A grammar of Gaahmg, a Nilo-Saharan language of Sudan
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12 Body part locatives

Locative phrases can consist of a noun of reference followed by a body part functioning as a locative, which in this thesis is called a 'body part locative'. Body part locatives are analyzed categorically as locatives in that the original body part noun has become a grammaticalized form which no longer refers to person. In 5.2.4, it was shown that the vowels of inherently possessed body part nouns correspond to the person possessing the nouns. Such body parts used as locatives may have generalized first or second person vowels when used for the location of third person nouns.

(1) ɛ̄   àn   **ūfú**   **ɔ́ɔ́l**   ḓɛ̄ɛ̄nɛ̄.
     3sN   staying   tree   up   only
     ' . . as he remained in the tree.' (Nyee35)

In (1), *ɔ́ɔ́l* 'up' is a body part locative with the same segmental form as *ɔ̄ɔ́l* 'your head (2sPs)'. The noun *ɔ̄ɔ́l* 'your head' is a second person singular inherently possessed singular body part requiring a person marker vowel. In contrast, the locative *ɔ́ɔ́l* 'up' is used with the third singular noun *ūfú* 'tree', and the vowel *ɔɔ* no longer refers to person. In this way, the body part has become grammaticalized as a locative rather than as a body part. The second person vowel of the locative form *ɔ́ɔ́l* 'up' is random in that other body part locatives use first person or third person vowels.

As will be discussed in 14.9.3, possession of body part nouns is different than for other nouns in that the possessor precedes the body part (*ɟɛ̄n lúḓ* 'person's leg') instead of following and in the genitive case (*gàḓááè é ɟên* 'basket of person.GEN'). The construction of locative phrases with body part locatives resembles that of possessed body parts—the body part follows the possessor and the body part locative follows the noun of reference. However, since *ɔ́ɔ́l* 'up' and other singular body part locatives can describe the location of any singular person noun or pronoun, the locative is a grammaticalized form which no longer refers to any person.

In (2), body part nouns and the corresponding body part locatives are listed in both singular and plural forms along with their meanings. All body part locatives have the same segmental form as the corresponding body part noun; however, locatives (a-c) which are inherently possessed body parts have different tone than the corresponding body part nouns. Locatives which are inherently possessed body parts include a person marker vowel only because the body part cannot occur without one. The person marker vowel does not represent any person in its locative usage unless the prepositional prefix *ḓ-* is attached, as discussed shortly. As to which of the three vowel-person forms the grammticalized body part employs, appears random. The locative of (a) uses the third person vowel, the locative of (b)

uses the second person vowel, and the locative of (c) can use either the first or third person vowel in singular locative form, but only the first person vowel in plural form.

(2) **Body parts and corresponding body part locatives**

Noun SG	Noun PL		LOC SG	LOC PL	
(a) ɛ̄ɛ̄lg	ìil-g	'stomach.3P'	ɛ́ɛ́lg	îilg	'in, inside of'
(b) ɔ̄ɔ̄l	ùùl-g	'head.2P'	ɔ́ɔ́l	úùlg	'above, over, on'
(c) āāɲ/	ə̀ə̀ɲ-g/	'back.1P/	ááɲ/	ə̂ə̀ng	'behind, in back of'
ɛ̄ɛ̄ɲ	ìiɲ-g	back.3P'	ɛ́ɛ́ɲ		
(d) bɔ̄l	bə̀l-g	'vagina'	bɔ̄l	bə̀lg	'under, beneath'
(e) mūū	mùù-gg	'face'	mūū	mùùgg	'before, in front of'
(g) bèɲ-ɟ	bèɲ-āāgg	'side'	bèɲɟ	bèɲāāgg	'next to, beside

In each example of (3), a body part locative follows the noun of reference. The body part locative agrees in number with the head noun—plural in (a) and singular in (b-d).

(3) **Body part locatives**

(a) ú = ɲíl   gàr = ā   súùgg   **îilg**   ɛ́   gārá   féðáná   ɟègg = ā
2pN = know   place = DEF   market   in   where   placed   things = DEF
'Do you know the place in the market where things . . ' (Fand27)

(b) ɛ̄   máà   īiŋ   ɛ̄   àn   mɔ̄sɔ̀r   **ɔ̄ɔ̄l**
3sN   prides   3sR   3sN   stay   horse   up
' . . taking pride in himself as he sits up on the horse.' (Minj14)

(c) fāā   ná   bɛ̂l   cɔ̀ɔ̀ɟɟɔ̀ɔ̀.-ɛ̀ɛ̀n,   ɛ̄   àn   gɔ̄ì   **bə̀l**
old   REL.SG   called   Joojo-3sO   3sN   staying   tree.type   beneath
'An old man named Joojo was sitting under a Gai tree.' (Jooj3)

(d) ɛ̄   rāgg   fɔ́l   **mūū**
3sN   stop   hole   front
'He stopped in front of the hole.' (Goat17-18)

When body part locatives are used with pronouns of reference instead of nouns of reference, the object pronoun is attached to the verb and the prepositional prefix ḑ- 'to' attaches to the body part locative, as will be discussed in 11.4. Body part locatives with pronominal reference are also called locative prepositional pronouns, as discussed in 5.7.

In (4), the third singular object pronoun = i attaches to the verb. The prepositional prefix ḑ- marks the body part locative as indicating a pronoun as well as a location,

and thus the vowel *ɛɛ* indicates the third person singular pronoun (*ḍ-ɛ́ɛ́ɲ* 'to behind him').

(4) āld̪=á   ɛ̄   pɔ̂rd̪=ì   d̪-**ɛ́ɛ́ɲ**
     fox=DEF   3sN   jump=3sAM   PP-behind.3sO
     'Fox jumped behind him.' (Goat12)

If instead the meaning were 'Fox jumped behind (over) you', the construction *ḍ-ɔ́ɔ́ɲ* (PP-behind.2sO; locative prepositional pronoun) would have been used. If the meaning were 'Fox jumped on his back' the construction *ḍ-ēēɲ* (PP-back.3sPs; possessed body part) with Low tone would have been used [see also (6d) of 11.4]. If the meaning were 'Fox jumped behind the tree', the construction *pɔ̂rd̪ɔ̄ ūfú ɛ́ɛ́ɲ* (jump tree behind; body part locative) would have been used.

Locative phrases are adjuncts of the verb and are equivalent in function to adverbs of place such as *t̪ɛ* 'there, here' discussed in 13.3. However, since locative phrases have a different construction than adverbs of place, they are analyzed as separate lexical categories.

Although body part locatives are analyzed as separate morphemes, the initial vowels of some body part locatives are sometimes elided, undergo [ATR] changes, and undergo tone changes similar to those of clitics, depending on the nouns they follow. A summary of these changes is given here with reference to the list of (5), and examples follow in the next sections. Elision and [ATR] changes only occur in the singular body part locative of (5a) and to a lesser extent in the singular locatives of (b-c). The changes mostly depend on the speed of the utterance, but also on the final segments of the nouns the locatives follow. Tonal changes in body part locatives nearly always take place, regardless of the speed of utterance. However, there are no tonal changes for the singular locative of (g) and the plural locatives of (d-g) with underlying initial Low tone. The examples that follow represent fast speech and demonstrate the most possible changes.

(5) **Body part locatives**
     LOC SG   LOC PL
(a) ɛ́ɛ́lg   îɪlg   'in, inside of'
(b) ɔ́ɔ́l   úùlg   'above, over, on'
(c) áán/ɛ́ɛ́ɲ   ɔ́ə̀ng   'behind, in back of'
(d) bāl   bə̀lg   'under, beneath'
(e) mūū   mùùgg   'before, in front of'
(g) bè̤ɲɟ   bè̤ɲāāgg   'next to, beside

12.1 Segmental formation of body part locatives

The body part locatives *ɛ́ɛ́lg* 'in' and *ɔ́ɔ́l* 'above' attach to singular nouns with

stem-final approximant *ð,* evidenced by the vowel quality change of the locative
vowel in (6b) and (d). However, the body part locative *ááɲ/ééɲ* 'behind' is separate
from singular nouns as vowel quality of the locative never changes.

(6) **Singular body part locatives *éélg* 'in', *ɔɔl* 'above', *ááɲ/ééɲ* 'behind'**
     on singular nouns with stem-final *ð*

	N SG	N SG 'in'	N SG 'above'	N SG 'behind'		
(a)	ɟááð	ɟááð = éélg	ɟááð = ɔɔl	ɟááð ááɲ	ɟááð ééɲ	'old clothes'
(b)	mɔɔ̄ð	mɔ̄ɔ̄ð = íílg	mɔ̄ɔ̄ð = úúl	mɔ̄ɔ̄ð ááɲ	mɔ̄ɔ̄ð ééɲ	'grandfather'
(c)	mēēð	mēēð = éélg	mēēð = ɔɔl	mēēð ááɲ	mēēð ééɲ	'tree type'
(d)	kūūð	kūūð = íílg	kūūð = úúl	kūūð ááɲ	kūūð ééɲ	'shadow'
(e)	yààð	yààð = ɛ̄ɛ̄lg	yààð = ɔ̄ɔ̄l	yààð āāɲ	yààð ɛ̄ɛ̄ɲ	'sister'

Body part locatives attached to monosyllabic underlying approximant-final stems
are shown in (7). In (a-e), the singular body part locatives either cause the
underlying-final approximant to surface as such or elide the approximant. The
vowel of the locatives *éélg* 'in' and *ɔɔl* 'above' take the [ATR] quality of the noun
to which they attach. However, the body part locative *ááɲ/ééɲ* 'behind' is separate
from singular nouns as vowel quality of the locative does not change in (f-h).

(7) **Singular body part locatives *éélg* 'in', *ɔɔl* 'above', *ááɲ/ééɲ* 'behind'**
     on monosyllabic underlying approximant-final stems

	Stem-final	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
(a)	aɔ /aw/	káɔ̂	kâw = ɛ̄ɛ̄lg	kâ. = ɔɔl	kâw āāɲ	'hyena'
(b)	aaɔ /aaw/	bààɔ̀	bààw = ɛ̄ɛ̄lg	bàà. = ɔɔl	bààw āāɲ	'father'
(c)	ɛɔ /ɛw/	bɛɔ̂	bɛ̂w = ɛ̄ɛ̄lg	bɛ̂. = ɔɔl	bɛ̂w āāɲ	'tree type'
(d)	aɛ /ay/	ṭāɛ̀	ṭâ. = ɛ̄ɛ̄lg	ṭâ = ɔɔl	ṭây āāɲ	'giraffe'
(e)	aaɛ /aay/	sāāɛ̄	sāā = éélg	sāā. = ɔɔl	sāāy ááɲ	'coconut'
(f)	əəi /əəy/	màə̀ì	màə̀.ī = īlg	màə̀. = ūūl	màə̀ì āāɲ	'farm fence'
(g)	ui /uy/	mūī	mū.í = ílg	mūī. = úúl	mūī ááɲ	'wildebeest'
(h)	uui /uuy/	ɲūūì	ɲūù. = īilg	ɲūūì. = ūūl	ɲūūì āāɲ	'leopard'

Similarly, in monosyllabic long vowel-final stems, the vowel of the locatives *éélg*
'in' and *ɔɔl* 'above' take the [ATR] quality of the noun to which they attach, but
ááɲ/ééɲ 'behind' is separate.

(8) **Singular body part locatives *éélg* 'in', *ɔɔl* 'above', *ááɲ/ééɲ* 'behind'**
     on monosyllabic long vowel-final stems

	Stem-final	N SG	N SG 'in'	N SG 'above'	N SG 'behind'		
	ɛ	rɛ̄ɛ̄	rɛ̄ɛ̄. = éélg	rɛ̄ɛ̄. = ɔɔl	rɛ̄ɛ̄ ááɲ	rɛ̄ɛ̄ ééɲ	'cotton'
	a	máà	máà. = ɛ̄ɛ̄lg	máà. = ɔɔl	máà āāɲ	máà ɛ̄ɛ̄ɲ	'house'
	ɔ	ṭɔ́ɔ́	ṭɔ́ɔ́. = éélg	ṭɔ́ɔ́. = ɔɔl	ṭɔ́ɔ́ ááɲ	ṭɔ́ɔ́ ééɲ	'cow'

Stem-final	N SG	N SG 'in'	N SG 'above'	N SG 'behind'		
i	ɟìì	ɟìì. = īīlg	ɟìì. = ūūl	ɟìì āāɲ	ɟìì ēēɲ	'turkey'
ə	wɔ̄ɔ̄	wɔ̄ɔ̄. = íílg	wɔ̄ɔ̄. = úúl	wɔ̄ɔ̄ ááɲ	wɔ̄ɔ̄ ééɲ	'shade'
u	bùù	bùù. = īīlg	bùù. = ūūl	bùù āāɲ	bùù ēēɲ	'chicken coop roof'

The body part locative *éélg* 'in' can attach to polysyllabic singular nouns with stem-final vowel. Following some nouns with final long vowel such as in (9a,c), the initial long vowel of the locative is elided. With other nouns such as (b) there can be partial elision. There can also be elision of noun short-final vowels as in (g,i,j). In (d,f,h,k), the locative is separate, evidenced by the vowel quality of the locative not changing to [+ATR]. In (e), it is ambiguous whether the locative attaches or not. The locative *ɔ́ɔ́l* 'above' attaches to vowel-final stems to a lesser extent than *éélg*— in these examples it is only attached in (j). The locative *ááɲ/ééɲ* 'behind' is always separate.

(9) **Singular body part locatives *éélg* 'in', *ɔ́ɔ́l* 'above', *ááɲ/ééɲ* 'behind'**
on polysyllabic vowel-final stems

	Stem-final	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
(a)	ɛɛ	ābbéé	ābbéé = lg	ābbéé ɔ́ɔ́l	ābbéé ááɲ	'uncle'
(b)	ii	ūrīī	ūrī.í = ílg	ūrīī ɔ́ɔ́l	ūrīī ááɲ	'ostrich'
(c)	aa	wááyáá	wááyáá = lg	wááyáá ɔ́ɔ́l	wááyáá ááɲ	'bird type'
(d)	əə	gɔ̄ūld̯ɔ̀ɔ̀	gɔ̄ūld̯ɔ̀ɔ̀ ēēlg	gɔ̄ūld̯ɔ̀ɔ̀ ɔ̄ɔ̄l	gɔ̄ūld̯ɔ̀ɔ̀ āāɲ	'fish'
(e)	ɔɔ	mélɔ̄ɔ̄	mélɔ̄ɔ̄ éélg	mélɔ̄ɔ̄ ɔ́ɔ́l	mélɔ̄ɔ̄ ááɲ	'sugar cane'
(f)	uu	ɔ̄yúú	ɔ̄yúú éélg	ɔ̄yúú ɔ́ɔ́l	ɔ̄yúú ááɲ	'tooth brush'
(g)	a	t̯ááðà	t̯ááð = ɛ̀ēlg	t̯ááðà ɔ̄ɔ̄l	t̯ááðà āāɲ	'grandmother'
(h)	ə	ɔ̄ŋɔ̀	ɔ̄ŋɔ̀ ēēlg	ɔ̄ŋɔ̀ ɔ̄ɔ̄l	ɔ̄ŋɔ̀ āāɲ	'little girl'
(i)	ɔ	ɔ̀nsɔ̀	ɔ̀ns = ɛ̀ēlg	ɔ̀nsɔ̀ ɔ̄ɔ̄l	ɔ̀nsɔ̀ āāɲ	'cooking plate'
(j)	u	kúúfú	kúúf = íílg	kúúf = úúl	kúúfú ááɲ	'crushed beans'
(k)	uə	būɔ̀	būɔ̀ ēēlg	būɔ̀ ɔ̄ɔ̄l	būɔ̀ āāɲ	'tree type'

The body part locative *éélg* 'in' can attach to singular nouns with stem-final consonants evidenced by [ATR] harmony, but the other vowel-initial singular locatives remain separate.

(10)   **Singular body part locatives éélg 'in', ɔ́ɔ́l 'above', ááɲ/ééɲ 'behind'**
       on singular nouns with stem-final consonants

	Stem-final	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
(a)	bb	ɟílə̀bb	ɟílə̀bb = īīlg	ɟílə̀bb ɔ́ɔ́l	ɟílə̀bb āāɲ	'water spring'
(b)	d̪	māād̪	māād̪ = éélg	māād̪ ɔ́ɔ́l	māād̪ ááɲ	'snake type'
(c)	d	dɔ̃d	dɔ̃d = éélg	dɔ̃d ɔ́ɔ́l	dɔ̃d ááɲ	'bird type'
(d)	ɟɟ	bìmìríɟɟ	bìmìríɟɟ = íílg	bìmìríɟɟ ɔ́ɔ́l	bìmìríɟɟ ááɲ	'bird type'
(e)	gg	kàmàlɔ̀gg	kàmàlɔ̀gg = ēēlg	kàmàlɔ̀gg ɔ̄ɔ̄l	kàmàlɔ̀gg āāɲ	'woman'
(f)	s	márɔ̄ɔ̄s	márɔ̄ɔ̄s = éélg	márɔ̄ɔ̄s ɔ́ɔ́l	márɔ̄ɔ̄s ááɲ	'spider'
(g)	m	d̪ə̄m	d̪ə̄m = íílg	d̪ə̄m ɔ́ɔ́l	d̪ə̄m ááɲ	'Arab'
(h)	n	séèn	séèn = ēēlg	séèn ɔ̄ɔ̄l	séèn āāɲ	'ruler'
(i)	ɲ	ɲéèŋ	ɲéèŋ = ēēlg	ɲéèŋ ɔ̄ɔ̄l	ɲéèŋ āāɲ	'spear type'
(j)	r	púr	púr = íílg	púr ɔ́ɔ́l	púr ááɲ	'flower'
(k)	l	d̪ɔ̀ŋɔ̀l	d̪ɔ̀ŋɔ̀l = ēēlg	d̪ɔ̀ŋɔ̀l ɔ̄ɔ̄l	d̪ɔ̀ŋɔ̀l āāɲ	'millipede'

Regardless of the stem-final segments, the plural body part locatives ĩ́lg 'in', úùlg 'above', and ɔ̂ə̀ŋg 'behind' of (6-10) do not undergo changes and are thus analyzed as separate words from the preceding plural nouns. Singular locatives are also presented for comparison.

(11)   **Body part locative éélg 'in' and ĩ́lg 'in'**
       on various segment-final singular and plural nouns

Suffix	N SG	N PL	N SG 'in'	N PL 'in'	
-̄gg	wáár	wáár-g	wáár éélg	wáár-g ĩ́lg	'insect'
-gg	wááyáá	wááyáá-gg	wááyáá-lg	wááyáá-gg ĩ́lg	'bird'
-̄gg	kúúfú	kúúfú-gg	kúúf-íílg	kúúfú-gg ĩ́lg	'beans'
-Āgg	céld̪	céld̪-āgg	céld̪ éélg	céld̪-āg ĩ́lg	'broom'
-ÉĒgg	púr	púr-íīgg	púr-íílg	púr-íīgg ĩ́lg	'flower'
-ʌʌgg	îl	íl-ə̀ə̀gg	íl èēlg	íl-ə̀ə̀gg ĩ́lg	'horn'
-ʌʌd̪	kàmàlɔ̀gg	kàmàlɔ̀gg-ààd̪	kàmàlɔ̀gg ēēlg	kàmàlɔ̀gg-ààd̪ ììlg	'woman'
-̄d̪	ābbéé	ābbéē-d̪	ābbéé-lg	ābbéē-d̪ ĩ́lg	'uncle'
-d̪/-gg	gə̀rmù-d̪	gə̀rmù-gg	gə̀rmù-d̪ ēēlg	gə̀rmù-gg ììlg	'insect'
-Ed̪/-gg	ɟíŋ-íd̪	ɟíŋ-g	ɟíŋ-íd̪-íílg	ɟíŋ-g ĩ́lg	'louse'

(12) **Body part locative ɔ́ɔl 'above' and úùlg 'above'**
on various segment-final singular and plural nouns

Suffix	N SG	N PL	N SG 'above'	N PL 'above'	
-⁻gg	wáár	wáār-g	wáár ɔ́ɔl	wáār-g úùlg	'insect'
-gg	wááyáá	wááyáá-gg	wááyáá ɔ́ɔl	wááyáá-gg úùlg	'bird'
-⁻gg	kúúfú	kúúfú-gg	kúúf=úúl	kúúfú-gg úùlg	'beans'
-Āgg	céld̪	céld̪-āgg	céld̪ ɔ́ɔl	céld̪-āgg úùlg	'broom'
-ÉĒgg	púr	púr-íígg	púr ɔ́ɔl	púr-íígg úùlg	'flower'
-AAgg	îl	íl-ə̀ə̀gg	îl ɔ̄ɔl	íl-ə̀ə̀gg ūùlg	'horn'
-AAd̪	kàmàlɔ̀gg	kàmàlɔ̀gg-ààd̪	kàmàlɔ̀gg ɔ̄ɔl	kàmàlɔ̀gg-ààd̪ ūùlg	'woman'
-⁻d̪	ābbéɛ́	ābbéɛ̄-d̪	ābbéɛ́ ɔ́ɔl	ābbéɛ̄-d̪ úùlg	'uncle'
-d̪/-gg	gə̀rmù-d̪	gə̀rmù-gg	gə̀rmù-d̪ ɔ̄ɔl	gə̀rmù-gg ūùlg	'insect'
-Ed̪/-gg	ɟíŋ-íd̪	ɟíŋ-g	ɟíŋ-íd̪ ɔ́ɔl	ɟíŋ-g úùlg	'louse'

(13) **Body part locative áán/ɛ́ɛ́n 'behind' and ɔ́ə̀ŋg 'behind'**
on various final segments of singular and plural nouns

Suffix	N SG	N PL	N SG 'behind'	N PL 'behind'	
-⁻gg	wáár	wáār-g	wáár áán	wáār-g ɔ́ə̀ŋg	'insect'
-gg	wááyáá	wááyáá-gg	wááyáá áán	wááyáá-gg ɔ́ə̀ŋg	'bird'
-⁻gg	kúúfú	kúúfú-gg	kúúfú áán	kúúfú-gg ɔ́ə̀ŋg	'beans'
-Āgg	céld̪	céld̪-āgg	céld̪ áán	céld̪-āg ɔ́ə̀ŋg	'broom'
-ÉĒgg	púr	púr-íígg	púr áán	púr-íígg ɔ́ə̀ŋg	'flower'
-AAgg	îl	íl-ə̀ə̀gg	îl àān	íl-ə̀ə̀gg ɔ̄ə̀ŋg	'horn'
-AAd̪	kàmàlɔ̀gg	kàmàlɔ̀gg-ààd̪	kàmàlɔ̀gg āān	kàmàlɔ̀gg-ààd̪ ɔ̄ə̀ŋg	'woman'
-⁻d̪	ābbéɛ́	ābbéɛ̄-d̪	ābbéɛ́ áán	ābbéɛ̄-d̪ ɔ́ə̀ŋg	'uncle'
-d̪/-gg	gə̀rmù-d̪	gə̀rmù-gg	gə̀rmù-d̪ āān	gə̀rmù-gg ɔ̄ə̀ŋg	'insect'
-Ed̪/-gg	ɟíŋ-íd̪	ɟíŋ-g	ɟíŋ-íd̪ áán	ɟíŋ-g ɔ́ə̀ŋg	'louse'

12.2 Tonal formation of body part locatives

The singular body part locatives ɛ́ɛ́lg 'in', ɔ́ɔl 'above', áán/ɛ́ɛ́n 'behind' have underlying High tone and the plural body part locatives íìlg 'in', úùlg 'above', ɔ́ə̀ŋg 'behind' have underlying HL tone. Regardless of whether the locatives attach to nouns, initial High tone of the locative is lowered to Mid following noun-final Low tone, as shown by (14-19).

(14) **Singular body part locatives ɛ́ɛ́lg 'in', ɔ́ɔl 'above', áán/ɛ́ɛ́n 'behind'**
on stem-final ð nouns with three tone melodies

Tone	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
H	ɟááð	ɟááð=ɛ́ɛ́lg	ɟááð=ɔ́ɔl	ɟááð áán	'old clothes'
M	mɔ̄ɔ̄ð	mɔ̄ɔ̄ð=íílg	mɔ̄ɔ̄ð=úúl	mɔ̄ɔ̄ð áán	'grandfather'
L	yààð	yààð=ɛ̄ɛlg	yààð=ɔ̄ɔl	yààð āān	'sister'

(15)   **Singular body part locatives _éélg_ 'in', _ɔ́ɔ́l_ 'above', _ááɲ/ɛ́ɛ́ɲ_ 'behind'**
       on monosyllabic approximant-final stems with various tone melodies

Tone	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
H	ááɛ́	áá.ɛ́ = ɛ́lg	áá. = ɔ́ɔ́lg	ááy = ááɲ	'honey'
M	mūī	mū.í = ílg	mūī. = úúl	mūī ááɲ	'wildebeest'
L	bààɔ̀	bààw = ɛ̄ɛ̄lg	bàà. = ɔ̄ɔ̄l	bààw = āāɲ	'father'
HL	káɔ̀	kâw = ɛ̄ɛ̄lg	kâ. = ɔ̄ɔ̄l	kâw = āāɲ	'hyena'
ML	ɲūūì	ɲūù. = īīlg	ɲūūì. = ūūl	ɲūūì āāɲ	'leopard'

(16)   **Singular body part locatives _éélg_ 'in', _ɔ́ɔ́l_ 'above', _ááɲ/ɛ́ɛ́ɲ_ 'behind'**
       on monosyllabic long vowel-final stems with various tone melodies

Tone	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
H	cáá	cáá. = éélg	cáá. = ɔ́ɔ́l	cáá ááɲ	'wild cat'
M	mīī	mīī. = íílg	mīī. = úúl	mīī ááɲ	'goat'
L	ḍìì	ḍìì. = īīlg	ḍìì. = ūūl	ḍìì āāɲ	'rat'
HL	máà	máà. = ɛ̄ɛ̄lg	máà. = ɔ̄ɔ̄l	máà āāɲ	'house'
ML	ɟ̀ìì	ɟ̀ìì. = īīlg	ɟ̀ìì. = ūūl	ɟ̀ìì āāɲ	'turkey'

(17)   **Singular body part locatives _éélg_ 'in', _ɔ́ɔ́l_ 'above', _ááɲ/ɛ́ɛ́ɲ_ 'behind'**
       on polysyllabic vowel-final nouns with various tone melodies

Tone	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
H	áðá	áð = éélg	áð = ɔ́ɔ́l	áðá ááɲ	'dog'
M	ūrīī	ūrī.í = ílg	ūrīī ɔ́ɔ́l	ūrīī ááɲ	'ostrich'
L	ɔ̀nsɔ̀	ɔ̀ns = ɛ̄ɛ̄lg	ɔ̀nsɔ̀ ɔ̄ɔ̄l	ɔ̀nsɔ̀ āāɲ	'cooking plate'
HL	báḍà	báḍ = ɛ̀ɛ̄lg	báḍà ɔ̄ɔ̄l	báḍà āāɲ	'gourd cup'
ML	gāfà	gāf = ɛ̀ɛ̄lg	gāfà ɔ̄ɔ̄l	gāfà āāɲ	'farm, field'
MH	mɔ̄ðɔ́	mɔ̄ð = éélg	mɔ̄ðɔ́ ɔ́ɔ́l	mɔ̄ðɔ́ ááɲ	'locust'

(18)   **Singular body part locatives _éélg_ 'in', _ɔ́ɔ́l_ 'above', _ááɲ/ɛ́ɛ́ɲ_ 'behind'**
       on consonant-final nouns with various tone melodies

Tone	N SG	N SG 'in'	N SG 'above'	N SG 'behind'	
H	wáár	wáár = éélg	wáár ɔ́ɔ́l	wáár ááɲ	'insect type'
M	ḍɔ̄m	ḍɔ̄m = íílg	ḍɔ̄m ɔ́ɔ́l	ḍɔ̄m ááɲ	'Arab'
L	kààm	kààm = ɛ̄ɛ̄lg	kààm ɔ̄ɔ̄l	kààm āāɲ	'cow type'
HL	séèn	séèn = ɛ̄ɛ̄lg	séèn ɔ̄ɔ̄l	séèn āāɲ	'ruler'
HM	ɟórgāāl	ɟórgāāl = éélg	ɟórgāāl ɔ́ɔ́l	ɟórgāāl ááɲ	'bird type'
ML	kɔ̄ðèl	kɔ̄ðèl = ɛ̄ɛ̄lg	kɔ̄ðèl ɔ̄ɔ̄l	kɔ̄ðèl āāɲ	'baboon'
LH	àggáár	àggáár = éélg	àggáár ɔ́ɔ́l	àggáár ááɲ	'hunter, rider'
LM	gɔ̀ēn	gɔ̀ēn = éélg	gɔ̀ēn ɔ́ɔ́l	gɔ̀ēn ááɲ	'metal worker'
MH	bāár	bāár = éélg	bāár ɔ́ɔ́l	bāár ááɲ	'tribe member'

(19) **Plural body part locatives *fĩlg* 'in', *úùlg* 'above', *ɔ́ɔ̀ŋg* 'behind'**
on nouns with various tone melodies

Tone	N PL	N PL 'in'	N PL 'above'	N PL 'behind'	
H	wáār-g	wáār-g fĩlg	wáār-g úùlg	wáār-g ɔ́ɔ̀ŋg	'insect type'
M	ḓɔ̄m-g	ḓɔ̄m-g fĩlg	ḓɔ̄m-g úùlg	ḓɔ̄m-g ɔ́ɔ̀ŋg	'Arab'
L	kààmg	kààmg fĩlg	kààmg ūùlg	kààmg ɔ̄ɔ̀ŋg	'cow type'
HL	sɛ́ɛ̀n-g	sɛ́ɛ̀n-g fĩlg	sɛ́ɛ̀n-g ūùlg	sɛ́ɛ̀n-g ɔ̄ɔ̀ŋg	'ruler'
HM	ɟɔ́rgāāl-g	ɟɔ́rgāāl-g fĩlg	ɟɔ́rgāāl-g úùlg	ɟɔ́rgāāl-g ɔ́ɔ̀ŋg	'bird type'
ML	kɔ̄ðèl-g	kɔ̄ðèl-g fĩlg	kɔ̄ðèl-g ūùlg	kɔ̄ðèl-g ɔ̄ɔ̀ŋg	'baboon'
LH	àggáār-g	àggáār-g fĩlg	àggáār-g úùlg	àggáār-g ɔ́ɔ̀ŋg	'hunter, rider'
LM	gɔ̀ēn-g	gɔ̀ēn-g fĩlg	gɔ̀ēn-g úùlg	gɔ̀ēn-g ɔ́ɔ̀ŋg	'metal worker'
MH	bāár-g	bāár-g fĩlg	bāár-g úùlg	bāár-g ɔ́ɔ̀ŋg	'tribe member'

The singular body part locatives *bɔ̄l* 'under' and *mūū* 'in front of' have underlying
Mid tone which assimilates to final Low tone of a preceding noun. The locative
bèɲɟ 'beside' has underlying Low tone which is not affected by any tone.

(20) **Singular body part locatives *bɔ̄l* 'under', *mūū* 'in front of', *bèɲɟ* 'beside'**
on consonant-final nouns with various tone melodies

Tone	N SG	N SG 'under'	N SG 'in front of'	N SG 'beside'	
H	wáár	wáár bɔ̄l	wáár mūū	wáár bèɲɟ	'insect type'
M	ḓɔ̄m	ḓɔ̄m bɔ̄l	ḓɔ̄m mūū	ḓɔ̄m bèɲɟ	'Arab'
L	kààm	kààm bɔ̀l	kààm mùù	kààm bèɲɟ	'cow type'
HL	sɛ́ɛ̀n	sɛ́ɛ̀n bɔ̀l	sɛ́ɛ̀n mùù	sɛ́ɛ̀n bèɲɟ	'ruler'
HM	ɟɔ́rgāāl	ɟɔ́rgāāl bɔ̄l	ɟɔ́rgāāl mūū	ɟɔ́rgāāl bèɲɟ	'bird type'
ML	kɔ̄ðèl	kɔ̄ðèl bɔ̀l	kɔ̄ðèl mùù	kɔ̄ðèl bèɲɟ	'baboon'
LH	àggáár	àggáár bɔ̄l	àggáár mūū	àggáár bèɲɟ	'hunter, rider'
LM	gɔ̀ēn	gɔ̀ēn bɔ̄l	gɔ̀ēn mūū	gɔ̀ēn bèɲɟ	'metal worker'
MH	bāár	bāár bɔ̄l	bāár mūū	bāár bèɲɟ	'tribe member'

The plural body part locatives *bɔ̀lg* 'under', *mùùgg* 'in front of', *bèɲāāgg* 'beside'
also have initial Low tone which is not affected by any tone.

(21) **Plural body part locatives *bɔ̀lg* 'under', *mùùgg* 'in front of', *bèɲāāgg* 'beside'**
on nouns with various tone melodies

Tone	N PL	N PL 'under'	N PL 'in front of'	N PL 'beside'	
H	wáār-g	wáār-g bɔ̀lg	wáār-g mùùgg	wáār-g beɲāāgg	'insect'
M	ḓɔ̄m-g	ḓɔ̄m-g bɔ̀lg	ḓɔ̄m-g mùùgg	ḓɔ̄m-g beɲāāgg	'Arab'
L	kààmg	kààmg bɔ̀lg	kààmg mùùgg	kààmg beɲāāgg	'cow'
HL	sɛ́ɛ̀n-g	sɛ́ɛ̀n-g bɔ̀lg	sɛ́ɛ̀n-g mùùgg	sɛ́ɛ̀n-g beɲāāgg	'ruler'
HM	ɟɔ́rgāāl-g	ɟɔ́rgāāl-g bɔ̀lg	ɟɔ́rgāāl-g mùùgg	ɟɔ́rgāāl-g beɲāāgg	'bird'

Tone	N PL	N PL 'under'	N PL 'in front of'	N PL 'beside'	
ML	kɔ̄ðɛ̀l-g	kɔ̄ðɛ̀l-g bɔ̀lg	kɔ̄ðɛ̀l-g mùùgg	kɔ̄ðɛ̀l-g bɛɲāāgg	'baboon'
LH	àggáār-g	àggáār-g bɔ̀lg	àggáār-g mùùgg	àggáār-g bɛɲāāgg	'hunter'
LM	gɔ̀ēn-g	gɔ̀ēn-g bɔ̀lg	gɔ̀ēn-g mùùgg	gɔ̀ēn-g bɛɲāāgg	'metal worker'
MH	bāár-g	bāár-g bɔ̀lg	bāár-g mùùgg	bāár-g bɛɲāāgg	'tribe m.'