associated H (1c).

(1) Association of tone (T)  
within resp. across (+) morpheme  
boundaries:



\* This article is the revised version of a paper presented at the 3<sup>rd</sup> International Gur Colloquium in Kara (Togo), in February 2001. It is based on data elicited during fieldworks carried out within the German Research Project on Gur Languages (DFG).

<sup>1</sup> Tonemic and tonetic high, mid, and low tones are symbolized by the following capital letters and diacritics: H á, M ā, L à. Floating tones are put into square brackets in underlying representation.

<sup>2</sup> Within the verbal paradigm, tone is of vital importance for grammatical indications. Verb tone is not lexically distinctive in Buli.

<sup>3</sup> AKANLIG-PARE (1997) also treats the subject of L spreading, but he doesn't touch the problem of M tones and differs somewhat in the analysis of underlying tones.

The two ways an underlying toneless syllable associates with the tone of the preceding syllable across a morpheme boundary (b and c) are often undistinguishable on the surface, because both copy from left. Only if the syllabic morpheme appears in utterance-final position, the doubling of a H onto a following toneless TBU across a

morpheme boundary does not apply. Instead, the toneless morpheme is associated with a default L, a surface dissimilation of the H-H sequence realized elsewhere (1d).

(d) Utterance-final absence of H doubling:



Apart from toneless TBU's following a H in utterance-final position, the sequence of morphemes with adjacent identical H or non-H tones in the underlying representation and in surface realization is possible.

### Tone contrast in nouns

If nouns are checked in different frames, a contrast of three distinctive levels H, M, and L tones with lexical function has to be established. Some minimal pairs with two contrasting tone patterns are displayed in (2-4): in (2) L contrasts with H, in (3) L with M, and in (4) M with H.

- |     |                  |                |  |
|-----|------------------|----------------|--|
| (2) | bìik “speech”    | bíik “child”   |  |
| (3) | bàŋ “lizard”     | bāŋ “bangle”   |  |
| (4) | pūūk “pregnancy” | púúk “stomach” |  |

It is however difficult to find a contrast of L, M, and H in identical environments at the same time and so far I only know of the two examples given in (5) and (6)<sup>4</sup>:

- |     |                |                         |  |
|-----|----------------|-------------------------|--|
| (5) | síúk “road”    | (6) kók “mahogany tree” |  |
|     | sīūk “navel”   | kōk “fur, feather”      |  |
|     | sìük “catfish” | kòk “ghost”             |  |

The lack of a common three-way-contrast and certain distributional restrictions are conspicuous for an original two-way-contrast between only L and H. AKANLIG-PARE (1988) proposes a tonal

system with two distinctive tones, but he ignores the phonetic reality of a third level and doesn't differentiate surface M and H in his description. Since M pitches in Buli cannot simply be treated as automatically downstepped H tones and contrast with surface H, this is an under-differentiation<sup>5</sup>.

POULTER also votes in favour of a two tone system in which M occurrences are the result of HL and vice versa combinations, “even though that introduces the difficulty of accounting for all of the mids” (1985: 56)<sup>6</sup>. His view is supported by the partly diverging surface tone patterns nouns including M pitch display in certain tonal environments. I therefore regard M as derived by combinations of H and L tones.

Among the tone analysis of nouns in related Oti-Volta languages toneless stems and / or tone contribution by noun class suffixes play a major role. Cognate nouns which carry in Buli M pitch are often characterized by a special tone pattern within a two tone system. One explanation for this group of phonetically H-H nouns (stem-suffix) in Moore and Dagbani for example is the anticipation of the H of the noun class suffix on nouns with a toneless stem. OLAWSKY correlates the pitch of nouns in Dagbani with stress: “H tones are attracted to stressed syllables if these are inherently toneless” (1999: 181). In the language Kɔnni which is closest related to Buli, the majority of noun class suffixes is H and there are nouns with Buli cognates with a M pitch that are analysed by CAHILL (1999) as toneless, too.

Since Buli has a relatively overt noun class system in which most nouns consist of a stem and a noun class suffix or a trace of it, stem tones or

<sup>5</sup> My own papers need revision in this respect, too. Among the publications with tone indications, those given in KRÖGER'S Buli Dictionary (1992) are most reliable.

<sup>6</sup> Without autosegmental approach he could not outline the underlying tone combinations appropriately in his provisional sketch.

<sup>4</sup> The first triple (5) was “discovered” by POULTER. The M noun of the second triple (6) has a variant long form *kùŋkɔk*.

suffix tones could have spread and fused into a third M level. Unlike some other Oti-Volta languages, however, in Buli there is no evidence for inherent tones of the noun class suffixes. This means that a LH or HL combination assumed to underly M is associated with the stem and independent of the toneless suffix.

The majority of nouns contains a stem of 1 to 3 syllables and noun class suffixes of -C, -V, or -CV structure. The morphophonological interplay between the noun stem's and the class suffix' structure allows only part of the suffixes (mainly plural suffixes, but cf. footnote 7) a syllabic surface realization. In (7) these additional tone bearing syllables are segmented by a hyphen. It can be seen that polysyllabic nouns with a H on the noun stem are followed by a L suffix (a), but that with non-H noun stems (b, c) no tone changes occur between stem and syllabic (plural) suffix.<sup>7</sup>

(7) (a) H on noun stem

nóái / nóá	“mouth/s”
jéín / jén-à	“egg/s”
míík / míí-sà	“rope/s”
chíŋmárik / chíŋmári-sà	“star/s”

(b) M on noun stem

dāī / dāā	“day/s”
bāīn / bān-ā	“boundary/s”
bīāk / bāā-sà	“dog/s”
būlōrūk / būlōrū-tā	“nasty person/s”

(c) L on noun stem

bùì / bùò	“granary/s”
bèìn / bèn-à	“year/s”
tìàk / tàà-sà	“mat/s”
kùŋkùtùŋ / kùŋkùtùn-tà	“hill/s”

The most straightforward analysis for these nouns would be the assignment of a H, M, or L tone to the noun stem and the assumption of toneless class suffixes onto which the stem's tone spreads, as long as the suffix qualifies as TBU.<sup>8</sup> The L of the syllabic suffix following a H noun stem (7a) is due to the absence of H doubling. As introduced in (1d), the toneless suffix gets a default L and doesn't double the preceding H in utterance-final position (8a versus b).

(8) H doubling and its utterance-final absence:

(a)	H	L	L	→	H	H	L	L
	kək-sa	sɪ-ta			kók-sá	sì-tà		
					“three mahogany trees”			
(b)	H	H		→	H	H	L	
	ka	kək-sa.			ká	kók-sà.		
					“It is mahogany trees.”			

Excluding a tonemic status of M in favour of an underlying tone combination, the question remains how a toneless suffix gets its M pitch. If the suffix associates with the immediately preceding tone of the combination according to the principles outlined in (1b) and (1c/d), the phonetic outcome in utterance-final position should be always a L (9).

(9a)	LH	→	LH	L
	∇		∇	
	σ + σ		σ + σ	

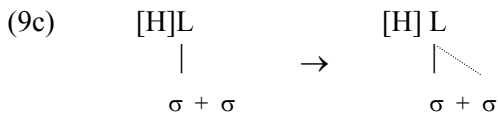
(9b)	HL	→	HL
	∇		∇
	σ + σ		σ + σ

Since a L tone on the suffix is only after the LH combination (9a) empirically supported, the HL combination from (9b) seems to be better analysed

<sup>7</sup> In the dialect of Chuchuliga, syllabic class suffixes regularly occur with singular nouns, too (cf. the Chuchuliga noun for “star/s” *chíŋmári-gà* / *chíŋmári-sà*).

<sup>8</sup> Most noun stems in Buli bear the same tone in singular and plural and derivational classes. A few nouns (mainly body parts) are exceptions.

as containing an initial floating H which influences the following L multiply associated (9c). This would yield a steady M pitch on stem and suffix as displayed by the nouns in (7b).<sup>9</sup>



### Tone combination in nouns

Apart from the major part of nouns with a single tone level borne by the stem, there are also nouns with tone combinations associated with the stem (10-11). Among them are overt compounds and complex nouns which cannot be separated into meaningful components or include partial reduplication, but also nouns with monosyllabic stems. The falling combinations (10) comprise all theoretically possible cases HM, HL, and the rarer ML. They are always realized on different syllables of the noun stem and the two tones apparently belong to different morphemes.<sup>10</sup>

The occurrence of rising combinations (11) within the noun's stem are more restricted. Dominant is the LM rise which can even be found within a single syllable. Like with falling tone combinations, word-initial M is rare, but there are some cases of compounds containing the MH combination on two different morphemes. On monosyllabic noun stems this rise does not occur.<sup>11</sup> There is a suspicious gap then among the rising noun stems, since the LH combination does not occur and the LM rise which is found within

multi- as well as monosyllabic stems dominates the scene.

(10) Stem with falling tone combination

[HM], [HL], [ML]

níd5ā / níd5-bā	“man/men”
bímbààŋ / bímbààn-sà	“child/ren” <sup>12</sup>
kūtū-wùsùm / kūtū-wùsùm-à	“bicycle/s”

(11) Stem with rising tone combination

[LM], [MH]

gðŋ / gɔn-à	“gourd/s”
bìmbìlì / bìmbìlì-sà	“pot/s”
ŋìŋ-gbàŋ / ŋìŋ-gbàŋ-sà	“skin/s”
ŋìn-lām / ŋìn-lān-tā	“flesh”
sūnsūn-nándūb / -nándūb-sā	“middle finger/s”

The assumption following the lack of LH is, of course, that the H is represented at the surface by a M. Indeed, for nouns with a LM glide on one stem syllable there are further hints for an underlying LH sequence. The syllabic plural class suffixes of some nouns in (11) are realized L, not M as suffixes of most level M nouns do. The suffix of these nouns becomes L only in utterance-final position where an underlying toneless suffix does not double the H from the preceding syllable, but gets a default L.

### L spreading and upstepped L

An underlying tone sequence of a L followed by H is regularly changed in its surface representation in Buli. This can be observed in the definite noun form<sup>13</sup> which contains a special suffix with a grammatical H. These – partly class

<sup>9</sup> This view allows the L to represent a default tone, and not necessarily a lexical tone input.

<sup>10</sup> Outside nouns, there are a few cases with falling contours within one syllable, but they are rare and confined to CV-pronouns and suffixes merging with L syllabic nasals or vowels.

<sup>11</sup> The combination of more than two surface tones can be found with the stem of complex compounds and reduplications where HLM is dominant.

<sup>12</sup> In the rare singular form, the noun may refer only to a small child which is part of a group of children. The more frequent plural noun is used as a generic term denoting “youth”.

<sup>13</sup> Nouns are supplied with the definite suffixes whenever talking about referents already spoken of. These suffixes represent deictic bound elements comparable to a definite article.

sensitive<sup>14</sup> – definite suffixes are of CV structure and are therefore always TBU's. If the suffix' H is preceded by a L, it is realized as M (or LM in careful speech) (12).

(12) H definite suffix *-kú*:

síúk síu-kú “the road”  
 sīūk sīū-kú “the navel”  
 sìùk sìù-kū “the catfish”

Although the lowering of H after L looks like a case of automatic downstep, the reverse analyse as an upstepping phenomenon (13) seems more favourable regarding other surface tone changes in Buli as well. The upstep is the result of a process that starts with a L spreading onto the immediately following H syllable. The original H becomes dissociated and is floating, but finally it shows up by the rising of the word-final syllable from L to M.

(13) L spreading and upstepped L:

L H      L [H]      L H  
 | |      /      | /  
 siu-ku    siu-ku    sìù-kū

L spreading is a regular process that leaves no underlying LH sequence within the utterance coming out as such on the surface. Its result depends considerably on the syllable weight of monosyllabic H morphemes, since tone glides are rarely articulated on a short vowel. A lexicalised compound in which a L and a H noun are put into series will serve for illustration (14). Its second constituent, the noun for “child”, has an underlying H stem which changes on the surface when preceded by a L syllable.

(14) kò-biik / kò-bi-sà “patrilinear relative/s”  
 compounding: father(1/2)-child(5/6)-sg/pl  
 cf. bíík / bí-sà “child/ren”

The initial L of the compound expands to the right onto the following H noun where the H is dissociated (15). In the singular (a), the floating H comes out by upstepping the L which has invaded its TBU, but the H has now drawn back to the right margin, i.e. to the second mora of the long vowel. In the plural (b), association of tone to the final syllable takes place before L spreading. The class suffix *-sa* is a potential but toneless TBU which cannot double the preceding H in utterance-final position. After it has got the default L instead, the word initial lexical L expands right and creates a floating H on the second syllable. Since there is only a short vowel available in the noun stem on which tone can be realized, the original H shows up by an upstep of the expanded L on this vowel.

(15) L spreading resulting in upstepped L:

(a) L H      L [H]      L H  
 | |      /      | /  
 kò-biik    kò-biik    kò-biik

(b) L H      L H L      L [H]L      L HL  
 | |      | | |      / |      / |  
 kò-bi-sa    kò-bi-sa    kò-bi-sa    kò-bi-sà

It is evident that the dissociated H is not deleted, but always needs to manifest itself. If the original morpheme it is docking back to contains more than one mora or even more than one syllable, the combination of the two tones L and H within one morpheme due to L spreading will show up at its right margin in form of a rising LM glide (multimoraic) or a final M syllable (multisyllabic). If there is only one mora available in the originally H morpheme, the expanded L must share it with the H. Because at average speech rate, a LM contour on a short vowel is hard to produce and to perceive, the common result is a M pitch.

<sup>14</sup> The definite suffixes distinguish between five singular classes also reflected by the pronominal concord, but in plural they only differentiate between class 2 and the rest while there are four pronominal concords. Since the nouns of class 2 denote only humans apart from loanwords, the distribution in plural roughly correlates with the semantic categorization [ $\pm$ human].

### L spreading and H shifting

The floating H may also show up in a different way. If it is followed by a TBU associated with a H, it shifts rightward as demonstrated by the definite forms of the former compound (16). In the singular (a), the initial L expands onto the following H stem and creates a floating H which shifts to the right. It leaves its former TBU to the expanded L and docks at the definite suffix, a syllable already associated with a H. The sequence of underlying LHH tones is consequently realized LLH.

In the plural (b), the compound's initial L spreads alike, but the position for H shifting differs from the singular noun due to the toneless syllabic class suffix *-sa*. Since not in utterance-final position, the suffix doubles the preceding H. When L spreading operates, the dissociated H of the second noun stem shifts right to the originally toneless noun class suffix.

#### (16) L spreading resulting in H shifting

(a)	L	H	H	→	L	[H]	H
	kɔ-	bii	-ka		kɔ-	bii	-ka
				→	L	[H]	H
					kɔ-	bii	-ká

(b)	L	H	H	→	L	HH	H
	kɔ-	bi-sa	-ŋa		kɔ-	bi-sa	-ŋa
				→	L	[H]H	H
	kɔ-	bi-sa	-ŋa		kɔ-	bi-sá	-ŋá

The reason why the surface L of the compound's second syllable cannot spread further lies in the absence of a general OCP constraint across morpheme boundaries. Whenever a L has completely taken over the domain of a H which

has shifted right, it faces a TBU associated with two H tones. This double-H block is responsible for the limitation of L spreading onto only one following H morpheme.

### L spreading and the morpheme boundary

H shifting does only apply when there is a following morpheme already associated with a H available which can act as host for the floating H. Despite the deviation between the underlying tone structure and the surface pattern, the contrast between underlying H and L morphemes is maintained. In (17), three nouns with different lexical stem tones are preceded by a L possessive pronoun and provided with a H definite suffix. The L tones expanding on a following H definite suffix respectively a H noun stem are underlined. A L preceding a M stem does not spread at all. For the differentiation of the other two forms “my road” and “my catfish” the absence of the OCP for the two adjacent H syllables across the morpheme boundary is vital. If adjacent H tones could be merged into one, the L wouldn't be blocked here after it has spread over the domain of the first TBU and could expand further which would render the definite forms of both nouns undistinguishable. (18a) illustrates the importance of two existing H tones in “my road” compared to only one H in (b) “my catfish” in the underlying process.

#### (17) L spreading on noun resp. definite suffix

H stem	M stem	L stem
síú-kú	sīū-kú	sìù-kū
“the road”	“the navel”	“the c.fish”
<u>ñ</u> sìù-kú	ñ sīū-kú	ñ <u>sìù</u> -kū
L H H	L M H	L L H
“my road”	“my navel”	“my c.fish”

(18a)	L	H	H	→	L	[H]	H
	n	siu-	ku		ñ	sìù-	kú
							“my road”

not: L H      L H      L H  
 |    ^    →    |    /    →    |    /    )  
 n siu-ku    n siu-ku    \*ñ siù-kū

(18b) L L H      L L H  
 | | |    →    | | / )  
 n siu-ku    ñ siù-kū      “my c.fish”

In associative constructions (19) with a definite possessor, the H definite suffix ensures that L spreading can never affect the following possessum noun (a). But with an indefinite possessor noun, L spreading onto the possessum is possible and happens whenever a H of the possessum comes into contact with a L from the preceding possessor (b).

(19) (a) def. possessor:      (b) indef. possessor:

nùì-mù jéín	nùìn-jèìn
bird(9/6)-sg.df egg(3/4)-sg	bird(9/6)-egg(3/4)-sg
“bird’s egg”	“bird(’s) egg”
L [H] H	L H
/	/    )
nùì-mù jéín	nùìn-jèìn
*nùì-mù jèìn	*nùìn-jéín

The two tone realizations of the H postposition *zúk* “on top” in (20) are likewise determined by the number of underlying H tones. In both cases the L associated with the initial noun stem triggers L spreading. In the left column, the L of the noun stem expands only onto the H definite suffix and is then blocked at the postposition by its double H association. In the right column, the same postposition is affected by L spreading, because the class suffix *-sa* is toneless. In this case, a L already linked with two syllabic morphemes can still spread further (21).

(20) 2 H tones:      1 H tone:  
 nùì-mù zúk      nùìn-sà zúk  
 bird(9/6)-sg.df top(7/4)-sg    bird(9/6)-pl top(7/4)-sg  
 “on top of the bird”    “on top of birds”

(21) L H      L H  
 |    |    →    |    /    )  
 nuin-sa zuk      nuin-sa zuk

**Left and right association of floating H**

Whether the H immediately following the L upsteps the preceding L or shifts to a following H is a matter of its final left or right association. The choice for the direction is not free, but the number of adjacent H tones across a morpheme boundary determines which of the complementary processes will apply. Both directions are summarized by the following examples which contain a L possessive pronoun triggering L spreading on the H noun stem either followed by another H TBU (22) or not (23).

(22) Additional H: right association (H shifting)

L [H] H  
 |    /    |  
 wà gbà ñ-ká      “his leather/book” (def.)

L [H] H H  
 |    /    |    |  
 wà gbà ñ-sá-ñá      “his leather/books” (def.)

(23) No additional H:  
 left association (upstepped L)

L H  
 |    /    )  
 wà gbà ñ      “his leather/book”

L H L  
 |    /    |    |  
 wà gbà ñ-sà      “his leathers/books”

The overt L spreads without departing from its original TBU on toneless as well as on H syllables. On the surface, it is multiplying, but in the underlying structure it is represented by one tone multiply associated. H tones on the other hand may double in the underlying representation

under certain conditions, a process by which another cycle of spreading is stopped after the H has dissociated from its original TBU.

### L spreading from M nouns

In several nominal constructions (compounds, attributive qualification of nouns by postposed adjectives) only the phrase-final constituent is marked for gender and number by its (in)definite suffix(es). In these constructions all non-final constituents use to appear in a morphologically reduced stem form. If L and H stems happen to follow each other, L spreading occurs in the usual way. In (24a), there is no overt L which could spread and consequently no tone change of the three H tones in surface realization. In (b), the H “emphatic” pronoun for the first person singular has been replaced by the unmarked pronoun which consists of a L homorganic nasal and affects the H stem *bí* of the noun *bíík* / *bísà* “child/ren”. As seen before, the L spreads and the shifting of the underlying H onto the following H adjective *-fíík* “small” prevents further spreading of the L onto the adjective.

(24a) *mí bí-fíík*                      *mí bí-fíí-ká*  
 1sg child(5/6)-s(5/6)-sg    1sg child(5/6)-s(5/6)-sg.df  
 “my small child”            “my small child”

(24b) *m̄ bì-fíík*                      *m̄ bì-fíí-ká*  
 1sg child(5/6)-s(5/6)-sg    1sg child(5/6)-s(5/6)-sg.df  
 “my small child”            “my small child”

While the stems of nouns associated with only one H or L per syllable retain their underlying tones in non-final position within these nominal constructions, nouns with M stems most often don’t. They are not only segmentally truncated, but also use to change the M into a L borne by the bound stem (25).<sup>15</sup>

(25a) *kpīāk, jéín*                      (b) *ŋīrī, -yéŋ*  
*kpà-jèin*                                  *ŋì-yèŋ*  
 fowl(5/6)-egg(3/4)-sg              neck(3/4)-one(5/-)-sg  
 “fowl egg”                              “one neck”

As displayed in (25), the L of these stems exerts the usual L spreading effects on following nouns or adjectives with a H stem. Hence, there can be no floating H at the end of the initial noun stem which would be expected to prevent the spreading of the L onto the following H constituent.

The way underlying H and non-H tones expose themselves is displayed by two nouns of similar segmental structure in (26)<sup>16</sup>. In the indefinite forms, their tone realization differs by the LM versus M on the second syllable and at the plural suffix *-sa*. As soon as these nouns are attributed with the H definite suffix, in the first noun L spreading is revealing better. Here (a), the initial L expands completely onto the second H TBU while the H shifts to the right. In (b), the tone of the second syllable doesn’t change and maintains its steady M, i.e., there is no instance of L spreading.

(26a) Indef. and def. forms of L-H stem:

*dā-bīāk* / *dā-bāā-sà* “courtyard/s”  
*dā-bīà-ká* / *dā-bāā-sá-ŋá* “the ~”

(26b) Indef. and def. forms of L-M stem

*kpà-dīāk* / *kpà-dāā-sā* “cock/s” lit: fowl-male/s  
*kpà-dīā-ká* / *kpà-dāā-sā-ŋá* “the ~”

Likewise both noun stems differ before H morphemes other than the definite suffix. In (27), they occur in a reduced stem form before the H adjective *-fíík* / *-fíísà* “small”. In (a) where the first two syllables are associated with an underlying L-H sequence, L spreading occurs in

---

noun’s stem retains its M, it is often segmentally less reduced than the L stem.

<sup>16</sup> The first noun (a) seems to be a compound, but I do not know whether it can be segmented into two meaningful components. The second noun (b) is a construction of the noun stem of *kpīāk* “fowl” followed by adjective *-dīāk* / *-dāā-sā* “male”.

---

<sup>15</sup> The change from M to L is not obligatorily and doesn’t apply in some nominal constructions. If the



the second H syllable and is blocked at the final adjective. In (b) however, L spreading affects the final adjective, because the M of the intermediate adjective has changed into a L stem form.

(27a) L-H stem with H adjective:

dà-bà-fíík / dà-bà-fíí-sà “small courtyard/s”  
dà-bà-fíí-ká / dà-bà-fíí-sá-ŋá “the small ~”

(27b) L-M stem with H adjective:

kpà-dà-fíík / kpà-dà-fíí-sà “small cock/s”  
 kpà-dà-fíí-ká / kpà-dà-fíí-sá-ŋá “the ~”

L [H] H H	L L [H] H
\ /	\ /
dà-bà-fíí-ká	kpà-dà-fíí-ká

but

A simple H stem onto which a preceding L has expanded does definitely not work as explanation for a M adjective like *-dīāk / -dāāsā*. Since it bears its steady M after a H noun stem, too<sup>17</sup>, a LH combination could be associated with the monosyllabic stem of the adjective. There is however nothing that supports the existence of this combination. Whether the L originates from the preceding morpheme or whether it is already associated with the same TBU as the assumed second H tone is, the expected realization should be the same and is not matched.<sup>18</sup>

### Regional absence of L spreading

L spreading on H syllables as it has been illustrated with data from the Buli at Wiaga is found in the major part of the language area. Nevertheless, there are some regions at its fringes where L doesn't expand on following H tones. Most obvious is the absence of L spreading and its

<sup>17</sup> cf. *kpán-dīāk / kpán-dāāsā* “guineafowl cock/s” lit. guineafowl-male/s.

<sup>18</sup> Compare the first noun of ex. (11) which in fact contains an underlying combination of L and H tone on its monosyllabic stem.

consequences in the Buli from Chuchuliga, a village at the northern border. (28) gives some examples for syntagmas that involve L-H tone sequences in which an overt L regularly spreads right in Wiaga (W), but doesn't in Chuchuliga (C). Despite the difference in surface realization, there is a remarkable correspondence between underlying L-H sequences in the Buli of both places.

(28) L-H correspondence in Wiaga and Chuchuliga

- |     |   |                      |
|-----|---|----------------------|
| (a) | W: wà lèē-bà<br>C: wà léé-bà<br>c11 daughter(1/2)-pl<br>“his daughters”                     | L H L<br>  \ /       |
| (b) | W: tì bì-sá-ŋá<br>C: tì bí-sá-ŋá<br>1pl child(5/6)-pl-df<br>“our children”                  | L [H] H H<br>  \ /   |
| (c) | W: tìì-mù zúk<br>C: tìì-mú zú-gù<br>tree(9/6)-sg.df top(7/4)-sg<br>“on top of the tree”     | L [H] H<br>  \ /     |
| (d) | W: wà gèbì mii-ká.<br>C: wà gèbì míi-ká.<br>c11 cut rope(5/6)-sg.df<br>“He's cut the rope.” | L L [H] H<br>    \ / |

The L possessive pronoun in (a) spreads onto the following H noun stem in Wiaga, but it doesn't in Chuchuliga. Attribution of default L to a toneless noun class suffix following a H in utterance-final position (suffix *-ba*) on the other hand occurs in both Buli varieties. In (b) the plural noun class suffix *-sa* without inherent tone is not placed utterance-finally and therefore doubles the preceding H without surface dissimilation in both places. L spreading onto the noun stem *bí* and H shifting onto the class suffix happens only in Wiaga. In (c) the L of the initial noun's stem spreads onto the H definite suffix in Wiaga and the H shifts right. In Chuchuliga, the L doesn't

spread and the postposition contains a syllabic class suffix that gets a default L. Finally in (d), L spreads from the verb form onto the H stem of the nominal object in Wiaga only.

Because of the general absence of L spreading, surface consequences resulting from left re-association of the affected H (phonetic M or LM) are unknown in Chuchuliga. Nevertheless, there are several M occurrences based on other underlying tone combinations (29, underlined).

(29) M correspondence in Wiaga and Chuchuliga

- (a) W: bàŋsàŋà ká pī.  
 C: bàŋsàŋá ká pī.  
 lizard(5/6)-pl-df PRD ten  
 “The lizards are ten.”
- (b) W: kù yùg kù jīukú.  
 C: kù yùg kù jīukú.  
 cl7 move cl7 tail(7/8)-sg.df  
 “It moved its tail.”
- (c) W: ŋmān jàn chù<sup>m̄</sup>.  
 C: ŋmān jàn chù<sup>m̄</sup>.  
 again come tomorrow  
 “Come back tomorrow!”

## Conclusion

L spreading is in most parts of the Buli area a very productive process that is not confined to special grammatical environments like associative constructions. It is triggered by overt L tones. These tones do not only spread from or to certain bound morphemes, and L tones with lexical and grammatical function spread alike, whether from pronouns in possessive or subject function, from noun stems or from preverbal particles. They also expand from verb onto postverbal complements and from conjunctions onto an initial H syllable of the following noun phrase or clause. L spreading and left H re-association result in phonetic M realizations. Because the outlined principles of H re-association are not met by the tone patterns of

many M nouns (and verb forms), their M pitch cannot be derived from a LH source.

## References

- Akanlig-Pare, George. 1988. *Towards a phonological study of tone in the Wiani dialect of Buli*. B.A. paper, Dep. of Linguistics, University of Ghana, Legon.
- Akanlig-Pare, George. 1997. Tonal structure of Buli phonological nouns. *Gur Papers / Cahiers Voltaïques* 2: 63-67.
- Cahill, Michael C. 1999. *Aspects of the morphology and phonology of Kɔnnɪ*. Dissertation, Doctor of philosophy, Ohio University. Ann Arbor: UMI Microform edition.
- Kenstowicz, Michael, Emmanuel Nikiema, and Meterwa Ourso. 1988. Tonal Polarity in two Gur Languages. *Studies in the Linguistic Sciences* 18:1, 77-103.
- Kröger, Franz. 1992. *Buli-English dictionary. With an introductory grammar and an index Buli-English*. Münster / Hamburg: Lit.
- Odden, David. 1995. Tone: African languages. In John Goldsmith (ed.), *The handbook of phonological theory*, 445-475. Cambridge, Mass. & Oxford: Blackwell.
- Olawsky, Knut. 1999. *Aspects of Dagbani grammar. With special emphasis on phonology and morphology*. München / Newcastle: Lincom Europe.
- Poulter, Todd. 1985. *Buli Phonology*. ms.