Information structural reflections in the tone system of Buli and some related Gur languages of Northern Ghana

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Preliminary version

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Abstract

Buli is a tonal Gur language of the Oti-Volta group in Northern Ghana. After outlining the basic features of the tonal system in Buli, it is explored whether and in which way pitch respectively phonemic tone is approached as means to indicate information structural distinctions and how prosodic means correlate with the pragmatic categories of topic and focus. The paper also presents parallel findings for the close relatives Kɔnni and Dagbani.

I am going to explore whether the information structural categories in some West African tone languages of the Gur family are reflected by certain tonal features, a question that arose in the course of my participating in the SFB on information structure. What I am going to present to you today are not detailed phonetic studies with final resolutions but I rather want to outline the field of investigation and discuss some intermediate results of work still in progress. For this, I mainly concentrate on the Ghanaian language Bùlì, which belongs to the Oti-Volta subgroup of the Gur family of Niger-Congo. Parallel findings from two related Ghanaian languages, Konni and Dagbani, which support my analysis, are mentioned only occasionally. The data, especially those on Buli, were sampled during repeated field stays within the language area over the last years.[1]

The structure of the presentation is as follows:

1. Tone in Buli and comparative remarks concerning Konni and Dagbani
2. IS categories like focus expressed by pitch/tone?
    2.1 Redundant pitch/tone marking of focus?
    2.2 Disambiguating pitch/tone marking of focus?
3. Grammatical verb tone – subject or topic agreement?
4. Conclusion

1. Tone in Buli and close relatives

Does the fact that Buli belongs to the Gur group tell us anything about the specific type of tone system to be expected?

Like in other African tone languages, in Gur, we deal with register tones where tonal contours are not representing tonemes but rather tone combinations. Apart from that, the Gur family, comprising almost 100 languages, constitutes quite a heterogeneous group with regard to tone, ranging from a complete lack of phonological tone (Koromfe, Rennison 1997), via a majority of languages having two tones, to languages with up to four contrastive tones (Supyire, Carlson 1994). We find languages where tone has lexical and grammatical function in the nominal and/or verbal complex (an extreme case being Kulango, with almost no lexical tone, Elders, p.c.), and there are also some Gur languages for which consonant-tone interactions have been reported (Moore, Kinda 1997, and Dagara, Somé 1998). Recognizing this diversity, the tone system of a single language should be investigated rather unbiased and free of special expectations.

1.1 Buli (Wieni dialect)

Buli has a complex tonal system which has recently received some more attention (Schwarz 2004, Kenstowicz 2005); including its analysis from the comparative angle (Akanlig-Pare & Kenstowicz 2003). In order to properly evaluate the role of tone for IS, we need some knowledge about the basic tonal properties of this tone system. Outlined here is my autosegmentally based analysis of tone in Buli as achieved in my thesis (Schwarz 2003, 2004) in which I especially concentrate on the Buli variety spoken in Wiaga, called Wieni. Although I agree with the majority of observations mentioned by Akanlig-Pare and Kenstowicz (2003) and by Kenstowicz (2005) concerning surface and underlying tone, my analysis deviates in certain points.

[1] The research would not have been able without the financial basis provided by the DFG. I also want to thank all my language informants for their assistance, among whom Norbert A. Amoabil and Denis P. Abasimi (Buli), Salifu Mumuni (Konni), as well as Manan Mohammed and Abdulai Abdul-Rafin (Dagbani) are especially to be mentioned with regard to questions concerning tone.

Let me also briefly remark on some other basic grammatical features of the language which are good to know about as background information: Buli has strict SVO order and head-final associative constructions. The language is of the agglutinative morphological type and uses mainly suffixes and enclitics in the verbal and nominal complex. The latter is characterized by a noun class system that has familiar Niger-Congo features and allows differentiation between indefinite and definite nominals by specific suffix sets.

1.1.1 Tonal contrast

It is nowadays acknowledged that Buli has three phonemic tones (Low, Mid, High) and employs them with lexical and grammatical function. A corresponding three-way-contrast by minimal triplets is, however, rather restricted to very few examples which you will find in every more recent work treating Buli tone:

(1a)	síúk	‘road’	(1b)	kɔ́k	‘mahogany tree’
	sīūk	‘navel’		kɔ̄k	‘fur, feather’
	sìùk	‘catfish’		kɔ̀k	‘ghost’

Apart from that triple restriction, there are several minimal pairs.

(2)	bììk	‘speech’	bíík	‘child’
(3)	bàŋ	‘lizard’	bāŋ	‘bangle’
(4)	pūūk	‘pregnancy’	púúk	‘stomach’
(5)	kā	‘lack, not exist’	ká	‘be’, focus marker

Verbs do not provide of distinctive lexical tone, but tone rather has a grammatical function and is most important to differentiate between different modes, aspects, and tenses. For example, all verbs have M tone in most affirmative subjunctive environments including the imperative or when forming the action noun with the help of suffix *ka*.

(6) Imperative:	gū	‘bury’	pōtī	‘crack’	bīlīsī	‘roll’
Action noun:	gū-kā	‘burying’	pōtī-kā	‘cracking’	bīlīsī-kā	‘rolling’

The grammatical importance of verb tone is illustrated by the following “minimal pair” where only the tone of the verb differentiates between the modal interpretation as subjunctive or indicative.

(7)	Subjunctive (perfective aspect)	Indicative (perfective aspect)
	wà pōtī-bū.	wà pòtì-bū.
	CL crack-CL	CL crack-CL
	‘He should crack them.’	‘He cracked them.’

Rising and falling contour tones also occur, but are not phonemic. They rather result from tone concatenation within a single syllable. The falling tone on *míǹ* in (8), for example, combines the H tone of pronoun *mí* and the L tone of a nasal negative marker.

(8) [HL] < / H+L/: míǹ … < /mí-(a)ǹ/ 1sg-NEG

1.1.2 Input, Mapping, Surface

The tone bearing unit in Buli is the syllable which in general is provided of only one tone. In the following, I will call these tones linked to TBUs of the root/stem for lexically or gramma-

tical distinction as lexical or grammatical *input tone*. However, surface tone melodies do not necessarily directly match the underlying input tones, but need some postlexical phonology. In Buli, there are two reasons responsible for deviations between input and output:

1. Tonal underspecification, i.e. some TBUs have no inherent tone but get it according to specific rules. In all Buli varieties, this concerns only the TBUs of word-finally bound morphemes while roots or stems of words are always provided with tone.
2. Tonal spreading by which one tone spreads on account of another tone. Only the Low tone is spreading in Buli. Low tone spreading operates in most but not in all Buli varieties and is very productive in the Wieni dialect considered here.

Ad 1. Tonal Underspecification (missing input tone requires secondary tone mapping):
The basic assumption here is that morphemes providing TBUs have to be associated with a tone. If there is no inherent tone provided in the input, the TBU has to be linked with a tone in a secondary *tone mapping* step.

For example, noun class suffixes of indefinite nouns don't have inherent tone while the stem has (input underlined). Class suffixes need to be secondarily mapped with tone only if they provide a TBU (that is a syllable of their own), which is not the case in (9a) since there is no suffix segmentable from the stem. In (9b) and (9c), on the other hand, there are syllabic suffixes, here supplied by the plural class suffix *–sa,* which gets associated with a copy of the available M or L input tone (cf. tone linked to the preceding stem) and the resulting MM or LL tone sequence can finally be simplified to a single M or L tone in the underlying structure.

	(9a) /gɔ́a/	(9b) /nēe-**sā**/	(9c) /tì̱i-**sà**/	
	'bush'	'nets'	'trees'	
	H	M	L	
	|	|	|	input
	gɔa	nee-sa	tii-sa	
		M M	L L	
		| ⋮	| ⋮	mapping: copying
		nee-sa	tii-sa	
		M	L	
		| ⟍	| ⟍	simplification (OCP)
		nee-sa	tii-sa	

While secondary tone mapping after a M or L input tone results in multiple association (as in 9b, 9c), the secondary tone mapping of an underspecified TBU after a H-input tone follows special rules and requires a different analysis, as will be laid out now.

First, as shown in (10), an underlying toneless suffix following a stem with H input tone varies according to syntactic conditions. The underspecified TBU, here the plural noun class suffix *–ba, -sa,* or *-ta* of the indefinite noun, is realized H like the preceding input H as long as it is positioned somewhere within the utterance (10a). In this utterance-medial position, it is not relevant what specific tone it will be followd by. However, when the tonally underspecified suffix following a H input is placed at the end of the utterance (10b), it is realized L. This final L occurs not only at the end of longer sentences but also when just the word form alone is cited, as for example in linguistic elicitation. (Dialectal exceptions)

(10a) Non-final H

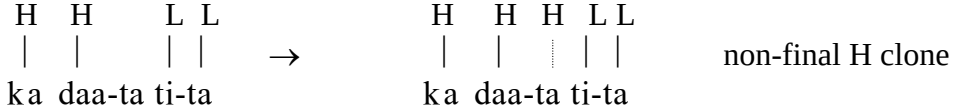
(i) léé-**bá** bà-yɛ̀	(ii) bí-**sá**-ŋá	(iii) dáá-**tá** kāʔ.
daughter-CL CL-two	child-CL-DEF	drink-CL not.exist.NEG
‘two daughters’	‘the children’	‘There are no drinks.’

(10b) Utterance-final L

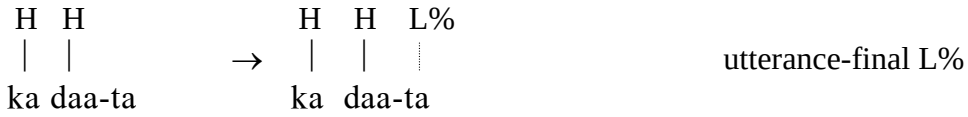
(i) léé-**bà**	(ii) bí-**sà**	(iii) dáá-**tà**
daughter-CL	child-CL	drink-CL
‘daughters’	‘children’	‘drinks’

(11a): In order to explain the utterance-medial high tone, I assume a copy of the preceding input tone being assigned to the toneless suffix. I call this additional H tone, which – as we will soon see – is persistant throughout the underlying tone structure and cannot be deleted via HH-simplification, a *H clone*. The surface tone of the suffix in utterance-final position (11b) is analyzed as a *boundary tone* at the intonational phrase level. Like the H clone in non-final environments, it is not part of the lexically or grammatically distinctive tonal input but rather provided by secondary tone mapping.

(11a) /ká da͡a-**tá** ti͡tà/ ‘It is three drinks.’

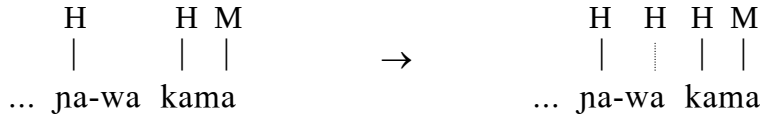


(11b) /ká da͡a-**tà**/ ‘It is drinks.’

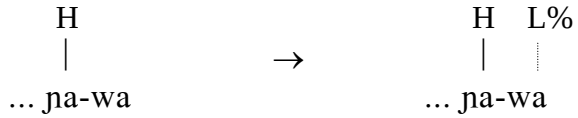


Such word-final variation between H clone and L boundary tone is also observed in the verbal complex, i.e. in environments in which the H input tone preceding the variable TBU is not lexically but rather grammatically distinctive. In the following, for example, the verb *ɲa* ‘see, find, get’ is associated with a grammatical H input tone. Enclitic object pronouns at such verbs must be regarded as toneless like the class suffixes of indefinite nouns. (12) shows that the pronoun gets a H clone in medial but a L boundary tone in utterance-final environment.

(12a) /mí ɲá-**wá** kámā/ ‘I SAW/FOUND him.’



(12b) /mí ɲá-**wà**/ ‘I saw/found him.’

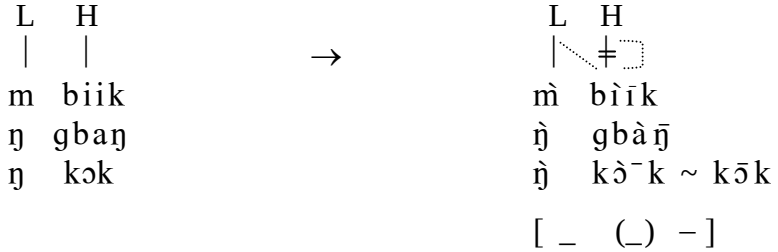


Ad 2. Low Tone Spreading (LTS):
In most Buli variaties including the Wieni dialect under consideration here, L spreads right onto the following TBU associated with a H tone and causes deviations from the underlying tone structure in surface melody since during the invasion of the L the original H gets dissociated from its former TBU. The final outcome depends on the existence or absence of another H TBU after the invaded H:

If there is no H following, like in (13a) (where there is even no TBU at all), the original H shows up by secondary reassociation to the left again, i.e. at its former syllable. Since the invaded L “occupies” the TBU, the original H now remains as far right within this syllable as possible, that is at the final mora, if there is more than one. The original H input is therefore only indirectly manifesting itself at its former syllable which looks at the surface like a mora-counting upstep of the expanded L.

(13a) LTS + left reassociation: Surface ‘L-upstep’

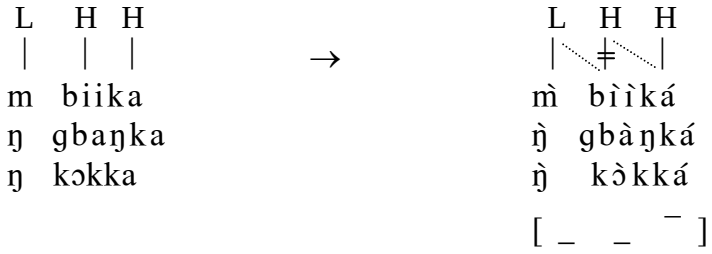
/ǹ bíik/ ‘my child’
/ǹ gbáŋ/ ‘my book’
/ǹ kɔ́k/ ‘my mahogany tree’



On the other hand, if as in (13b) there is a following H TBU available as is provided by the definite suffix on the associative’s head, the original H reassociates with this already H syllable to its right. Of course, such a reassociation strategy is only possible because sequences of HH input tones are never subject to simplification to a single H. Two H tones now being associated with one TBU even block the recursive expansion of the L and though the underlying tone structure remains the same as before, the surface result looks like a H shift.

(13b) LTS + right reassociation: Surface ‘H-shift’

/ǹ bíikǎ/ ‘my child’
/ǹ gbáŋkǎ/ ‘my book’
/ǹ kɔ́kkǎ/ ‘my mahogany tree’



LTS and the resulting left or right reassociation operates in exactly the same way with grammatical instead of lexical tone within the verbal complex, as will be seen later.

1.1.3 Summary

Without going into further complexities and details of the tone system, like compound-initial changes from M to L which might be regarded as stress-related pitch changes within phonological words, or instable rising tone pattern suggesting the phonological loss of a former word final H tone, we can summarize that Buli has a rather complex tone system allowing for tonal spreading and boundary phenomena. Its three tonemes which are lexically and grammatically distinctive can be characterized as follows within the tone system:

- The **M** tone has a rather *indifferent* respectively *default* value: for example, it constitutes the most frequent grammatical verb tone input within the verbal paradigm but is in certain tense-aspect-mood-polarity paradigms completely tracelessly replaced by grammatical H or L verb tone.
- The **H** tone can be described as *strong*: it is underlyingly quite persistent since HH sequences are not simplified and a single H can expand onto toneless TBUs if certain conditions are met (in all dialects, H is cloned utterance-medially, in some southern varieties it seems even to be cloned utterance-finally, cf. Schwarz 2004).
- The **L** tone represents an *active* tone at the *surface* because it spreads by expanding right onto H TBUs in most Buli varieties (including Wieni).

1.2 Divergencies in the tone systems of Konni and Dagbani

Let’s have a very brief look and compare these Buli findings with the tone systems of the two relatives Konni and Dagbani. Compared with the tonal system in Buli, the two relatives show the following major differences:

(i) Both have only two tonemes, L and H, yet lexical tone still displays a triple contrast to certain extent when taking into consideration the combination of the nominal stem’s tone and the suffix’ tone and/or certain tone changes in specific environments (like compound-initially).

Dagbani patterns in this respect largely like some other Western Oti-Volta languages including Moore for which the triple contrast has already been described 1988 by Kenstowicz, Nikiema, and Ourso. Comparing nominal cognates, the following relations can be established (14a), for which Akanlig-Pare & Kenstowicz 2003 suggest a contrastive origin as outlined below (14b). The authors assume that the tone group labelled here as ‘2’ has an underlying

toneless word stem and observe that the contrast has already far merged in Konni. Olawsky (1999) indicates that in Dagbani tonal assignment to underspecified stem morphemes is sensitive to stress.

(14a)	*Moore (and other Western O-V languages)*	*Konni*	*Buli*
1.	H-L < H-H	H-!H (H-L)	H-L% resp. H-H
2.	H-H	L-H	M-M
3.	L-H	L-H	LL

↑

(14b)
1. °/H-H/
2. °/Ø-H/
3. °/L-H/

It should be mentioned that apart from several well justified assumptions of the existence of a lexically tonally underspecified group of word stems this analysis entails some language specific problems for present Buli and Konni tones that have not been solved and need further investigation.

(ii) Konni and Dagbani have downstep, and in both languages H tones spread right, however, not under identical conditions. Additionally operating LTS is only reported for Dagbani. Unfamiliar from Buli, tone combinations forming word-final falling contours are relatively common in both languages. (Cf. Cahill 1999 for Konni and Olawsky 1999 and Hyman & Olawsky 2000 for Dagbani)

(iii) Like Buli, Konni has no lexically distinctive verb tone, which is regarded as innovation by Kenstowicz 2005 since for those other Gur languages for which tone analyses are available lexical verb tone is attested.

2. IS categories like focus expressed by pitch/tone?

Being aware of the complexity of the tone system in Buli and some related languages, can we expect that beyond the lexical and grammatical information provided by tone categories like focus or topic are expressed by pitch/tone, too?

That the information structural exploitation of pitch/tone is not ruled out by the existence of lexical tone has been shown by different studies, among them those on tonal phrasing in Bantu languages (Kanerva 1990, Truckenbrodt 1999, Downing 2003 etc.). In that language family, it seems to be the focus category within the sentence (rather than the topic) that typically is phonologically reflected by phrase boundaries following the focus constituent, a fact that in languages like Chichewa also entails certain tone realizations.

On the other hand, focus in Buli and its relatives is primarily expressed by morphological means, a fact that reduces the potential information structural load of pitch/tone and might be regarded as an argument against tonal or any other prosodic correlation to focus. Different accounts concerning such a correlation are available for non-tonal languages that make consistent use of morphological focus strategies: The African language Wolof of the Atlantic family does not display any prosodic cues to focus according to Rialland & Robert (2001) while the North American language Chickasaw of the Muskogean family displays

certain cues in fundamental frequency, to narrow or contrastive foci according to Gordon (2004). The latter, however, also indicates that those means are probably less consistently exploited than in languages without overt focus morphology. Similar "partial" findings are available for the Kwa language Ewe where morphologically expressed focus seems to a certain degree be accompanied by peculiar F0 features, too (for example, F0 compression after focal subject; cf. Jannedy & Fiedler, 2006).

Hence, cross-linguistic comparison suggests that the fact that Buli and "Co" have (i) phonological tone and (ii) primarily use morphology as signal for focus should not lead us to *a priori* deny the possibility of information structural signals also rendered by changes in fundamental frequency or other prosodic cues. Let's therefore see what tone or pitch offers in Buli and "Co" with respect to focus and topic expressions.

2.1 Redundant pitch/tone marking of focus?

As just mentioned before, in the languages considered here, focus is primarily expressed by morphological devices which apply basically in the same way to new information / assertive focus and to contrastive focus. In Buli, focus is primarily expressed by a H toned morpheme *ká* that is preposed to the nominal sentence constituents in focus. This focus marker is required to accompany focal information in affirmative indicative environments, as illustrated in the following examples for a focal object. In (15a), the patient encoded as object *ŋmāāzùŋ* 'pepper' is focal because it represents new information that has been asked for. It is obligatorily preceded by focus marker *ká*. In (15b), the recipient *bísà* 'children' constitutes the sentence-final object in contrastive focus because it replaces a wrong assumption. Focus marker *ká* is again regarded as obligatory ingredient for a felicitous correction.

(15a) What are the women spreading (for drying)?

bà-à dānī *(**ká**) ŋmāāzùŋ.
CL-IPF spread FM pepper
'They are spreading PEPPER. '

= new information / assertive focus (here: filling explicit gap)

(15b) The cook cooks for the teachers.

àāyàʔ, wà-à dīg á tɛ̄ *(**ká**) bísà.
no CL-IPF cook IPF give FM children
'No, she cooks for the STUDENTS. '

= contrastive focus (here: replacing explicit alternative)

When comparing sentences with changing focus-background structures, we are sometimes confronted with different melodies at the same sentence constituent depending on whether it is in focus or not - a variation that is restricted to focus constituents with an initial H tone input. In (16a), the sentence-final object *bííká* 'the child' constitutes the focus constituent and displays a HH succession while in (16b) it is realized LH and is itself non-focal.

(16a) wà ɲà -(ɣ)ə **bííká**. /… ɲà ká bíiká .../
CL see-FM child:DEF
'He saw/found the CHILD. ' (i.e. not his parents)

(16b) wà ɲà **bììká** kámā. /… ɲà bíiká …/
CL see child:DEF FM:Pred
'He SAW/FOUND the child. ' (i.e. he finally succeeded)

Without knowledge about the regularities of LTS in Wieni-Buli, such surface tone variation might be attributed with higher relevance in focus marking than necessary. Of course, it is the diverging number of H tones within the verb-object sequence that makes the difference. Even though the focus marker in (16a) tends to extensive segmental erosion in natural fast speech, its tone is preserved in the underlying structure what makes the difference to the underlying tone structure in (16b) and is expressed on the surface, too.

(17a): Hence, irrespective of its segmental erosion ([ka ~ ɣə ~ ə]), focus marker *ká* blocks LTS to reach the focal constituent *bííká* while the lack of such a H focus morpheme allows LTS on the object in (17b), resulting in the surface melody *bììká.*

(17a) L L H H H
wà ɲà -ɣə bíí-ká.
3sg see-FM child-DEF
'He saw/found the CHILD.'

(17b) L L H H H M
wà ɲà bìì-ká kámā.
3sg see child-DEF FM:Pred
'He SAW/FOUND the child.'

We can summarize that the fact that the left-adjacent focus marker has a H tone input, enables it to block LTS at the beginning of the focus constituent. Nonetheless, it is rather the existence of the complete morphological focus marker including its tone than the absence of LTS that has to be analyzed as a basic focus indicator.

A similar case of such secondary tonal focus signals triggered by morpho-syntactical rather than by prosodic conditions is observed at focused pronouns with object function. In Buli, the ordinary object pronoun is represented by a verbal enclitic that displays verb dependent tone. For example, we have seen before in (12b) that a pronominal object cliticized to a H verb shows no sign of an inherent input tone but gets either a H clone or a L boundary tone by secondary mapping. When the object pronoun appears at a M or L verb, on the other hand, as in example (18a), it is realized with an invariable M tone which must be regarded as grammatical input tone even if this creates an undesirable asymmetry to the toneless pronoun at a H verb.

(18a) nípōōwá dìg kà túéŋá tɛ̀-**wā**. /… tɛ̀-wā/
woman:DEF cook FM beans:DEF give-CL
'The woman cooked the BEANS for him. '

Whenever the object pronoun is intended to provide the salient, i.e. focal, information within the sentence, the focus marker *ká* has to be preposed to it as in (18b) and, consequently, the pronominal object cannot be encoded as verb-final enclitic anymore.

(18b) nípōōwá dìg tùèŋá tɛ̀ kà **wá**. /… tɛ̀ ká wá/
woman:DEF cook beans:DEF give FM CL
'The woman cooked the beans for HIM. ' (i.e. not for you)

Instead, an unbound disjunctive pronominal form, here *wá,* that is not restricted to any syntactic function substitutes the non-focal enclitic pronoun in case of narrow focus. It has a verb-independent H tone input and occupies the same syntactic post-verbal slot as a nominal object with its verb-independent lexical tone input.

With regard to the tone changes observed at focal and non-focal pronominal forms with object function, we can thus summarize that they result from the morphological focus marking requirement which is incompatible with the verb-final enclitic position of the pronoun.

Concerning the question of redundant focus marking by pitch or tone, I conclude that the attested tone changes are always analyzable as indirect and within the grammar comparatively low-ranked signals of a sentence's focus-background structure (cf. also Hyman 1999 concerning Bantu). Any special tonal features of the focal element can be traced to more general interactions between morphology, syntax, and tone.

2.2 Disambiguating pitch/tone marking of focus?

Having solved the redundance question, what about the role of pitch or tone in disambiguating focus? Such a task could in fact help to solve some scopal ambiguities that remain in the mainly morphologically organized focus systems of Buli and its relatives. Three exemplifications illustrated by Buli data shall suffice to indicate some typical scope ambiguities in the three languages concerned.

First, (cf. 19), ambiguities concerning the scope of focus result from the restriction to prepose the focus marker to sentence constituents that qualify semantically and syntactically as referential nominal expression which can be determined. Any focal element below that requirement, i.e. a non-phrase-initial element modifying a noun, like an attributive numeral or an adjective, is not capable to get marked by a directly preposed focus marker. Instead, the focus marker is placed before the whole determiner phrase and does not allow to differentiate between somewhat broad focus on the whole referential expression or more narrow subphrasal focus on the modifier.

(19) 'Which child did you beat?'
'Whom did you beat?'

ǹ nàg **ká** bí-fííká. not: … * bí -**ká**-fííká
1sg beat FM child-small:DEF
'I beat the SMALL child. ~ I beat the SMALL CHILD.'

Second, in all three languages under consideration here, focus that is morphologically marked on a postverbal constituent may project onto the complete VP. Therefore, a sentence like former ex. (15a), repeated in (20), also has the correct morphological structure to constitute a felicitous reply to a question like 'What are the women doing?'. Morphologically, narrow object focus and wider complex VP focus are realized in exactly the same way.

(20) 'What are the women spreading (for drying)?' (= 15a)
'What are the women doing?'

bà-à dānī **ká** ŋmāāzùŋ. not: … * **ká** dānī ŋmāāzùŋ
CL-IPF spread FM pepper
'They are spreading PEPPER. ~ They are SPREADING PEPPER.'

Third, as you see in (21), narrow focus on the subject and broad focus extending over the whole clause can lead to scope ambiguities because both display structural peculiarities in all three languages which are not covered by the ordinary focus marker. In Buli, the structural peculiarity shared by subject and sentence focus consists of a special verbal predicate formed by a preverbal connective particle *(à)lē* and a non-canonical verb form. The focus marker

may additionally occur, but contrary to the other marked structural features it is not required and rare in case of wide sentence focus.

(21a) ‘Who called George?’

(ká) nípōk **lē** wì-wā.
(FM) woman LE call-CL
‘A WOMAN called him.’

(21b) ‘What happened?’

nípōk **lē** wì George.
woman LE call G.
‘A WOMAN CALLED GEORGE.’

In order to test whether scope ambiguities like those just pointed out (cf. summary in 22) may be solved by peculiar F0 properties, I did some explorative investigation in the three languages.

(22)	*narrow focus*	*wide(r) focus*
(a)	verb complement	verb with complement
(b)	quantifier	object with quantifier
(c)	subject	sentence

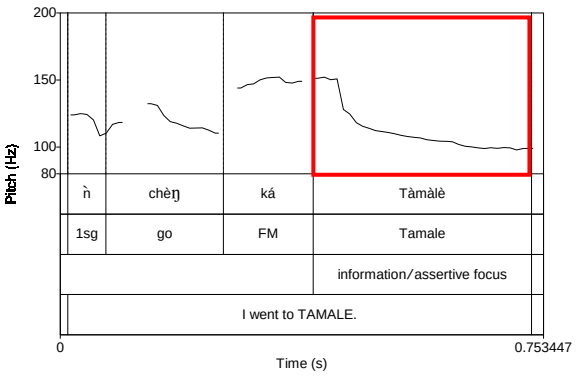
For this initial study, short dialogues were designed in order to elicit sentences of the same morphological and syntactic structure but with different focus-background structures, as illustrated by some examples in (23). These dialogues were performed as a contextually embedded translation task by a single or two speakers. Please note that neither randomization nor a high number of subjects were aimed at for this study at the moment. Furthermore, up to now, the contexts only provide examples for new information foci and have to be augmented by contextual triggers for contrastive foci.

(23)	*narrow focus*	*wide(r) focus*
(a)	... Were did you go to? I went to TAMALE.	... What happened to you? I WENT TO TAMALE.
(b)	... How many yams do you want? I want THREE yams.	... What do you want? I want THREE YAMS.
(c)	... Who has died? THE CHIEF’S SENIOR WIFE has died.	... Are there any news? THE CHIEF’S SENIOR WIFE HAS DIED.

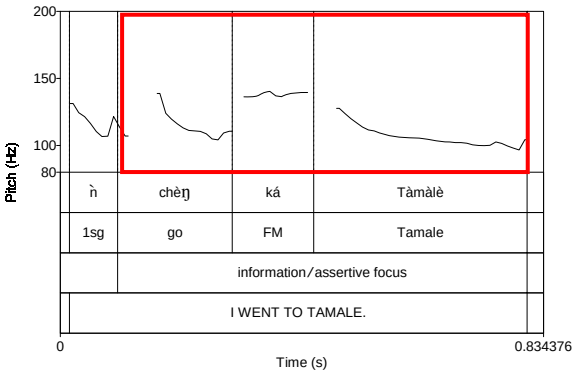
Now, let’s have a short look at the data, starting with (24) with a pair comparing narrow focus just on the verb complement, as in (a), and wider focus on verb and complement together, as in (b). Comparison suggests that – even though the data gathered contain incidental cases with divergent pitch between foci – there is no systematic disambiguation between the two foci of

different scope. Similar findings for these two focus conditions are also known from the Chadic tone language Tangale according to Hartmann & Zimmermann (2004).

(24a) Where did you go?

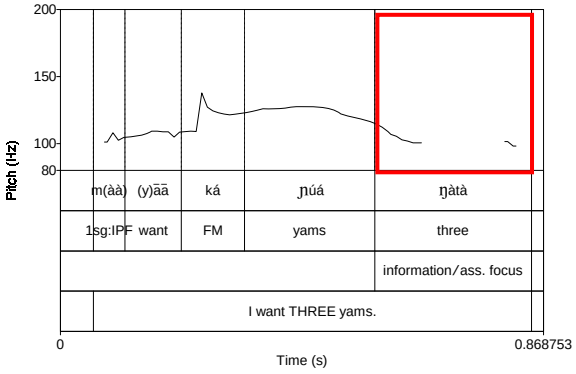


(24b) What happened to you?

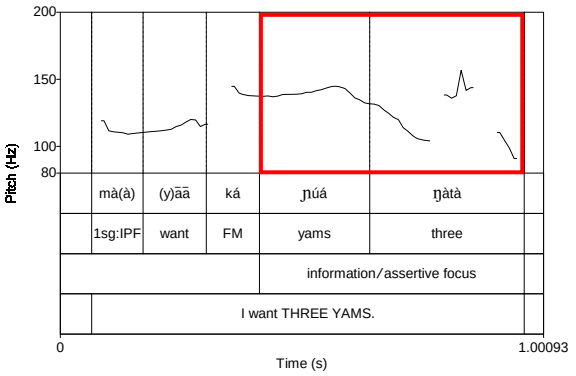


Similarly, as exemplified by (25), there is no significant change under focus conditions changing between narrow focus on a numeral (a) and wider focus on numeral and quantified object (b).

(25a) How many yams do you want?

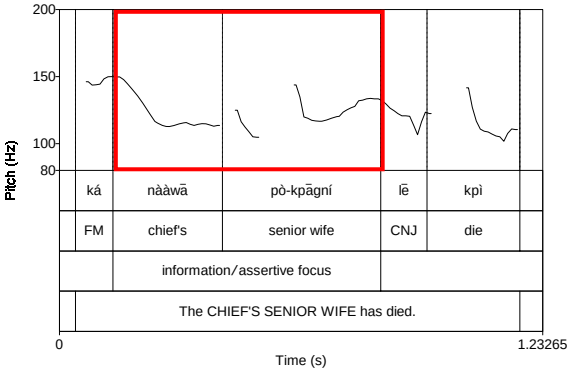


(25b) What do you want?

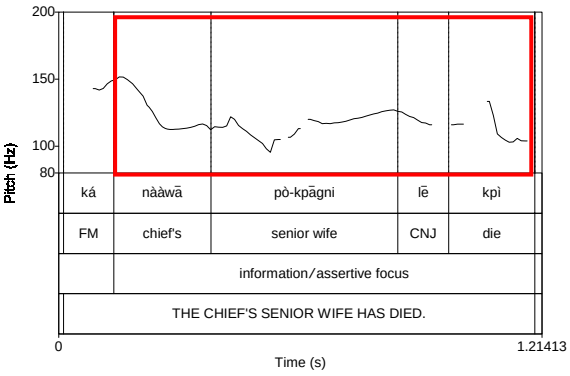


Likewise in (26), no consistent significant changes were found that would distinguish between narrow focus on the subject (a) and wide sentence focus (b).

(26a) Who has died?



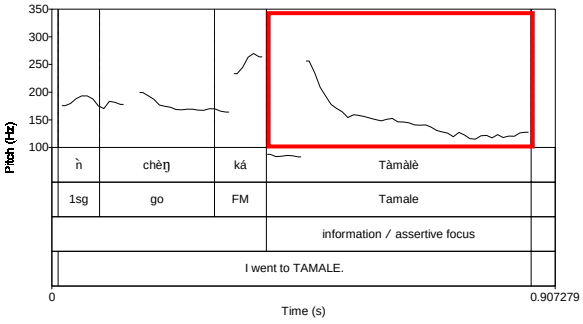
(26b) Are there any news?



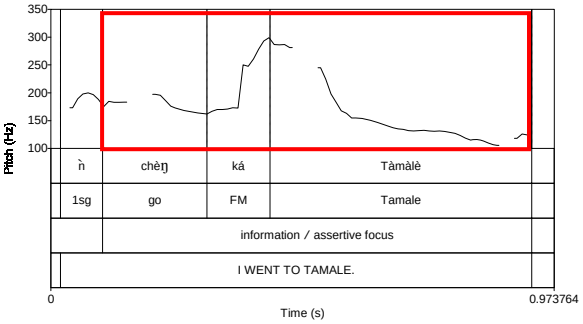
Quite similar findings with rather vacant fundamental frequency contours can be reported not only for other dialects than Wieni-Buli but also for the related languages Konni and Dagbani, in which the same focus conditions have been tested. I just give the first comparison between narrow focus on the verb's complement and wider focus on the whole VP for illustration. (27) contains data from the Buli variety spoken in Kanjag, (28) contains data in Konni, and (29) in Dagbani.

Kanjag-Buli

(27a) Where did you go?

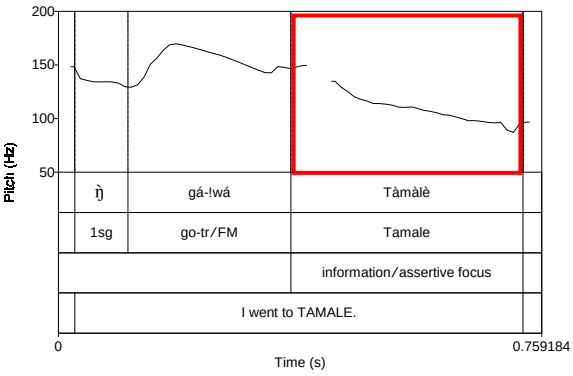


(27b) What did you do?

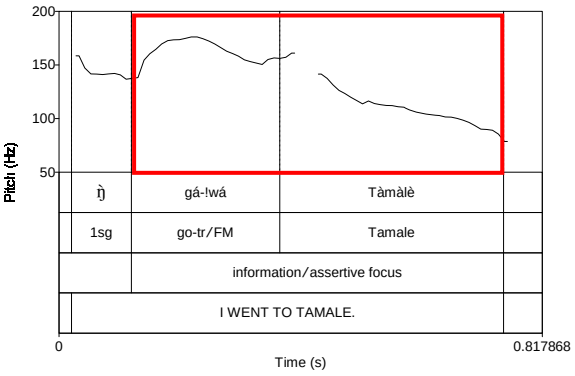


Konni

(28a) Where did you go?

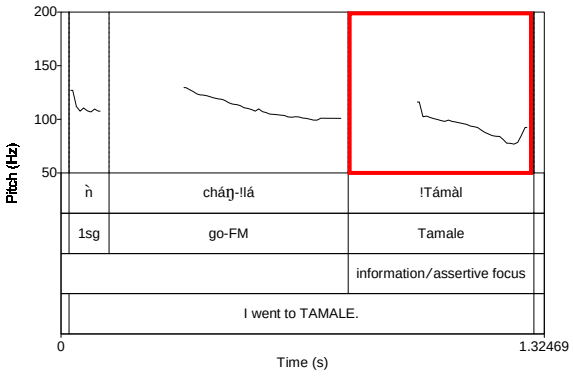


(28b) What did you do?

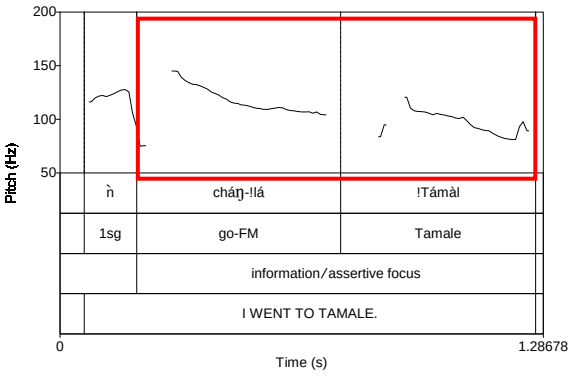


Dagbani

(29a) Where did you go?



(29b) What did you do?



To conclude the disambiguation section: The explorative tests in Buli and "Co" indicate that neither pitch nor tone help to solve ambiguities concerning the focal scope in a significant way in the three languages' grammar of focus. Of course, no claims for statistical

relevance can be made for these initial tests. Furthermore, other prosodic signals beyond fundamental frequency like duration, breaks etc. still have to be looked into in more detail. Nonetheless, it already seems obvious that pitch or tone do not provide any consistently employed clue in the three languages under consideration to disambiguate between foci of different scope.

3. Grammatical verb tone – subject or topic agreement?

In the last section of my presentation, I am going to point out that grammatical tone, which is most productive in the verbal system of these languages, also provides interesting information structural signals.

In the grammar of all three languages, verbs with 1st and 2nd person subjects are tonally distinguished from those with 3rd person subjects in some part of the verbal paradigm. In Buli, such difference is regularly expressed in the affirmative perfective indicative, as shown in (30). Discourse participants represented by 1st and 2nd person pronouns trigger a H verb tone (a) while discourse referents trigger a L verb tone (b).

(30a) Subject = referent > L verb tone input /bùgsì/

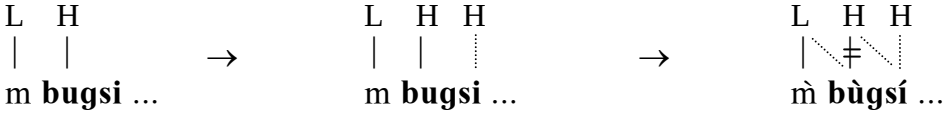
(i) nominal subject	(ii) proclitic[2] pronoun
bííká **bùgsì** jīgsà.	wà **bùgsì** jīgsà.
child:DEF crush sheanuts	CL crush sheanuts
'The child crushed sheanuts.'	'She crushed sheanuts.'

(30b) Subject = participant > H verb tone input /búgsí/

(i) disjunctive pronoun	(ii) proclitic pronoun
mí **búgsí** jígsà.	m̀ **bùgsí** jígsà.
1sg crush sheanuts	1sg crush sheanuts
'I crushed sheanuts.'	'I crushed sheanuts.'

The variable tone contexts before the verb stem in (30) illustrate that neither the L nor the H verb tone input results from mere spreading. Instead, the grammatical tone according to the discourse role of the subject must be analyzed as input tone. Due to LTS from proclitic pronominal subjects, as occurring in (30b-ii), the underlying grammatical H verb tone is not directly present at the surface. (31) indicates tonal input, mapping and spreading resulting in a H-shift at the surface level for this verb form.

(31)



Similar verb tone patterns separating 1st and 2nd person subjects from 3rd person occur in Konni and Dagbani, where even more tense-aspect paradigms than in Buli allow this differentiation. The verb tone agreement with the subject is especially noteworthy in Dagbani which – contrary to Buli and Konni – has lexically distinctive verb tone. This lexical verb tone is however replaced by the grammatical tone without any trace (cf. also Hyman & Olawsky 2000).

[2] Although pro-cliticized, the pronouns are written separately due to orthographic convention.

In all three languages, non-factual domains like irrealis and negation are typically excluded from grammatical verb tone. (32) gives an Buli example with a negative verb form in the indicative perfective where the subject agreement is neutralized in favour of a H verb tone. Due to the L toned nasal preverbal negative marker, the underlying H is subject to LTS and does not surface directly.

(32) No subject agreement > H verb tone input /bú̲gsí/

(a) bà-m̀ **bùgsí** jígsàʔ.
CL-NEG crush sheanuts:NEG
'They didn't crush sheanuts.'

(b) tì-m̀ **bùgsí** jígsàʔ.
1pl-NEG crush sheanuts:NEG
'We didn't crushed sheanuts.'

While the lack of tonal subject agreement might often be attributed to the existence of an intervening preverbal morpheme, as in (32), some cases cannot be solved that easily. One such case is provided in (33) where the sentence-initial constituent has a pragmatically marked interpretation as contrastively focused topic, typically because it is subject to ongoing dispute and has gained certain value as (transient) discourse topic. The construction represents a complex sentence with a clause-boundary as visualized by the comma before the clause conjunction *àtè*. Whenever this conjunction *àtè* 'and' is used, tonal agreement with 1st and 2nd person subjects is ungrammatical. Parallel verb tone neutralization occurs in comparable sentence contructions in Konni and Dagbani.

(33) Lack of subject agreement > L verb tone input /bù̲gsì/

(a) ká tānāŋá, (à)tè wà **bùgsì**.
FM stones:DEF CNJ CL crush
'It is the STONES that she crushed.'

(b) ká tānāŋá, (à)tè mī **bùgsì**. not: * /bú̲gsí/
FM stones:DEF CNJ 1sg crush
'It is the STONES that I crushed.'

I conclude that H respectively L verb tone input in Buli is not always determined by the verb's grammatical subject but that verb tone is also sensitive to the notion of sentence topic, a category that is typically provided by an established discourse referent. The notions of subject and topic quite often merge in referential expressions in sentence-initial position, as is cross-linguistically well known (cf. Li & Thompson 1976 also for Niger-Congo). In (33) however, topic and subject do not match on the sentence-level. Here, topic agreement overrides subject agreement which would trigger a H verb tone input after the 1st person pronoun. It may be worthwhile to look further into this and other information structural aspects of grammatical tone in Buli and its relatives.

4. Conclusion

As conclusion let me just resume the major points presented here.

- Buli and its relatives have complex tone systems with interesting features that have not yet brought together in a sufficient way. The languages also have a highly developed morphologically and syntactically marked focus system. This fact might diminishes the expectations concerning focus indications by pitch/tone, but it doesn't exclude such signals *per se*.
- Some rather apparent focus related changes in pitch, as illustrated in the redundancy section, can be explained either as mere surface tone reflexes (block of LTS by FM) or as response to morphological/syntactic requirements of focus marking (disjunctive instead of clitic pronoun).
- Pitch does not seem to play any relevant role in disambiguating foci concerning their scope, at least according to first explorative tests which could be improved and extended, including triggers for contrastive focus.
- Grammatical tone shows some interesting correlations with information structural categories, like referentiality, definiteness, and topicality, the latter being addressed in section 3. To me, this is the area that seems to be most promising for further investigations into IS and pitch/tone in Buli and "Co".

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