Tone in the pronominal system in Bissa Barka

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1. Introduction

This article looks at the tone of the pronouns in Bissa Barka, specifically the personal pronouns, both in simple constructions and in possessive constructions, and the logophoric pronoun. Bissa (BIB) is an eastern Mande language spoken in southern Burkina Faso, in the provinces of Boulgou, Zoundweogo and Koupelogo, as well as in the northern regions of both Togo and Ghana. According to the Ethnologue[1], there are 640 000 total Bissa speakers across the three countries, with 399 000 of them residing in Burkina Faso. There are two main Bissa dialects: Lebri in the west and Barka in the east[2]. This study focuses on the Barka dialect as spoken in the town of Garango.

Before discussing the tone in the pronouns, I will start by establishing the number of tones that exist in Bissa Barka. There are two reasons for beginning this way. First, the question of the number of tones is still somewhat contested in the existing documents concerning Bissa. Secondly, the study on the number of tones reveals a couple of tonal phenomena that will be relevant to our discussion of the pronouns. In the third section, I will present the tone of the personal pronouns, both in simple phrases and in a possessive phrase along with the tone of the logophoric pronoun. I do not claim that this is a complete list of all the pronouns used in Bissa. In the fourth section I will identify the tonal processes that can be observed through this limited data set. Note, that this final section is not intended as an analysis of the tonal system in Bissa; that is a topic for a further study.

2. Levels of tone

When asked, most Bissa speakers will say that Bissa has three tones, and cite the following minimal triplet as proof:

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[1] *http://www.ethnologue.com/language/bib* consulted March 30, 2016.

[2] For a discussion of the different dialects, see (Vossen 2001).

[gér] 'someone'

[gēr] 'road'

[gèr] 'stone'

In the existing documents discussing Bissa however, there is a wide range of opinion regarding the tone system. In his grammar of the Lebri dialect, Anthony Naden doesn't address the question of tone. Where he does come close to discussing tone, he refers to it as intonation and simply states that "There is very little use of suprasegmental phonological features in the Syntax of Bisa." (Naden 1973: 244) This lack of treatment of tone has led some people to conclude that Bissa is a toneless language – see for instance the posting for Bissa on WALS[3].

Schreiber suggests that Bissa may be a pitch-accent language, rather than a tonal language (Schreiber 2000: 60). Opinion among the remaining authors is split between those who claim a two-tone system: Hidden (1982), Galbane (1985), Vanhoudt (1992a), and those who claim a three tone system: Prost (1950), Zouré (1975), Bambara (1980), Monet (1989).

Naden, Zouré, Hidden and Vanhoudt all discuss the Lebri dialect, but Hidden is the only author who gives a detailed analysis of tone, presenting two papers on the topic (Hidden 1982; Hidden 1986). He concludes that Bissa Lebri has "un système à deux tons (haut et bas) plus faille tonale[4]" (Hidden 1982 :1).

Regarding the Barka dialect, which is our concern, three documents are of interest. First is the grammar written by André Prost. He states that "Il y a 3 tons: le ton ordinaire, le ton haut et le ton bas[5]" (Prost 1950:16). He does not elaborate on the tone system, nor does he explain what he means by "ton ordinaire".

In the 1980s two Bissa speakers, Eloï Bambara and Adama Galbane wrote dissertations about the phonology of the Bissa spoken in Garango. Bambara claims that "Le barka connaît trois tons: bas, moyen et haut.[6]" (Bambara 1980: 96). He follows this statement with several minimal pairs.

Five years later, Galbane argued that the "mid" tone is in fact "issu de la combinaison d'un ton bas et d'un ton haut[7]". (Galbane 1985: 38). He bases his conclusion on the limited distribution of the supposed mid tone as well as on the lack

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[3] *http://wals.info/feature/13A#5/12.383/19.358* consulted June 11, 2016.

[4] 'A two-tone system (high and low) plus downstep'.

[5] 'There are 3 tones: the ordinary tone, the high tone and the low tone'.

[6] 'Barka has three tones: low, mid and high'.

[7] 'results from the combination of a low tone and a high tone'.

of tone melodies such as HM, MH, LM and ML (p. 37). Finally, he asserts that when the plural suffix is added to nouns with a supposed M tone, the LH melody reappears (p. 38).

Working in collaboration with the National Bible Translation and Literacy Association (ANTBA), we assembled a small group of Bissa speakers and spent two weeks in June of 2012 investigating the number of tones. We used a participatory approach developed by Constance Kutsch Lojenga[8], whereby simple words are written out on individual cards and then the speakers of the language sort them into groups according to which ones are pronounced in the same way, or are pronounced differently according to the feature being investigated, in this case, tone melodies. Using this method we were able to verify the tone melodies for 250 simple nouns and verbs.

Once all the words were sorted following this method, we were left with four distinct tone melodies or word melodies as Gussenhoven calls them (Gussenhoven 2004: 30 – 32). The melody applies to the whole word, although it may be comprised of two distinct tones. On monosyllabic words, the full melody is associated with the single syllable, whereas in disyllabic words the melody is spread across both syllables. The four melodies H, L, LH and HL can be seen in Table 1 below:

Table 1: Tone melodies on monosyllabic and disyllabic words

H	/gɛ́r/	'someone'	/nágá/	'sorgho'
	/sɛ́/	'fire'	/túúrɛ́/	'passage'
HL	/bûr/	'bread'	/kɛ́nɔ̀/	'room'
	/kâ/	'daba'	/sáánà/	'stranger'
L	/gɛ̀r/	'stone'	/kàsì/	'basket'
	/kì/	'pebble'	/pààsì/	'cheek'
LH	/gɛ̌r/	'road'	/sìsí/	'horse'
	/mǐ/	'problem'	/zɔ̀kɔ́/	'shoulder'

Once we established these four melodies, we can see that the distinction between the minimal triplet /gɛ́r/ 'someone', /gɛ̌r/ 'road' and /gɛ̀r/ 'stone' originally cited as evidence of a mid tone is in fact the contrast of three different tone melodies, and not a contrast of three distinct tones.

As we continued our research, we discovered that this perception of the tone does not match the actual realization of each of the tone melodies. The underlying H and HL melodies are indeed realized as H and HL, but the LH melody is realized as L, and the

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[8] See (Kutsch Lojenga 1996) for a full description.

L melody is realized as L followed by a falling tone. The difference between the underlying form, the perceived form and the actual realization can be seen in Table 2 below. Each of these forms represents the word as spoken and heard in isolation.

Table 2. Difference between actual and perceived realizations of the four tone melodies

Melody	Gloss	Underlying form	Perceived realization	Actual Realization
H	'someone'	/gɛ́r/	*gɛ́r*	[gɛ́r]
	'sorgho'	/nágá/	*nágá*	[nágá]
HL	'bread'	/bûr/	*bûr*	[bûr]
	'stranger'	/sáánà/	*sáánà*	[sáánà]
LH	'road'	/gɛ̌r/	*gɛ̄r*	[gɛ̀r]
	'horse'	/sìsí/	*sīsī*	[sìsì]
L	'stone'	/gɛ̀r/	*gɛ̀r*	[gɛ̄r] [9]
	'basket'	/kàsì/	*kàsì*	[kàsī]

Next, we investigated the plural form of nouns. The plural is formed by the addition of the suffix –RÒ[10]. We observed the same process that Galbane described – the LH melody becomes visible, as can be seen in Table 3. Note that [gɛ́r] 'person' has an irregular plural form [gɔ́ɔ́rɔ̀].

Table 3: Plural forms of the four tonal melodies

Melody	Gloss	Singular	Plural
H	'wing'	[zá]	[zárɔ̄]
	'someone'	[gɛ́r]	[gɔ́ɔ́rɔ̄]
	'sorgho'	[nágá]	[nágárɔ̄]
HL	'hoe'	[kã̂]	[kã̂nnɔ̄]
	'bread'	[bûr]	[búùrō]
	'stranger'	[sáánà]	[sáánàrɔ̄]
LH	'foot'	[gã̀]	[gã̌nnɔ̄]
	'road'	[gɛ̀r]	[gɛ̀ɛ́rɔ̄]
	'horse'	[sìsì]	[sìsírō]

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[9] The use of the mid-falling symbol to indicate the tonal realization here is not quite accurate, since the fall is in fact low-falling. However this is the clearest solution I could find to distinguish this type of fall from the high-fall that is associated with the HL melody.

[10] The vowel in words with a CVC syllable structure lengthens with the addition of the suffix. In words ending with a nasal vowel, the consonant of the suffix doubles in length.

L	'slave'	[lɔ̋]	[lɔ̀nɔ̋]
	'stone'	[gɛ̋r]	[gɛ̀ɛ̀rɔ̋]
	'basket'	[kàsɪ̋]	[kàsɪ̀rɔ̋]

The LH melody is evident in other contexts, specifically when a word with the LH melody appears before a verb with a L tone. Examples (1) and (2) below show the realization of the LH words /sìsí/ ' horse' and /kʊ̀sɔ́/ 'shoe' :

(1) *Mŭn   sìsí   gùlà.*
    1SG   horse   get.down
    'I got the horse down'.

(2) *Mŭn   kʊ̀sɔ́   gùlà.*
    1SG   shoe   get.down
    'I got the shoe down'.

We therefore conclude, as did Galbane, that Bissa Barka has two level tones, H and L and four tone melodies: H, HL, L and LH.

As we already discussed, in isolation words with a LH melody are realized with a simple L tone (as opposed to the falling L tone of words with a L melody); this phenomenon is the reason why native speakers of Bissa claim the existence of a mid tone. This process applies to both monosyllabic and disyllabic roots, as in the following words:

/gěr/	[gèr]	'road'	/sìsí/	[sìsì]	'horse'
/mǐ̃/	[mì̃]	'problem'	/zə̀kɔ́/	[zə̀kə̀]	'shoulder'

The timeframe of our study did not permit us to study polysyllabic words, nor to clearly define all the contexts in which the LH melody is fully realized rather than appearing as a low tone. These are questions for future study.

3. Pronouns – overview

Bissa makes use of two different sets of personal pronouns; a long form as shown by Group A below, and a short form under Group B.

	Group A			Group B	
	Sg.	Pl.		Sg.	Pl.
1	*mŭn*	*ɔ̀rɔ́ɔ́*	1	*Ń*	*ɔ́*
2	*ìríí*	*àráá*	2	*í*	*á*
3	*à*	*Ǹ*	3	*à*	*Ǹ*

Since the tone of the first and second person pronouns are LH in Group A, and H in Group B, calling Group B the short form of the pronouns in Group A is probably

too simplistic, but for ease of comprehension, I will use these terms for the time being rather than constantly referring to Group A and Group B.

So far, I have not encountered a long form of the 3rd person pronouns in any natural text. But when pressed, most Bissa speakers claim there is a long form of the 3rd person pronouns, to complete the first set. They agree that the long form of the third person singular pronoun would be *araa*, but there is no consensus as to what the long form of the third person plural pronoun would be.

In her study on the use of these two sets of pronouns in the Lebri dialect, Bettie Vanhoudt concludes that « Les deux séries de formes pronominales répondent à un choix dicté par l'existence ou l'absence d'une coréférence avec le sujet"[11] (Vanhoudt 1992 : 108). Essentially, she is saying that within an utterance, the short pronouns can only be used once the reference has been established by a long pronoun. I have not done a similar study in the Barka dialect to confirm that this same criterion holds, but based on my initial observations of textual data, it is a likely hypothesis.

The third person plural pronoun in both sets of pronouns, and the first person singular short pronoun are nasal consonants that will assimilate to the place of articulation of the following consonant. They can therefore be realized as [m], [n] or [ŋ], as seen in (3) – (5):

> (3)   [m̀   pètʊ́   gʊ̀là]
>
>   3PL   boxer.shorts   get.down
>
>   'They got the boxer shorts down'.

> (4)   [ń   nágá   gʊ̀là]
>
>   1SG   sorgho   get.down
>
>   'I got down the sorgho'.

> (5)   [ŋ̀   kìrá   gʊ̀là]
>
>   3PL   stake   get.down
>
>   'They got the stake down'.

3.1 Personal pronouns

As we have already mentioned, Bissa Barka uses two sets of pronouns. The underlying tone melody of the first and second person of the long form is LH. However, because of the process described above whereby the LH melody is often realized with only a L tone, the first and second person of long pronouns are usually realized with a L tone, as shown in sentences (6) through (8):

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[11] 'The use of the two sets of pronouns is governed by the existence or absence of a co-reference with the subject'.

(6) [mʊ̀n hí ká tómà n]
1SG water give Thomas to
'I gave water to Thomas'.

(7) [ɪ̀rɪ̀ɪ̀ ní hí ká tómà nì y]
2SG PFV.NEG water give Thomas to NEG
'You didn't give water to Thomas'.

(8) [ɔ̀rɔ̀ɔ̀ tí hí ká-ŋ tómà n]
1PL IPFV.AFF water give-PROG Thomas to
'We are giving water to Thomas'.

Their true LH melody only becomes apparent when the pronoun is placed in front of a L toned object or a LH object. The pronoun and object noun only come into direct contact in affirmative perfective clauses, where there is a zero predicate marker. Sentences (9), (10) and (11) below provide some examples:

(9) [mʊ̌n sìsì kídá]
1SG horse put down
'I put down the horse'.

(10) [mʊ̌n gùrà kìdà]¹²
1SG baton put down
'I put the baton down'.

(11) [ɪ̀rɪ́ɪ́ kàsì yì]
2SG basket see
'You saw the basket'.

Interestingly enough, we can see from (12) and (13) that the L toned predicate marker **bìr**, which marks negative imperfective clauses, does not cause the LH melody to appear:

(12) [mʊ̀n bìr géɛ́-lɛ́]
1SG IPFV.NEG come-PROG
'I am not coming'.

(13) [ɪ̀rɪ̀ɪ̀ bìr hí ká-ŋ tómâ nì y]
2SG IPFV.NEG water give-PROG Thomas to NEG
'You aren't giving water to Thomas'.

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¹² The reader will have noticed that the tone of the verb /kídá/ is different in these two sentences. This is due to tonal interactions between the object and the verb. However a full discussion of these processes is beyond the scope of this paper.

The short forms of the 1ˢᵗ and 2ⁿᵈ person pronouns carry a H tone and do not show any alternate forms, as seen in sentences (14) to (17):

(14) [ń   nágá   gùlà]
     1SG sorgho   get.down
     'I got down the sorgho'.

(15) [í   kàsì   gùlà]
     2SG basket   get.down
     'You got the basket down'.

(16) [ɔ́   sìsí   gùlà]
     1PL horse   get.down
     'I got the horse down'.

(17) [á   dúrè   gùlà]
     2PL partridge get.down
     'You got the partridge down'.

The third person pronouns spread their L tone to the H toned predicate markers /ní/ for negative perfective clauses (18) and /tí/ for affirmative perfective clauses (19), as well as spreading to the first syllable of H toned objects (20):

(18) [à   nì   hí   ká   Tómà   nì   y]
     3SG PFV.NEG water give   Thomas to   NEG
     'He didn't give water to Thomas'.

(19) [ǹ   tì   hí   ká-ŋ   Tómà   n]
     3PL IPFV.AFF water give-PROG Thomas to
     'They are giving water to Thomas'.

(20) [à   nàgá   gùlà]
     3SG sorgho   get.down
     'He got the sorgho down'.

Note that the L tone of the pronoun does not spread to the H tone of a HL melody (21), offering evidence that spread applies to the tone melody.

(21) [à   dúrè   gùlà]
     3SG partridge get.down
     'He got the partridge down'.

There is also one context that blocks the L tone spread. When a monosyllabic H toned object precedes a L toned verb, the L tone of the pronoun does not spread to the object, as seen in (22):

(22) [à   hí   gʊ̀là]
      3SG   water   get.down
      'He got down the water'.

We can summarize our observations of the tonal behaviour of the personal pronouns with the following statements:

·   The first and second person long pronouns have a LH melody, but are realized L unless followed by a L tone.

·   The first and second person short pronouns have a H melody and do not show any alternate forms.

·   The third person pronoun, which is identical in both sets, spreads its L tone one syllable to the right. This spread affects H toned predicate markers, and H tone objects when there is no predicate marker.

·   The L spread is blocked however when a H toned monosyllabic object noun is followed by a L toned verb.

3.2 Pronouns within a possessive phrase

When the personal pronouns are used within a possessive phrase, the tones change. In both sets of the pronouns, they become L toned. The L tone of the first and second person pronouns acts in the same way as the third person personal pronoun. The L tone will spread to the first syllable of a H toned noun. Sentences (23) to (25) show this spread. Examples (a) use the long pronoun, while examples marked (b) show the short pronoun:

(23a) [mʊ̀n   hì]   (23b) [ŋ̀   hì]
       1SG.POSS   water   1SG.POSS   water
       'my water'   'my water'

(24a) [ɩ̀rɩ̀ɩ̀   pètʊ́]   (24b) [ɩ̀   pètʊ́]
       2SG.POSS   shorts   2SG.POSS   shorts
       'your shorts'   'your shorts'

(25a) [ɔ̀rɔ̀ɔ̀   nàgá]   (25b) [ɔ̀   nàgá]
       1PL.POSS   sorgho   1PL.POSS   sorgho
       'our sorgho'   'our sorgho'

The L tone does not spread to a noun with a HL melody, as in (26) and (27):

(26a) [mʊ̀n   bûr]   (26b) [m̀   bûr]
       1SG.POSS bread   1SG.POSS   bread
       'my bread'   'my bread'

(27a) [ɔ̀rɔ̀ɔ̀   dúrɛ̀]   (27b) [ɔ̀   dúrɛ̀]
1SG.POSS   partridge   1SG.POSS   partridge
'my partridge'   'my partridge'

However, when the noun is L toned a H tone is inserted as shown is (28) to (30):

(28a) [mʊ̀n   bír]   (28b) [m̀   bír]
1SG.POSS   goat   1SG.POSS   goat
'my goat'   'my goat'

(29a) [ìrìì   gɛ́r]   (29b) [ì   gɛ́r]
2SG.POSS   stone   2SG.POSS   stone
'your stone'   'your stone'

(30a) [àràà   kásì]   (30b) [à   kásì]
2PL.POSS   basket   2PL.POSS   basket
'your basket'   'my basket'

Finally, in examples (31) and (32) we see that when the noun has a LH melody the noun retains its melody fully:

(31a) [mʊ̀n   kŭl]   (31b) [ŋ̀   kŭl]
1SG.POSS   ram   1SG.POSS   ram
'my ram'   'my ram'

(32a) [ìrìì   sìsí]   (32b) [ì   sìsí]
2SG.POSS   horse   2SG.POSS   horse
'your horse'   'your horse'

When it comes to the third person pronoun, as with the non possessive use of the personal pronouns, it behaves in a different manner from the first and second person pronouns. The L tone of the pronoun will spread, but now it affects the whole word, not just one syllable. Both H toned nouns and LH nouns are affected the same way. Examples (a) in sentences (33) to (35) show the spread to H toned nouns, while examples (b) show the spread to LH nouns:

H nouns:		*LH nouns*	

(33a) [à   hì]   (33b) [à   kùl]
3SG.POSS   water   3SG.POSS   ram
'his/her water'   'his/her ram'

(34a) [à   pètʊ̀]   (34b) [à   sìsì]
3SG.POSS   shorts   3SG.POSS   horse
'his/her shorts'   'his/her shorts'

(35a) [ǹ   nàgà]   (35b) [ǹ   zə̀kə̀]
       3PL.POSS sorgho   3PL.POSS shoulder
       'their sorgho'   'their shoulder'

The L tone does not spread to the HL melody as seen in (36):

(36a) [à   bûr]   (36b) [à   dúrɛ̀]
       3SG.POSS bread   3SG.POSS partridge
       'his/her bread'   'his/her partridge'

Unlike in sentences (28) to (30) where a H tone is inserted between the L pronoun and the L noun, in the possessive phrases there is no H tone insertion, as we see in sentence (37):

(37a) [à   gɛ̄r]   (37b) [à   kàsɪ̄]
       3SG.POSS stone   3SG.POSS basket
       'his/her stone'   'his/her basket'

The result of each of these processes is that in three of the four tone groups, the output is a surface L melody. However, there is a subtle difference: nouns that have an underlying L tone are realized with a fall at the end (40), whereas nouns that have an underlying H or LH melody do not end with a fall (38) and (39):

(38) /nágá/   [à   nàgà]
              3SG.POSS sorgho
              'his/her sorgho'

(39) /zə̀ká/   [à   zə̀kə̀]
              3SG.POSS shoulder
              'his/her shoulder'

(40) /kàsɪ̀/   [à   kàsɪ̄]
              3SG.POSS basket
              'his/her basket'

We can summarize the tonal behaviour of the possessive use of the personal pronouns in the following way:

- The pronouns are all low toned when used within a possessive phrase.
- The L tone of the first and second person pronouns in both sets spreads one syllable to the right to H and LH nouns, but not the HL nouns.
- The L tone of the third person pronoun within a possessive phrase spreads to the whole word.

3.3 Logophoric pronoun

At first glance, the logophoric pronoun appears to be the same as the 3s personal pronoun, however, its tonal behaviour is different. As we have already seen, the L tone of the third person personal pronoun spreads to the right. But, the L tone of the logophoric pronoun does not spread. The difference then between the following sentences can be seen on the tone of /**tí**/. In (41) the L tone of the personal pronoun has spread, but in (42) the L tone of the logophoric pronoun has not:

(41) [à   w   à   tì   gèέ]

      3SG   COMP   3SG   IPFV.AFF   come

      'He (John) said that he (Stephen) is coming'.

(42) [à   w   à   tí   gέέ]

      3SG   COMP   3SG.LOG   IPFV.AFF   come

      'He said that he (himself) is coming'.

I have also noticed similar behaviour with the reflexive pronouns, but have not yet been able to confirm exactly how they behave.

4. Preliminary proposal of tone processes

Based on the observations above, we can begin to formulate some initial tonal rules for Bissa Barka. But, at this early stage of analysis I will consider them more as observed processes rather than rules, until I can better formulate each one.

<u>Process number 1</u>: The LH melody is realized as L unless followed by a L tone.

We have observed this phenomenon when words with a LH melody are pronounced in isolation, as well as within a phrase. We can explain this process by positing that the H tone of the melody is a floating tone. When a word with a LH melody is followed by a H tone, the floating H can simply be absorbed into that tone, as seen in sentence (43). But when the LH melody is followed by a L tone, the H docks to the final syllable of the word, as in (44):

(43) L   L Ⓗ   H   (44) L   L Ⓗ   L

      │   ∧   ∧   │   │ │   ∧

      a   *sisi*   *kıda*   *a*   *sisi*   *gʋla*

      [à   sìsì   kídá]   [à   sìsí   gʋ̀là]

      3SG   horse   put down   3SG   horse   got down

      'He put down the horse'.   'He got down the horse'.

Hidden posits several floating tones in his analysis of Lebri tone (Hidden 1986), so a floating H tone in Barka is not an inconsistent solution. We still need to identify

all the contexts in which the LH melody appears as such, and in which contexts it is realized as L in order to properly formulate a rule.

<u>Process number 2</u>: Final L tones fall

We have observed that final L tones will fall whether the word is pronounced in isolation or as part of a phrase. Table 4 below shows the realization of each of the four tone melodies. The first word /pɛ́tʊ́/ 'boxer shorts' is associated with the H melody and as such does not fall. The words /kàsì/ 'basket' and /dʊ́rɛ̀/ 'partridge', which are associated with the L and HL melodies respectively both end with a L tone, and therefore do fall. The word /sìsí/ 'horse' is associated with the LH melody. It ends with a floating H as described above, and does not fall.

Table 4: Phonetic realization of the four basic tone melodies

Gloss	Underlying tone melody		Realization
'boxer shorts'	H	/pɛ́tʊ́/	[pɛ́tʊ́]
'horse'	LⒽ	/sìsí/	[sìsì]
'basket'	L	/kàsì/	[kàsɩ̀ᵓ]
'partridge'	HL	/dʊ́rɛ̀/	[dʊ́rɛ̀ᵓ]

The final falling tone allows us to clearly distinguish the four tone melodies, even out of context.

The final fall can also be seen at the end of a possessive phrase with the third person singular pronoun. Words with the LH melody do not end with a fall as in (45), whereas words with a L melody do end in a fall as in (46):

(45) /zə̀kə́/   [à   zə̀kə̀]
            3SG.POSS   shoulder
            'his/her shoulder'

(46) /kàsì/   [à   kàsɩ̀ᵓ]
            3SG.POSS   basket
            'his/her basket'

As with the first process, we still need to fully identify the contexts in which the final low tone falls. Only then can we say whether the fall occurs word finally, utterance finally or at some other boundary.

<u>Process number 3</u>: L tone spread

We have observed two distinct forms of L tone spread among the pronouns in Bissa Barka. The first and most common form is a L tone spread one syllable to the

right. This spread occurs in the 3rd person personal pronouns, and among the 1st and 2nd person pronouns when used as the head of a possessive phrase, both the long and short forms. The L tone of these pronouns spreads to the object in the absence of a predicate marker, in this case /nágá/ 'sorgho' in (47) and (48), and to H toned predicate markers (49):

(47) [à   nàgá   gʊ̀là]
     3SG   sorgho   get.down
     'He got the sorgho down'.

(48a) [ɔ̀rɔ̀ɔ̀   nàgá]   (48b) [ɔ̀   nàgá]
      1PL.POSS   sorgho   1PL.POSS   sorgho
      'our sorgho'   'our sorgho'

(49) [à   nì   hí   ká   tómà   nì   y]
     3SG   PFV.NEG   water   give   Thomas   to   NEG
     'He didn't give water to Thomas'.

The second type of spread is found among the 3rd person pronouns in possessive phrases. In this case, the L tone of the pronoun spreads to the whole word that it is modifying (50):

(50a) [à   pɛ̀tʊ̀]   (50b) [à   sìsì]
      3SG.POSS   shorts   3SG.POSS   horse
      'his/her shorts'   'his/her shorts'

This second type of spread seems to displace the existing melody. We would normally expect the final tone of /pɛtʊ/ in (50a) to fall, based on the second process described above. But, since the final tone does not fall, the H melody associated with /pɛ́tʊ́/ must still be part of the phrase and blocks the final fall.

Process number 4: Restriction on L + L

This restriction in the language causes two different reactions. Firstly, it will block L tone spread when that would result in a purely L sequence. This blocking is clearly seen in affirmative perfective clauses as in (51) where there is a zero predicate marker. A H toned monosyllabic object is realized with a H tone; the L tone of the subject does not spread:

(51) [à   hí   gʊ̀là]
     3SG   water   get.down
     'He got down the water'.

The second effect of the L + L restriction is the insertion of H tone in possessive constructions with a L tone noun when combined with the 1st or 2nd person pronoun, as in (52) and (53):

(52a) /mʊ̀n bìr/   [mʊ̀n   bír]
                          1SG.POSS   goat
                          'my goat'

(52b) /m̀ bìr/   [m̀   bír]
                          1SG.POSS   goat
                          'my goat'

(53a) /àràà kàsì/   [àràà   kásì]
                          2PL.POSS   basket
                          'your basket'

(53b) /à kàsì/   [à   kásì]
                          2PL.POSS   basket
                          'your basket'

However, this restriction does not apparently hold with the 3rd person possessive pronoun as seen in sentences (54) and (55):

(54)   /à bìr/   [à   bìr]
                        3SG.POSS   goat
                        'his/her goat'

(55)   /à kàsì/   [à   kàsì]
                        3SG.POSS   basket
                        'his/her basket'

We will need to examine more contexts to see what L combination is not allowed as it's not simply two consecutive L toned syllables, nor two consecutive L toned words. It may be as simple as applying the Obligatory Contour Principle, but we will need to examine more contexts before we can provide a precise definition.

5. Conclusion

In summary, our study on the tone in the personal pronouns in Bissa Barka has revealed that Bissa Barka has two underlying level tones, H and L that combine to create four tone melodies: H, L, LH and HL. These four melodies behave in distinct ways.

We have observed four tonal processes:

1. LH is realized as L

2. Final L tones fall

3. L tone spread

4. Restriction on L + L

Each of these processes of course lead to many more questions that will be the subject of future investigations.

Abbreviations

COMP	complementizer
IPFV.AFF	imperfective.affimative
IPFV.NEG	imperfective.negative
LOG	logophoric
NEG	negative
PFV.NEG	perfective.negative
POSS	possessive
PROG	progressive

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Pamela Morris

Tone in the pronominal system in Bissa Barka

This paper presents an introductory overview of the pronominal system in Bissa Barka, an Eastern Mande language spoken in south-east Burkina Faso and northern Ghana. Primary focus is placed on the tonal behaviour of the pronouns. The paper begins with a discussion of the number of level tones represented in the language, including a summary of past tonal research. Next, it presents the two sets of personal pronouns used in the language. The tonal behaviour of each of the personal pronouns is presented, along with the tonal behaviour of the pronouns in a possessive phrase, and the tonal behaviour of the logophoric pronoun. The paper ends with a discussion of the four tonal processes identified in the pronominal system including a floating H tone, L tone spread, final falling tone and a restriction of L tone followed by a L tone.

Keywords: Bissa, Barka, Eastern Mande, pronominal systems, logophoric pronoun, tone systems, floating tone, low tone spread

Pamela Morris

Le ton dans le système pronominal du bissa barka

Cet article présente une introduction au système pronominal du bissa barka, une langue mandé-est parlée au sud-est du Burkina Faso et au nord du Ghana. Il met l'accent sur le comportement tonal des pronoms. L'étude commence par une discussion sur le nombre de tons unis présents dans la langue et un aperçu des travaux antérieurs traitant du ton en bissa. Puis les deux groupes de pronoms personnels bissa barka sont présentés. Le comportement tonal de chaque pronom ten fonction sujet est analysé, de même que dans le syntagme génitival ; une attention spéciale est portée au pronom logophorique qui ne se distingue du pronom de 3ème personne que par son influence tonale. L'article s'achève par un résumé des

quatre phénomènes tonaux identifiés dans le système pronominal : le ton H flottant, la propagation du ton B, la chute du niveau du ton final et la restriction de la combinaison B suivie de B.

Mots clés : bissa, barka, mandé-est, système pronominal, pronom logophorique, système tonal, ton flottant, propagation du ton bas

Памела Морис

Тон в системе местоимений биса-барка

В статье даётся предварительный обзор местоименной системы биса-барка, языка восточной группы манде, на котором говорят на юго-востоке Буркины Фасо и в северной Гане. Главное внимание уделено тональному поведению местоимений. Обсуждается количество уровневых тонов в языке, даётся обзор предшествующих публикаций на эту тему. Представлены две серии личных местоимений языка биса-барка, рассматривается тональное поведение каждого из местоимений, в том числе в генитивной конструкции; особое внимание уделено логофорическому местоимению. Статья завершается обсуждением четырёх тональных явлений, обнаруженных в прономинальной системе: плавающего высокого тона; продвижения вправо низкого тона; конечного понижения тона; ограничение на низкий тон, за которым следует другой низкий тон.

Ключевые слова: биса, восточные манде, прономинальная система, логофорическое местоимение, тональная система, плавающий тон, продвижение низкого тона