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A Nilo-Saharan Language of Sudan

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A grammar of Gaahmg

A Nilo-Saharan Language of Sudan

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Abbreviations

ACC	object (accusative)	LP	locative phrase
ACM	accompaniment	MID	middle verb form
ADJ	adjective	N	noun
ADJV	adjectival verb	NA	not attested
ADV	adverb	NP	noun phrase
ANTIP	antipassive	PAS	(agentless) passive
Ar	Arabic loan word	PAS.A	agented passive
CAUS	causative	PF	perfective
COMP	completive	PL	plural
COP	copula	PP	prepositional prefix
CONT.N	non-past continuous	POS	possessive
CONT.P	past continuous	PREP	preposition
D	deictic	PRON	pronoun
DAT	dative	QM	question marker
DEF	definite	RC	relative clause
DEM	demonstrative	RDM	relative (clause) definite marker
EV	evidential		
GEN	genitive	RDTM	relative (clause) dative marker
GP	general preposition		
INF	infinitive	REL	relativizer
INST	instrumental	REFL	reflexive
IMP	imperative	RLCM	relative (clause)
IPF	imperfect		locative copular marker
INCP	incompletive	SG	singular
LCM	locative copular marker	SBO	subordinate
LOC	locative		clause-final marker

SBO1	subordinate ‘when, because, questions’	VN []	verbal noun phonetic (surface) form
SBO2	subordinate ‘if’	//	phonemic (underlying) form
SBO3	subordinate ‘but’		form
SBJV	subjunctive	()	example number
UNC	uncertainty	{ }	rule number
UR	underlying representation	- =	bound suffix bound clitic
V	verb		
VP	verb phrase		

<u>Pronouns are glossed as follows:</u>		A	object (accusative)
1	first person	AM	marked object
2	second person	D	dative
3	third person	P	possessive
s	singular	R	reflexive
p	plural	O	object of preposition
N	subject (nominative)	b	bound

Suffix symbols are as follows:

-C	copied consonant taking all the features of the stem final consonant
-O	back rounded vowel unspecified for [ATR]
-E	front unrounded vowel unspecified for [ATR]
-A	back vowel unspecified for [round] and [ATR]
- <u>A</u>	back unrounded vowel unspecified for [ATR]
-V	copied vowel taking all the features of the stem final vowel
- ⁺ g	[+ATR] suffix spreading [+ATR] quality to the root
- ⁺ V	[+ATR] person marker vowel

Morpheme list

Title	Morpheme	Section
Copular clitics (COP)	= $\bar{A}n_{\text{appox-final}}$, = $\bar{V}n_{\text{mon.vow-final}}$ = $\bar{n}_{\text{poly.vow-final}}$, = $\bar{A}_{\text{SG,cons-final}}$ = $\bar{A}_{\text{PL,cons-final}}$	4.1.1, 7.2, 8.3.1
Definite clitics (DEF)	= $An_{\text{appox-final}}$, = $Vn_{\text{mon.vow-final}}$ = $n_{\text{poly.vow-final}}$, = $A_{\text{cons-final}}$	4.1.2, 7.3, 8.3.2
Relative clause definite clitics (RDM)	= \bar{E}_{SG} , = \bar{E}_{PL}	4.1.3, 7.4, 8.3.3, 10.9

Title	Morpheme	Section
Locative copular (LCM) /Dative clitics (DAT)	= $\tilde{A}n$ approx-final, = $\tilde{V}n$ mon.vow-final, = \bar{n} poly.vow-final, = $\tilde{A}n$ cons-final	4.1.4, 4.1.6, 7.5, 8.3.4
Accompaniment clitics (ACM)	= $n\tilde{E}$ vow-final, = \tilde{E} cons-final	4.1.8, 7.6, 8.3.6
Clause-final subordinate clitics (SBO)	= $n\tilde{E}$ vow-final, = \tilde{E} cons-final	4.1.10, 7.7, 8.3.8
Plural agreement (PL)	-gg-	5.1
First person (1)	-a-, -ə-	5.1
Second person (2)	-ɔ-, -u-	5.1
Third person (3)	-ɛ-, -i-	5.1
Object pronoun clitics (A)	a _{1sA} , = O _{2sA} , = E _{3sA} , = ì _{3sAM} , aaggá _{1pA} , = OOggÓ _{2pA} , = EEggÈ _{3pA} , = iiggð _{3pAM} .	5.4, 10.4
Dative pronoun clitics (D)	= ðn _{1sD} , = ùn _{2sD} , = ìn _{3sD} , = ðggón _{1pD} , = úggún _{2pD} , = ìggèn _{3pD}	5.5, 10.5
Prepositional prefix (PP)	ɖ-	5.7, 11.4
Noun singular suffixes (SG)	-ɖ _{son,vow-final} , -gg _{son-final} , -Aɖ _{son-final} , -AAɖ _{son-final} , -Eɖ _{son-final}	6.2.1
Noun plural suffixes (PL)	-gg _{son,vow-final} , -Agg _{obs-final} , -EEgg _{son-final} , -AAgg _{son-final} , -OOgg _{son-final} , -AAɖ _{kin-terms} , -ɖ _{kin terms} , -əgg _{body parts} , - ⁺ gg _{body parts} , -V ⁺ gg _{body parts} .	6.2.2, 6.2.3
Adjective plural suffixes (PL)	-gg _{son,vow-final}	8.2.1
Infinitive suffix (INF)	-C _{INF}	9.2
Subjunctive suffixes (SBJV)	-(A) _{default} , -C(A) _{obs-final} , -(n)(A) _{approx-final} , -ɖ(A) _{vow-final} , -ɖA _{PL}	9.3
Imperative suffixes (IMP)	-Ø _{default} , -n _{approx-final} , -ɖ ⁺ A _{PL}	9.4
Completive suffix (COMP)	-sA	9.5
Incompletive (INCP)	-Ø	9.6
Continuous suffixes (CONT)	- $\tilde{A}n$ CONT.N, - $\tilde{A}n$ CONT.P	9.7
Deictic suffixes (D)	-CÁggĀ _{COMP.D} , -(CAAg)gAn _{CONT.P.D} , -(CAg)gAn _{CONT.N.D} , -(CÁg)gĀ _{IMP.D} , -ɖúū _{IMP.PL.D}	9.9

Antipassive suffix (ANTIP)	$-An_{ANTIP}$	9.10
Causative suffixes (CAUS)	$-s^+A_{COMP}$ $-d^+A$	9.11
Agented passive clitics (PAS.A)	$=\hat{E}_{SG}, =\hat{E}\hat{E}_{PL}$	10.2
(Agentless) passive clitics (PAS)	$=\bar{A}n\hat{A}_{stem.vow-final}, =\hat{A}_{stem.cons-final}$	10.3
Imperfect clitics (IPF)	(various) $=\hat{E}_{COMP.IPF.1sN}, =\hat{E}_{COMP.IPF.3sN},$ $=\hat{A}\bar{A}_{COMP.IPF.1pN}, =\hat{E}\hat{E}(gg\hat{A})_{COMP.IPF.3pN}$	10.6
Subordinate verb-final clitics (SBO1,2,3)	(various) $=\hat{E}_{COMP.SBO1.1sN}, =\hat{i}_{COMP.SBO1.3sN},$ $=\bar{A}_{COMP.SBO1.1pN}, =\hat{u}gg\hat{i}_{COMP.SBO1.3pN}$	10.7
Perfect bound morphemes (PF)	$-CAr_{PF.INCP, PF.IMP}, =Ar_{PF.CONT.N}, =r_{PF}$	10.8
Verbal Noun clitics (VN)	$=gg_{son.vow-final}, =A_{gg}_{obs-final},$ $=EEgg_{son-final}, =AA_{gg}_{son-final}$	10.10

1 Introduction

Gaahmg (Gaam, ethnologue code [tbi]) is a Nilo-Saharan, Eastern Sudanic language spoken in the Ingessana Hills of the Blue Nile Province of North Sudan, near the Ethiopian border. For centuries, the Gaahmg people have fought off invaders entering their hills. Even today, their culture and language have been less influenced by outsiders than those of other ethnic groups in the Blue Nile Province. Although Gaahmg speakers outnumber speakers of other languages in the area, little documentation has been done of their language. This work presents a description of Gaahmg grammar, including its phonology, morphology, and syntax.

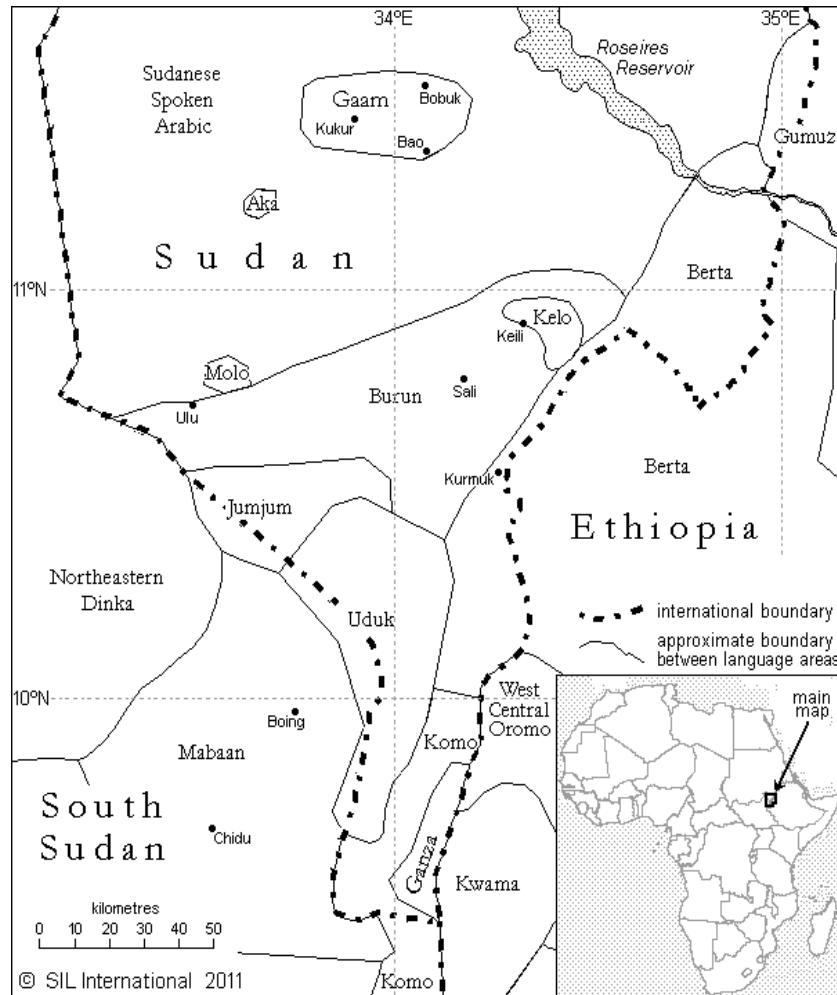
1.1 Gaahmg language

At the request of speakers, the name of the language is written orthographically with the grapheme /aah/ for the long vowel [aə]. The language name is pronounced [gə̀ə̀mg], meaning ‘people of the Gaam or Ingessana Hills’. Other names for the language include Ingessana, Gaam, and Tabi. Ingessana is a name given by Arabs. Gaam is the word for hill, and Tabi is a hill name in the home area (Bender 1980:4).

Gaahmg is classified as a Nilo-Saharan, Eastern Sudanic language. Greenberg was the first to list Tabi (Gaahmg) as a separate branch of the Eastern Sudanic sub-family (1955:62). Bender proposed that Gaam belongs to an Eastern Jebel Family including the languages Aka, Molo, Kelo, and Ben Sheko which all have a first singular pronoun with the segment *n* and other similarities. He added that the total number of speakers of Eastern Jebel languages other than Gaam speakers probably does not exceed 2,000 (Bender 1998:39).

The Ethnologue states there are 67,200 Gaahmg speakers, who mainly live in the Ingessana Hills of the Blue Nile Province (Gordon 2005), bordering Ethiopia to the east. There are four dialects: Jog Tao (Soda area), Buwag (southeast area), Kulag (Bao area), and Jog Goor (northwest area). The first two are more closely related to each other, and the last two to each other. Although the dialects are distinct enough phonetically and lexically to identify a person as from the dialect area, they are easily understood from one to another (Jedrej 1995: 32). The teachers, politicians and other educated people mostly come from the Jog Tao dialect, which is analyzed in this thesis.

There are three published linguistic works on the language that predate the research of this author: *Ethnographical Observations in Dar Fung* by E. E. Evans-Pritchard (1932), *The Phonological Features of the Ingessana Language* by W. J. Crewe (1975), and *Preliminary Gaam-English-Gaam Dictionary* by M. L. Bender & Malik Aagar Ayre (1980).



1.2 Gaahmg land, history, and people

The Ingessana Hills are southwest of Damazine and northwest of Kurmuk in the Blue Nile Province. The capital of the Ingessena area is Bao (11.350797, 34.083710) and the government offices are in Soda. There are reported to be 78 hills in the area, some rising 300 meters above the surrounding flat plains. While the plains are grassland with occasional acacia trees, the vegetation in the hills has a much greater variety of plants and trees, with water sources even in the dry season.

Gaahmg speakers live in the hills and in the plains, interacting with other ethnic groups in the surrounding geo-political area known as the Funj. In addition to the related languages of the Aka, Molo, Kelo, and Ben Sheko, there are the Berta, Gumuz, Oromo to the east, the Burun, Jumjum, Uduk, Mabaan to the south, Dinka and Nuer to the west, and Sudanese Arabs to the north.

As Jedrej (1995) explains, the Gaahmg have historically protected themselves and their hills from many invasions of outsiders. As a result, their culture is much more resistant to change than that of other ethnic groups of the Funj. Mainly self-sustaining in what they cultivate in the hill area, the Gaahmg are slow to grow cash crops or to migrate for wages. As a result of past conflict with Arabs and other invaders, they have a reputation of being hostile towards strangers and even refugees.

Although the origins of the Gaahmg are unclear, the Ingessena hills were alternately raided for several hundred years by the Funj sultans of Sennar to the northwest or by the Abyssinian kings of Gondar to the northeast, the Ingessena hills being a borderland between these kingdoms that plundered for slaves and gold. The Dinka and Nuer to the southwest raided the Gaahmg for cattle during times of drought or flooding in their own areas (Jedrej 1995).

From 1820-1855, the ruling Turk-Egyptian Empire demanded heavy tribute of slaves and gold. When they did not receive their demands, they attacked and imprisoned the Gaahmg, taking several hundred prisoners at a time. The Gaahmg fought back with speed and surprise attacks, causing many attacks of the Empire to be unsuccessful (Jedrej 1995).

In 1888-1889, the Mahdi government raided the Funj area and the Ingessena hills in particular, to provide for Khartoum during a severe and widespread famine, taking 1000 head of cattle from the Gaahmg on one occasion. The Gaahmg made counter attacks and held Arabs captive for ransom at ten head of cattle per person (Jedrej 1995).

From 1903-1934, the Anglo-Egyptian Government was less brutal but continued the same pattern of collecting tribute and squelching resistance. When the Gaahmg attacked tax patrols in protest to tribute collections, the Anglo-Egyptian government conducted 'military operations' which, although they did not involve taking slaves, seized livestock and killed those deemed responsible (Jedrej 1995).

The main occupations of the Gaahmg relate to livestock, cultivation, or craft making. In particular, the Gaahmg grow sorghum, sesame, maize, peppers, gourds, and tobacco. They keep cattle, goats, pigs, sheep, hens, donkeys, mules, and camels. During the dry season, young men and boys take herds of up to 50 head of cattle a hundred miles south to the Yabus River for water and pasture. Some weavers,

pottery, and blacksmiths peddle their products in neighboring towns. However, livestock is generally not taken outside the area for sale, but herders wait for merchants travelling into the hills for trade (Jedrej 1995).

Traditional religion and government of the Gaahmg are tied to localities. There are houses of god, or shrines, around which communities are centred. A group of elders in each community rules over and cares for the people they represent, deciding legal matters and organizing activities. An appointed elder is the custodian of the community shrine where ceremonies and celebrations take place. Each of the smaller or less important shrines is grouped under four great or important shrines, in each of the four dialect territories, which decide the annual festivals (Jedrej 1995).

1.3 The current research

The current research was conducted beginning in 2003 with speakers living in Khartoum. From April 2004-April 2008 the author continued field work in Khartoum as a language research associate of the University of Khartoum, Institute of African and Asian studies. The primary language resource persons for this period were Hashim Orta Adaw Madal, Safadin Hamid Ateeb, and Annaim Karaka Farajalla Yasin. All three are from the town of Soda, have spoken the Jog Tao dialect from childhood, and continue to speak it whenever they are with other speakers of the language. After April 2008, access to speakers was limited to two three-week trips to Kurmuk in southern Blue Nile Province, near the home area. The primary language resource person for this trip was Annaim Karaka Farajalla Yasin.

The original data set of nouns and verbs were taken from word lists entered into dictionary software by speakers of the language, which became the Gaahmg-English Dictionary (Madal 2004). The singular and plural forms of nouns and subjunctive and completive forms of verbs were written on cards and glossed in English and Arabic. The cards were sorted numerous times to isolate segments and tone in the same environments, and each time speakers read the words on the cards.

Texts were recorded on cassette, transcribed, and glossed by speakers of the language, the recordings made from a variety of individuals in the home area. Natural clauses were taken from the texts as frames for eliciting nouns and verbs with various morphemes. The cards were again used to elicit multiple nouns, verbs, and adjectives in the frames.

The data set on which the thesis is based contains 700 nouns, 150 verbs, 40 adjectives, and a handful of other parts of speech. There are 16 texts of about 30 interlinearized pages that have been collected. These consist of folk narratives, historical narratives, personal narratives, persuasive texts, and poetic genres. Ten of these texts are presented in chapter 17.

1.4 Overview and notations

Gaahmg is rich in morphology, particularly in nouns, adjectives, and verbs. To correctly analyze the morphemes and their alternations, we also discuss their phonological foundation and describe their syntactic environments.

The phonological description of chapter 2 includes distribution and contrasts of phonemes, phonological rules, syllable structure, and a tonal description of roots. Consonant weakening is common word-finally and intervocalically in roots and across morpheme boundaries. A significant number of lexical distinctions as well as distinctions in grammatical function are made exclusively by [ATR] harmony and tone. Thus, the phonological analysis of these aspects is indispensable for the morphological analysis.

Segmental and tonal morphophonological rules are presented in chapter 3. The vast majority of the alternations when morphemes combine can be attributed to processes described by these eleven rules. Clitics, having different alternations and functions than suffixes, are shown in chapter 4 to attach to more than one word category. In 4.2, there are four other criteria discussed which can be used to distinguish suffixes from clitics such as that suffixes attach to underlying forms of roots, whereas clitics attach to surface forms of stems. In 4.3, we establish adjectives as a distinct lexical category from nouns and verbs since they are not used in some of the syntactic constructions of either nouns or verbs, and there are some differences in the morphology when used as either category.

In chapters 5-13, word categories are presented. The morphology of nouns (chap. 6-7), adjectives (chap. 8), and verbs (chap. 9-10) are the heart of this thesis. Pronouns (chap. 5), prepositions (chap. 11), body part locatives (chap. 12), and adverbs (chap. 13) are the minor word categories described, which have little or no morphology.

In chapter 6, we see that nouns have singular and plural suffixes. Although the vast majority of singular nouns do not have suffixes, plural marking is obligatory with plural referents. There are several plural suffixes, each with different tonal allomorphs, although most includes the segment *gg*. Most plural suffixes have no semantic correlation with the nouns to which they attach, but the suffix attached sometimes depends on the root-final segment.

As shown in chapter 7, noun stems may attach one or more of seven clitics: copular, definite, locative copular, dative, accompaniment, subordinate, or relative clause definite clitics. The clitics have different segmental or tonal allomorphs which attach depending on the stem-final segment. In chapter 8, we show that adjectives are similar to nouns in stem and word morphology. Most adjectives attach the plural suffix *-gg* which is required on plural referents. The same seven clitics attaching to nouns may also attach to adjectives.

In chapter 9, the verb stem is discussed which is composed of the root and optional slots for antipassive, causative, and modal or aspect morphemes. Aspect is marked segmentally in the verb word—by completive and continuous suffixes. Past tense is marked by tone on the verb stem—High tone on the non-past continuous suffix and MH tone on the past continuous suffix. Infinitive, subjunctive and imperative forms also add suffixes to the root. Deictic suffixes for each verb aspect and mode are also attached to the root. Finite verb forms are inflected for subject person by tone added to the stem-final syllable: High tone in third singular verbs, Low tone in third plural verbs, and Mid tone in first and second person verbs. Chapter 10 discusses the clitics of the verb word, including agented passive, passive, object and dative bound pronouns, imperfect, perfect, subordinate, and relative clause definite marker clitics.

Clause-level syntax is presented in chapter 14 to show the functions of morphemes. Agented passive, passive, antipassive, and causative morphemes are syntactically distinguished in a section on verbal valency. Non-verbal clauses with two sets of copulas are compared. Relative clauses, noun phrase agreement, and possession are also discussed, among other grammatical aspects. Chapter 15 presents sentence-level syntax, including coordinate and subordinate conjunctions, question clauses, and subject and object focus. After some concluding remarks in chapter 16, ten texts of various genres are presented in chapter 17 to verify the morphology and syntax in the context of natural language.

All data represent both underlying and surface (phonetic) forms unless otherwise marked. Where they differ, surface forms are written between brackets [], whereas underlying forms are written between forward slashes //. Many of the clause examples are taken from the ten texts of chapter 17, which have reference codes. Throughout the thesis, examples from these texts list the reference code and line number in the free gloss from which the examples are taken. Pronouns, as in *ūgg ŋəlg* ‘your (2pPp) necks,’ have a different set of gloss abbreviations than other word categories (see the list of abbreviations and the discussion on possessive pronoun abbreviations in 5.1).

Example numbers are indicated with parentheses such as (3), whereas rules are indicated with braces such as {M3}. In 3.3, rule {M4} states that [+round] quality spreads rightward from the root to all suffix vowels not underlyingly specified for the feature [round]. However, roundness does not spread as specified in every word with every speaker, but tends to vary from word to word and from speaker to speaker. In this thesis, morphemes are transcribed as having the most possible rounding.

2 Phonology

2.1 Consonants

Gaahmg has 21 consonant phonemes as shown in table 1. There is contrastive length for fricatives, nasals, lateral, and rotic phonemes, but not for other consonant phonemes.

Table 1: Consonant Phonemes

	Labial	Dental	Alveolar	Palatal	Velar
Vl. Plosives	p	t̪	t	c	k
Vd. Plosives	b	d̪	d	ɟ	g
Fricatives	f, f:		s, s:		
Nasals	m, m:		n, n:	ɲ, ɲ:	ŋ, ŋ:
Laterals			l, l:		
Rotics			r, r:		
Approximants	w	ð ¹		y ²	

2.1.1 Consonant articulation

Gaahmg dental and alveolar plosives are contrastive. Dental plosives are made with the tongue tip touching the back of the upper teeth. The articulation of the alveolar plosive tends to vary from person to person between alveolar and retroflex. The plosive is produced with the tongue tip or the underside of the tongue tip touching the alveolar ridge or slightly behind the alveolar ridge. The phoneme [r] is a flap, but when lengthened [r:] is realized as a trill.

The phoneme /ð/ deserves special attention. It is best described as a dental approximant since the tongue does not necessarily touch the teeth, although it can protrude out of the open mouth between the teeth. The articulation is most similar to that of the IPA [ð] but has less friction.

2.1.2 Consonant contrasts

2.1.2.1 Phonetically similar contrasts

The consonants are considered to be phonemic based on the minimal and near minimal pairs of (1) in which phonetically similar consonants are contrasted. Root-final velar consonants are written in parentheses to indicate that they do not surface.

¹ The interdental fricative symbol {ð} is used to represent the dental approximant phoneme.

² The symbol {y} is used instead of the IPA symbol {j}.

(1) **Consonant contrasts**

p - b	pā́dǎ(g)	‘rope material’	báḍà	‘gourd bowl’
p - f	páré(g)	‘leather bag’	fárǎá(g)	‘bird type’
p - w	páásèè	‘basket type’	wáásāā	‘stone type’
b - m	bòḍl	‘ground crack’	mòḍl	<i>village name</i>
b - w	bāár	‘tribe member’	wáár	‘insect type’
m - w	mīīḍ	‘stone’	wīī-ḍ	‘breast’
m - n	māāng	‘disagreement’	nāāng	‘day’
f - w	fīīḍ	‘feather’	wīī-ḍ	‘breast’
ṭ - ḍ	ṭṵṵr	‘larynx’	ḍṵṵr	‘animal fence’
ṭ - t	ṭéèr	‘carving tool’	téèl	‘anchor’
ṭ - s	ṭálḵ(g)	‘tax’	sálḵ(g)	‘army ant’
ḍ - d	ḍṵṵr	‘animal fence’	dṵṵr	‘hammer’
ḍ - n	ḍórsó	‘tumor’	nōrnóó	‘saliva’
ḍ - l	ḍéèl	‘lake’	léél	‘grass (GEN.)’
ḍ - r	ḍùù-ḍ	‘year’	rùù-ḍ	‘perennial stream’
ḍ - ð	éēḍ	‘eye’	mēēð	‘tree type’
	cēḍǎḅ	‘illness type’	mēðān	‘youth leader’
t - d	téèl	‘anchor’	dèèl	‘collar bone’
t - s	téèl	‘anchor’	séèn	‘ruler’
d - n	dóólṭ	‘tree type’	nōnḍ	‘demon’
d - l	dèèl	‘collar bone’	léél	‘grass (GEN.)’
d - r	dōwə	‘bean type’	rə̀̀̀wə	‘net’
d - ð	dóḍ	‘stork’	ǰááð	‘old clothing’
s - ð	āwēēs	‘bird type’	lēēð	‘planting drill’
n - l	nōnḍ	‘demon’	lə̀nḍ	‘tree type’
n - r	nāān-ḍ	‘day’	rāāē	‘quarrel’
n - ɲ	nāān-ḍ	‘day’	ɲāāḅ	‘crocodile’
n - ŋ	nāms	‘food, eating’	ŋālg	‘neck’
l - r	ḍéèl	‘lake’	ḍēēr	‘leech’
c - ʝ	cāà	‘cooking stone’	ǰāā	‘boy, son, person’
c - y	cāā	‘bath’	yààð	‘sister’
ʝ - ɲ	ǰāā	‘boy, son, person’	ɲāā	‘girl, daughter’
ʝ - y	ǰááð	‘ragged clothes’	yààð	‘sister’
ɲ - y	ɲāāḅ	‘crocodile’	yāām	‘bride’
ɲ - ŋ	ɲááfār	‘mustache’	ŋáásāā	‘tree type’
k - g	káál	‘house fence’	gā̀̀̀l	‘falcon’
k - w	káár	‘stew’	wáár	‘insect type’
g - ŋ	gà̀̀̀rḅè	‘dung’	ŋārǎá(g)	‘leach’
g - w	gà̀̀̀	‘pumpkin type’	wāā	‘water’

2.1.2.2 Consonant length contrasts

There is little, if any, phonetically contrastive length of plosives in any environment. The same is true for the approximants /w/, /ð/ and /y/. Although plosives and approximants have little if any contrastive length, fricatives and other sonorants are contrastive for length in intervocalic position of a few nouns, such as those in (2).

(2) Intervocalic consonant length contrasts

f - ff	áfáḍ	‘blood’	cáffá(g)	‘side (of body)’
s - ss	básár	‘dried food’	bássà-ḍ	‘large intestine’
m - mm	sāmáj	‘sorghum storehouse’	ṭámmál	‘chair’
ɲ - ɲ	də̀ɲṛ-g	‘unable to speak (ADJ.PL)’	ɲēɲṛās	‘full (ADJ.PL)’
ɲ - ɲɲ	ɲíɲ-íḍ	‘louse’	ɲíɲṛ	‘lyre’
r - rr	kārāábbá	‘troublesome (ADJ)’	párrās	‘full (ADJ)’
	[kārāábá]			
l - ll	wíli(g)	‘stone name’	ṭíli(g)	‘tree, flower’

2.1.3 Consonant rules

Final consonants pose a challenge in Gaahmg. In (3), root-final consonants in three different verb forms sometimes surface in three different ways. Root-final consonants are word-final in the incompletive (INCP), intervocalic in the past continuous (CONT.P), and in a third environment in the deictic completive (COMP.D).

(3) Final consonants in various environments
(Presented in surface form)

	3sN	3sN	3sN	
	INCP	CONT.P	COMP.D	
(a)	àḵ	àw-án	àb-ágā	‘sit’
(b)	káé	káy-án	káj-ágā	‘bring’
(c)	cīi	cī-ón	cīg-ógō	‘wear’
(d)	cūḍ	cūḍ-ón	cūḍ-úgū	‘climb’
(e)	lḍf	lḍf-án	lḍf-ḍgō	‘do magic’
(f)	lās	lās-án	lās-ágā	‘roll-up’
(g)	ɲām	ɲām-án	ɲām-ágā	‘break’
(h)	gḵn	gḵn-án	gḵn-ḵgō	‘grab’
(i)	gūɲ	gūɲ-ón	gūɲ-ūgū	‘agree’
(j)	māl	māl-án	māl-ágā	‘gather’
(k)	wēr	wēr-án	wēr-ágā	‘watch’
(l)	ɲáḵ	ɲáw-án	ɲáw-ágā	‘request’
(m)	kóé	kóy-án	kóy-ógō	‘cook’
(n)	féḵ	féḵ-án	féḵ-ágā	‘release’
(o)	pāā	pā-án	pā-ḍágā	‘guard’

The root-final consonants of (3a-b) surface in three different ways, and the final consonants of (c, l, m) surface in two different ways. A root with final vowel is given for comparison in (o).

In (3a-c), the root-final consonants surface differently in the two environments of the past continuous and deictic completive. To account for these differences, we propose that the root-final consonant in the deictic completive becomes underlying geminate through suffixation. The deictic completive suffix is analyzed as *-CAggA*, where *C* is a consonant with the same features as the root-final consonant³ and *A* is a back vowel taking the [ATR] and [round] features of the root. The suffix causes the root-final consonant to be underlyingly doubled, but a degemination process causes the geminates to surface with little, if any, phonetically contrastive length. The past continuous form has the suffix *-Aɲ*, where *A* is an unrounded back vowel and takes the [ATR] value of the root. Thus, the root-final consonant weakens in the past continuous form with intervocalic environment, but not in the deictic completive form where it is underlyingly geminate through suffixation.

In (3a-c, l-m), the root-final consonants also surface differently in the word-final environment of the incompletive compared with the environment of the deictic completive. We analyze the root-final consonants in these verbs to weaken to vowels word-finally.

The verb forms of (3) are re-presented in (4) with the proposed underlying form on the left and underlying geminates represented in the deictic completives. The surface form is given in brackets to show where it differs from the underlying form.

(4) **Final consonants in various environments re-presented**

	UR	3sN	3sN	3sN		
		INCP	CONT.P	COMP.D		
(a)	/ab/ L	àḥ	àw-án	àb-bāggā	[àbāgā]	‘sit’
(b)	/kaʃ/ H	káé	káy-án	káj-ǰággā	[káǰágā]	‘bring’
(c)	/ciɡ/ M	cīi	cī-ón	cīg-góggō	[cīgógō]	‘wear’
(d)	/cuɖ/ M	cūɖ	cūɖ-ón	cūɖ-ɖúggū	[cūɖúgū]	‘climb’
(e)	/lɔf/ L	lǒf	lǒf-án	lǒf-fǒggō	[lǒfǒgō]	‘do magic’
(f)	/las/ M	lās	lās-án	lās-sággā	[lāságā]	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām-án	ɲām-mággā	[ɲāmágā]	‘break’
(h)	/gɔn/ L	gǒn	gǒn-án	gǒn-nǒggō	[gǒnǒgō]	‘grab’
(i)	/gɯɲ/ L	gǔɲ	gǔɲ-ón	gǔɲ-ɲúggū	[gǔɲúgū]	‘agree’
(j)	/mal/ M	māl	māl-án	māl-lággā	[mālágā]	‘gather’
(k)	/wer/ M	wēr	wēr-án	wēr-rággā	[wērágā]	‘watch’
(l)	/ɲaw/ H	ɲás	ɲáw-án	ɲáw-wággā	[ɲáwágā]	‘request’
(m)	/kɔy/ H	kóé	kóy-án	kóy-yóggō	[kóyógō]	‘cook’

³ However, *C* becomes *ɟ* when attached to a root-final vowel as in *pā-ɟággā* ‘guard’.

	UR	3sN	3sN	3sN		
		INCP	CONT.P	COMP.D		
(n)	/fɛð/ H	fěð	fěð-án	fěð-ðággā	[fěðággā]	‘release’
(o)	/pa/ M	pāā	pā-án	pāð-ðággā	[pāðággā]	‘guard’

The root-final plosives /b/, /ʒ/ and /g/ of (4a-c) surface in the deictic completive, but are weakened word-finally in the incomplete form, and intervocalically in the past continuous form. Similarly, the approximants /w/ and /y/ of (l-m) are weakened word-finally in the incomplete form. The bilabial and palatal plosives of (a-b) weaken to corresponding approximants intervocalically (/b/ becomes [w] in *áw-án*, /ʒ/ becomes [y] in *káy-án*). Thus we have the rule of {P1a}, where P represents a phonological rule. The plosives /b/, /ʒ/ of (a-b) and approximants /w/ and /y/ of (l-m) weaken to corresponding vowels word-finally (/b/, /w/ become [ɔ] or [u], and /ʒ/, /y/ become [ɛ] or [i], depending on the [ATR] quality of the preceding vowel). Thus we have the rule of {P1b}. The dental plosive /d/ of (d) does not weaken intervocalically or word-finally, and the alveolar plosive /d/ is not attested root-finally in verbs.

{P1} Bilabial and palatal weakening

- (a) /b/, /ʒ/ are weakened intervocalically to approximants.
- (b) /b/, /ʒ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel.
- (c) /w/, /y/ before word-final sonorants are weakened to vowels with the same [ATR] quality as the preceding vowel.

As will be evident from the distribution of word-final consonant clusters in 2.1.4.2, all word-final consonant sequences are sonorant-obstruent in surface form. Therefore, as stated in {P1c}, /w/, /y/ are weakened before word-final sonorants. In this way, word-final sonorant-sonorant consonant sequences are avoided. For example, the *ɔ* of *càðr* ‘rabbit’ and the *ɛ* of *gðēn* ‘metal worker’ could underlyingly be *w* and *y* respectively, but are weakened to vowels in the surface form.

The velar plosive /g/ of (4c) is weakened to elision as stated in {P2}.

{P2} Velar plosive elision

- /g/ is elided both inter-vocalically and word-finally when following a vowel.

Since all word-final consonant sequences are sonorant-obstruent in surface form as will be discussed in 2.1.4.2, the contrast between plosives and approximants is neutralized in the first of the two consonant positions. Therefore, there is also the rule of {P3}.

{P3} Plosive weakening

Plosives are weakened to approximants when they immediately precede word-final obstruents and follow vowels.

For example, the *w* in *dāwɔ* ‘fertile soil’ and *y* in *kāyɔ* ‘cup, spoon’ could underlyingly be *b* and *ɟ* respectively, but weaken to sonorants in the surface form. Rules {P1-P3} apply throughout the language in roots and when bound morphemes are attached.

2.1.3.1 Underlying and surface representations of plosives

In this section, we discuss the neutralization of plosives in various environments. The chart of (5) summarizes the plosive changes mentioned in this section, which are illustrated with examples in the following sections. The environments are as follows: word-initial B, intervocalic V, either consonant in a consonant sequence - C₁C₂-, word-final before an obstruent $\underline{C}C_{[-son]}^{\#}$, word-final E. A dash indicates the underlying phoneme has not been attested to surface in the environment. An empty slot indicates the phoneme cannot be confirmed to surface in the environment.

(5) Plosive realizations in various environments

UR	B	V	-C ₁ C ₂ -	$\underline{C}C_{[-son]}^{\#}$	E	
p	→	p				
t̥	→	t̥				
t	→	t				
c	→	c				
k	→	k				
b	→	b	w	-	w	ɔ, u
ɖ	→	ɖ	ɖ	ɖ	ð	ɖ
d	→	d	d	d	-	d
ɟ	→	ɟ	y	ɟ	y	ɛ, i
g	→	g	Ø	g	-	Ø
b:	→		b			b ^ʰ
ɖ:	→		ɖ			ɖ ^ʰ
d:	→		d			-
ɟ:	→		ɟ			ɟ ^ʰ
g:	→		g			g ^ʰ

Voiced and voiceless plosives

Voiced and voiceless plosives surface word-initially. Voiceless plosives do not surface in any other environment. There is neutralization between voiced and voiceless plosives in consonant sequences, as plosives are always voiced in this environment—either in word-medial or word-final consonant sequences.

Voiced plosives and approximants

As the bilabial and palatal weakening rule of {P1} indicates, there is neutralization between the plosives /b/, /ʒ/ and approximants /w/, /y/ intervocalically {P1a}. There is neutralization between the plosives /b/, /ʒ/ and vowels /ɔ, u/, /ε, i/ word-finally {P1b}. The velar plosive /g/ is elided intervocalically and word-finally {P2}, but otherwise surfaces. As the plosive weakening rule of {P3} indicates, there is neutralization between plosives and corresponding approximants for the first consonant of a word-final consonant sequence. The dental and alveolar plosives /d̪/, /d/ surface the same as their underlying forms in all other environments.

Geminate plosives /b:/, /ʒ:/, and /g:/

There is no phonetic contrast of length for any plosive in any environment. As will be discussed in section 2.1.3.2, the underlying geminate plosives /b:/, /ʒ:/, and /g:/ are realized as single, devoiced unreleased plosives word-finally, and are realized with little or no lengthening intervocalically. Since the non-geminate plosives /b/, /ʒ/, and /g/ surface as weakened in the same environments that their geminate equivalents surface as single plosives, they are never in contrast.

Geminate plosives /d̪:/ and /d:/

The plosives /d̪/ and /d/ are not weakened intervocalically or word-finally, but also never surface with contrastive length. Intervocalically, the underlying geminate equivalents /d̪:/ and /d:/ surface with little or no length. Word finally, the dental geminate /d̪:/ surfaces the same as for the other geminate plosives—as a single devoiced unreleased plosive, but is released elsewhere. The alveolar geminate plosive /d:/ is not attested word-finally.

Voiceless plosives and voiced geminate plosives

Voiceless plosives are not attested anywhere except word-initially and are in complementary distribution with voiced geminate plosives which cannot be confirmed word-initially. Thus, voiceless plosives could possibly be analyzed as underlying geminate plosives in word-initial position. In this analysis, there would be no underlying voicing contrast in plosives, but only a length contrast⁴.

In this thesis, word-initial plosives are written as voiceless plosives since they surface as such. Underlying geminate plosives in word-final and intervocalic

⁴ Or, since consonant clusters are not attested word-initially, an alternative analysis would be that geminate plosives are fortis ('strong') consonants and non-geminate plosives are lenis ('weak') consonants.

position are written as voiced geminate plosives, and the reader should assume that all such voiced geminate plosives surface with little or no contrastive length.

2.1.3.2 Plosive distribution

Voiceless plosives surface at the beginnings of words, but not in other environments.

(6) Voiceless plosive distribution

	Beginning	
p	púr	‘flower’
t̥	t̥ēē-d̥	‘road, path’
t	tēēnd̥	‘riddle’
c	cééṣ̄	‘lame person’
k	kābbàr [kābàr]	‘wing, armpit’

Voiced plosives surface at the beginnings of words and in consonant sequences. The phonemes /j/ and /g/ occur as the first or second segment of consonant sequences, /d̥/ and /d/ only occur as the second segment of sequences, and /b/ is not attested in any consonant sequence.

(7) Voiced plosive distribution

	Beginning		Consonant sequence	
b	bààḍ	‘father’	----	
d̥	d̥ì	‘rat’	móf̥d̥ēē	‘snake type’
d	d̥ṣ̄óláfàà	‘wolf’	kág̥dàr	‘food type’
ʃ	ʃìd̥	‘husband’	bàʃwáár	‘bird type’
			d̥ṣ̄gg̥d̥l̥jā [d̥ṣ̄gg̥d̥l̥jā]	‘ankle’
g	gè̄mūūr	‘dove’	bāgg̥d̥àrs	‘lizard type’
			ʃórgāāl	‘bird type’

When the plosives [b], [ʃ] and [g] surface in intervocalic and word-final position, they are underlyingly geminate even though they surface with little or no contrastive length. If they were not geminate, they would be weakened to approximants and vowels in these environments. They are realized as single, devoiced unreleased plosives word-finally, and are realized with little or no length intervocalically.

(8) Geminate voiced plosive distribution

	Intervocalic		Final	
bb	lābbù(g) [lābù]	‘navel’	ʃílàbb [ʃílàb̥]	‘water spring’
ʃʃ	cíʃí [cíʃí]	‘diarrhea’	bìmiríʃʃ [bìmiríʃ̥]	‘bird type’
gg	dāggár [dāgár]	‘tortoise’	gàágg [gàág̥]	‘bird type’
d̥	fáád̥àr	‘nostril’	d̥d̥ìd̥ [d̥d̥ìd̥]	‘scorpion’

	Intervocalic		Final	
d	cēdáj ⁵	‘illness type’	dʒd [dʒdʰ]	‘bird type’

The voiced plosives /d/ and /d/ never surface with contrastive length and are not weakened intervocalically or word-finally. Therefore there is no evidence for the voiced plosives /d/ and /d/ to be geminate underlyingly, except for the dental plosive in root-final position of certain verb forms through morphology. As seen in the verb *cūd-dúggū* [cūdúggū] ‘climb-COMP.D’ of (4), the geminate plosive *d*: surfaces in verb forms with little or no contrastive length.

For the remaining data of this thesis, underlying geminate plosives are written without a phonetic realization, but can be assumed to surface with little or no contrastive length.

2.1.3.3 Underlying and surface representations of other consonants

Fricatives and sonorants surface word-initially, intervocalically, word-finally, and in consonant sequences, with the exception of the dental approximant /ð/, which does not surface word-initially, and the approximants /w/ and /y/ which do not surface word-finally. As the rule of {P1c} indicates, the contrast between the approximants /w/, /y/ and vowels /ɔ, u/, /ε, i/ is neutralized before a word-final sonorant. This is because only sonorant-obstruent consonant sequences are allowed to surface word-finally, as will be discussed in section 2.1.4.2. As was shown in section 2.1.2.2, length is contrastive for fricatives, nasals, lateral, and rotic phonemes intervocalically in a handful of nouns. These surface forms are summarized in the chart of (9) and examples are given in the following section.

(9) Fricative and sonorant realizations in various environments

UR		B	V	-C ₁ C ₂ -	<u>CC</u> _[-son] #	<u>CC</u> _[+son] #	E
f	→	f	f	f	-		f
s	→	s	s	s	-		s
m	→	m	m	m	m		m
n	→	n	n	n	n		n
ɲ	→	ɲ	ɲ	ɲ	ɲ		ɲ
l	→	l	l	l	l		l
r	→	r	r	r	r		r
w	→	w	w	w	w	ɔ, u	ɔ, u
ð	→	-	ð	ð	ð		ð
y	→	y	y	y	y	ε, i	ε, i

⁵ Or *cēdáj*

UR		B	V	-C ₁ C ₂ -	<u>CC</u> _[-son] #	<u>CC</u> _[+son] #	E
f:	→		f:				
s:	→		s:				
m:	→		m:				
n:	→		n:				
ɲ:	→		ɲ:				
l:	→		l:				
r:	→		r:				

2.1.3.4 Fricative and sonorant distribution

Fricatives and sonorants are attested in five word positions with few exceptions: /y/ and /ð/ are not attested as the second of a consonant sequence, /ð/ is not attested at the beginnings of words, and /y/ and /w/ do not surface word-finally. The sonorants *w* and *y* in *lɛwɔ́á* ‘animal (gen.)’ and *kàymà* ‘lucky stone’ can also be interpreted as the vowels *ɔ* and *ɛ*. In section 2.3.5, it is discussed how there is no strong evidence for these phonemes being analyzed as vowels or glides in this environment.

(10) Fricative and sonorant distribution

f	B	fɛgg	‘water’	s	B	sīnd	‘guest’
	C ₁	mɔ́fɔ́ɛɛ	‘snake type’		C ₁	rɔ́slūúmàà	‘praying mantis’
	C ₂	sáárfāā	‘rat’		C ₂	dérsá	‘sweat’
	V	áfáɔ́	‘blood’		V	kásá	‘boy’
	E	gáf	‘give INCP’		E	kás	‘chair’
m	B	málò	‘beeswax’	n	B	nōrnóó	‘saliva’
	C ₁	sīmɔ́gg	‘salve (N.PL)’		C ₁	ònsò	‘plate’
	C ₂	gèrmù-ɔ́	‘insect type’		C ₂	nōrnóó	‘saliva’
	V	lāmāɲ	‘knot’		V	gèbbòníɔ́	‘tribal name’
	E	áám	‘bone’		E	séèn	‘ruler’
ɲ	B	ɲāàɲ	‘crocodile’	ɲ	B	ɲárèmàà	‘spirit type’
	C ₁	tùggùùɲfāà	‘tree type’		C ₁	bòðɲmà	‘insect type’
	C ₂	bèɲáó	‘tomato’		C ₂	tɔ́lɲó(g)	‘seed, chain’
	V	kāɲāàɔ́	‘bowl’		V	áɲé(g)	‘elephant’
	E	lúɲ	‘boomerang’		E	ɔ́àɲ	‘courtyard’
r	B	ràðwə	‘net’	l	B	lɔ́fò	‘magic’
	C ₁	èɲə-ɔ́	‘insect type’		C ₁	wîlmāā	‘ant type’
	C ₂	tɛgrɛ́lfāà	‘bird type’		C ₂	kúúrlúúgg	‘rodent’
	V	kūūrī	‘circle’		V	búlíɲ	‘worm’
	E	ɔ́áár	‘throne’		E	bāàl	‘instrument’

Fricative and sonorant distribution (continued)

w	B	wéé(s)	‘house’	y	B	yāàm	‘bride’
	C ₁	lēwḍá	‘animal’		C ₁	kàymà	‘lucky stone’
	C ₂	bàɰwáár	‘bird type’		C ₂	-----	
	V	rèèwè	‘net’		V	íyóó	‘oil, fat’
	E	-----			E	-----	
ð	B	-----					
	C ₁	gǎèðg ⁶	‘thief’				
	C ₂	-----					
	V	áðá	‘dog’				
	E	ṭààð	‘door’				

2.1.4 Consonant distribution in consonant sequences

2.1.4.1 Consonant sequences across syllable boundaries

There are few restrictions on non-geminate consonant sequences across syllable boundaries (-C₁.C₂-). The coda of a previous syllable (C₁) may be an obstruent or sonorant, nasal or oral, voiced or voiceless. The same is true of the onset of the following syllable (C₂). Additionally, consonants may be both obstruent or both sonorant, both nasal or both oral, and both may be voiced. Further, the consonants may have opposite corresponding values (C₁ = obstruent, C₂ = sonorant; C₁ = nasal, C₂ = oral; C₁ = voiceless, C₂ = voiced; opposite orders of each values as well). However, only fricatives can be voiceless in consonant sequences, and there are no attested voiceless-voiceless sequences except in compound words such as *fě́ɛ́ɪ-íā* ‘person name (person.name-place)’.

All attested consonant sequences across syllable boundaries are listed in (11), which is divided into sequences with and without nasal consonants. The sonorants *w* and *y* in *kāwḍá* ‘ear wax’ and *kàymà* ‘lucky stone’ can also be interpreted as the vowels *ɔ* and *ɛ*.

(11) Sequences with nasal consonants

nḍ	tēḍás	‘bird type’	ɲḍ	sáràḅḍā	‘tree type’
nd	kándāl	‘tree type’	ɲɰ	ɰɲɰl	‘bird name’
ns	ṭĩns-ǎgg	‘asking’	ɲf	tùggùɲfàà	‘tree type’
nf	ráánfāà	‘covering (n)’	ɲm	bððɲmà	‘insect type’
ms	ámsá-ḍ	‘dryness’	lm	kóðlmàà	‘tree type’
rn	ɲārná(g)	‘leach’	lɲ	bðlɲè(g)	‘medical tool’
rm	gǎrmū-ḍ	‘tree type’	rɲ	kǎrɲǎl	‘grass type’
ɲɲ	gàɲɲè	‘dung’	ym	kàymà	‘lucky stone’

⁶ With some speakers, the underlying approximant /ð/ of *gǎèðg* ‘thief’ only surfaces in the plural form *gǎèðǎgg*; with other speakers, it also surfaces in the singular form.

Other sequences

sl	rōslūúmàà	‘preying mantis’	lɔ̄	cēlɔ̄á	‘charcoal’
fɔ̄	mófɔ̄ēē	‘snake type’	lɔ̄	bámàlɔ̄ā	‘morning star’
rɔ̄	órɔ̄àà	‘army’	lg	ɔ̄lɔ̄gō	‘drum’
rs	ɔ̄rsó	‘tumor’	lf	kólɔ̄fō	‘jaw’
rl	kúūrlúúgg	‘rodent’	rɔ̄	kóūrɔ̄ō	‘tree type’
jw	bàjwáár	‘bird type’	rg	úrɔ̄gò(g)	‘nature’
gd	bāgdàrs	‘lizard type’	rf	sáárɔ̄ā	‘rat’
gd	kágdàr	‘food type’	wɔ̄	kāwɔ̄á	‘ear wax’
gr	tēgrēlɔ̄ā	‘bird type’	yɔ̄	tāyɔ̄á(g)	‘strainer’

2.1.4.2 Consonant sequences word-finally

In word-final non-geminate consonant clusters ($C_1C_2\#$), C_1 is always sonorant and C_2 is always obstruent. Only the obstruents $ɔ̄$, $ʃ$, g , and s are attested in the C_2 position. There is partial word-final nasal assimilation in that only homorganic nasals surface before the obstruents $ʃ$ and g . However, heterorganic nasals surface before the obstruents $ɔ̄$ and s .

(12) Sequences with nasal consonants	Other sequences
ms nāms ‘food, eating’	rɔ̄ bə̀rɔ̄ ‘lion’
nɔ̄ fānɔ̄ ‘cheek’	rs jè̀ers ‘hippopotamus’
ng úng ⁷ [úŋg] ‘tear’	lɔ̄ lólɔ̄ ‘facial blemish’
ns wílə̀ns ‘hunting’	lɔ̄ fālɔ̄ ‘tree type’
nɔ̄ rɔ̄nɔ̄ ‘mud’	ðg gə̀ə̀ðg [gə̀ə̀g, ʔ] ‘thief’
nɔ̄ bə̀nɔ̄ ‘upper hip’	wɔ̄ ɔ̄āwɔ̄ ‘fertile soil’
nɔ̄ lə̀nɔ̄ ‘tree type’	yɔ̄ káyɔ̄ ‘cup, spoon’

The sonorants w and y in $ɔ̄āwɔ̄$ ‘fertile soil’ and $káyɔ̄$ ‘cup, spoon’ can also be interpreted as the vowels $ɔ$ and $ɛ$. In section 2.3.5, it is discussed how there is no strong evidence for these phonemes being analyzed as vowels or glides in this environment.

Since no sonorant-sonorant consonant sequences are attested word-finally in (12), we assume that these sequences are not allowed. The bilabial and palatal weakening rule of {P1c} in 2.1.3 is based on this constraint. Since no word-final sonorant-sonorant consonant sequences are allowed, /w/ and /y/ before word-final sonorants must be weakened to vowels with the same [ATR] quality as the preceding vowel. The $ɔ$ of $cà̀ɔ̀r$ ‘rabbit’ and the $ɛ$ of $gə̀ɔ̀n$ ‘metal worker’ could underlyingly be w and y respectively, but weaken to vowels in the surface form.

⁷The underlying nasal n of $úng$ ‘tear’ surfaces as $ŋ$ in the singular form $úŋg$ but surfaces as n in the plural form $únígg$.

The plosive weakening rule of {P3} in 2.1.3 is based on the same constraint. Since no word-final sonorant-sonorant consonant sequences are allowed, plosives must be weakened to approximants when they immediately precede root-final obstruents and follow vowels. The *w* in *dāwḏ* ‘fertile soil’ and *y* in *kāyḏ* ‘cup, spoon’ could underlyingly be *b* and *ʃ* respectively, but weaken to sonorants in the surface form.

2.2 Vowels

Gaahmg has six vowel phonemes as shown in table 2. The vowel /ə/ [ɐ] is phonetically low, made in the same place in the mouth as [a], but with advanced tongue root. The phonemes /ε/ and /ɔ/ vary somewhat in phonetic value, becoming closer to the values [e] and [o] respectively in long vowels. To a lesser extent, the phonemes /i/ and /u/ also vary in phonetic value, realized closer to [i] and [u] respectively in short vowels. Vowel length is common and can be analyzed as a vowel sequence in the same syllable or as a lengthened version of a short vowel.

Table 2: Vowel Phonemes

	[-round]		[+round]
	[-back]	[+back]	
[+ATR]	i	ə	u
[-ATR]	ε	a	ɔ

The two [ATR] sets of phonemes determine the vowel harmony in the language. Only vowels with the same [ATR] value occur together in the same root. Across morpheme boundaries in the same word, [+ATR] quality spreads to all vowels unspecified for [ATR], either from root to bound morpheme or from bound morpheme to root, whereas [-ATR] quality never spreads. In 3.2, [ATR] quality across morpheme boundaries is further discussed.

2.2.1 Vowel contrasts

2.2.1.1 Phonetically similar contrasts

The six vowels are considered to be phonemic based on the minimal and near minimal pairs of (13). The following symbols refer to the specified positions taken by vowels: B is word-initial, M is word-medial, and E is word-final.

(13) **Vowel contrasts**

i - ε	B	īigg	‘milk’	ēēḏ	‘eye’
	M	cíl	‘spine’	cél	‘dream’
	E	mīī	‘goat’	ḡēē	‘drawing, colour’

Vowel contrasts (continued)

ε - a	B	ēɛɲ	‘back’	áám	‘bone’
	M	ɖɛ̄ɛr	‘leach’	ɖáár	‘throne’
	E	ɲēē	‘drawing, colour’	ɲāā	‘girl, daughter’
a - ɔ	B	áál	‘calf fence/pen’	óól	‘head’
	M	ɖáár	‘throne’	ɖóór	‘animal fence’
	E	máà	‘house’	móó	‘gunfire’
ɔ - u	B	óól	‘head’	úū-ɖ	‘wasp’
	M	kóól	‘snake type’	kùùl	‘Kulag clan member’
	E	móó	‘gunfire’	mūū	‘forehead, face’
ə - i	B	əyúú	‘local tooth brush’	íyóó	‘oil, fat’
	M	gə̀ə̀l	‘shield’	ɟííl	‘cricket’
	E	wə̀ə̀	‘shade, help’	mīī	‘goat’
ə - ε	B	ə̀ə̀ð	‘tree type’	ēēð	‘water-carrying net’
	M	ɖə̀ə̀r	‘snake type’	ɖɛ̄ɛr	‘leach’
	E	wə̀ə̀	‘shade, help’	rēē	‘cotton, thread’
ə - a	B	ə̀ə̀l	‘hyena’	áál	‘calf fence/pen’
	M	ɖə̀ə̀r	‘snake type’	ɖààr	‘eagle’
	E	wə̀ə̀	‘shade, help’	wāā	‘pond’
ə - ɔ	B	ə̀ə̀l	‘hyena’	óól	‘head’
	M	ɖə̀ə̀r	‘snake type’	ɖóór	‘animal fence’
	E	wə̀ə̀	‘shade, help’	móó	‘gunfire’
ə - u	B	ə̀ə̀ð	‘tree type’	úū-ɖ	‘wasp’
	M	ɲə̀ə̀m	‘chin’	múùm	<i>village name</i>
	E	wə̀ə̀	‘shade, help’	mūū	‘forehead, face’

2.2.1.2 Vowel length contrasts

Short and long vowels occur contrastively in word-initial, word-medial, and word-final positions. However, the short vowel *ε* is only attested in word-initial position in pronouns such as *ēggà* ‘they (3pN)’ and *ēgg* ‘their (3pPs, 3pPp)’.

(14) **Vowel length contrasts**

i - ii	B	îļ	‘beeswax’	īigg	‘milk’
	M	cīl	‘instrument’	ɟīil	‘tree type’
	E	kūūrī	‘circle’	cùùrì	‘sheave’
ε - εε	M	sèn	‘skin illness’	séèn	‘ruler’
	E	móósē	<i>village name</i>	māāsēē	‘root type’
ə - əə	B	ámīī	‘ant type’	ə̀ə̀mōō	‘liver’
	M	sə̀m	‘medicine’	sóóm	‘hunter’
	E	kúsó	‘grass type’	būūsə̀ə̀	‘stone name’

Vowel length contrasts (continued)

a - aa	B	āṙāā-ḍ	‘lake’	āârēē	‘grass type’
	M	sāṓ	‘shoe’	sááḍ	‘grass-cutter’
	E	cēlḍá	‘charcoal’	āḍḍáá	‘earth, dust’
u - uu	B	úḷḍ	‘grinding stone’	úū-ḍ	‘wasp’
	M	lún	‘boomerang’	lúún	‘water pot’
	E	gōyù	‘grass type’	ōyúú	‘local tooth brush’
o - oo	B	ōṙ	‘meat’	óól	‘head’
	M	kōr	‘word, speech’	kóól	‘snake name’
	E	máḷb	‘beeswax’	mélṓṓ	‘sugar cane’

2.2.2 Vowel distribution

2.2.2.1 Distribution in word positions

As shown by the contrasts in (14), six short and six long vowels are attested in word-initial, word-medial, and word-final position. In monosyllabic nouns, phonetically short vowels are not common word-medially; only four are attested word-initially—*il* ‘horn’, *úḷḍ* ‘grinding stone’, *ōṙ* ‘meat’, *āḷḍ* ‘fox’, and *ōḍ* ‘wife’; and do not surface word-finally. However, phonetically long vowels are common in monosyllabic nouns: they are most frequent word-medially, then word-finally, and a few occur word-initially. Although vowel length is phonemic, there is neutralization of vowel length word-finally in monosyllabic nouns and verbs. As will be discussed in 2.3.3, vowels are only realized as long in that position. In polysyllabic nouns, short vowels are common in all three word positions, and long vowels are rare word-initially and word-finally.

2.2.2.2 Distribution in noun roots

The distribution of vowels in disyllabic noun roots is given in (15). The [-ATR] vowels (*e*, *o*, and *a*) and the [+ATR] vowels (*i*, *u*, and *ə*) function as distinct sets in roots; the vowels of the [-ATR] set never occur with vowels of the [+ATR] set in the same root.⁸ Within each set, all possible vowel combinations are attested in roots except *i-u*. The word *ḷìgg-úúḷ* ‘afternoon’ is a compound and literally means ‘evening-up’.

⁸ The following nouns are believed to be compounds because of mixed sets of [ATR] vowels: *fùùlmāā* ‘insect type always in houses (*māā* ‘house’)', *gāālmōsí* ‘tree type (lit. eagle’s claws)’, *wílmāā* ‘ant type (*māā* ‘mother’)', *tùggùùṙfāā* ‘tree type (*fāā* ‘release’)', *rēsḷūúmāā* ‘bird type (lit. apostle of house)’, *tírímāā* ‘bird type (*tírí(g)* ‘tree type’)', *túúḷfāā* ‘grass type (*fāā* ‘release’)', *tāāsāmī* ‘sorghum type (*tāāsā* ‘ducked’, *mī* ‘chicken’)', *nāāḍi* ‘those (*ḍi* ‘also’)’.

(15) **Vowel distribution in disyllabic nouns roots**

[-ATR]			[+ATR]		
ε - ε	wèlɛɲ	‘sour taste’	i - i	fɪɖɪn	‘perfume’
ε - a	cēdán	‘illness type’	i - ə	ʃɪləbb	‘water spring’
ε - ɔ	mélɔɔ	‘sugar cane’	i - u	ʃùgg-úúl	‘afternoon’
a - ε	kààɖɛɪ	‘bull’	ə - i	məɲɪl	‘rainbow, spirit’
a - a	ʃálàm	‘malnutrition’	ə - ə	gəməl	‘forest’
a - ɔ	páɲɔɔ	‘star’	ə - u	gəmūùr	‘dove’
ɔ - ε	bórɛ-ɖ	‘eye matter’	u - i	búlɪɲ	‘worm’
ɔ - a	mðrāā	‘governor’	u - ə	būūsəð	‘stone type’
ɔ - ɔ	fəɖər	‘nose’	u - u	būɲúr	‘youth’

2.2.2.3 Distribution in vowel sequences

Vowel sequences may occur in the same syllable (CV₁V₂, CV₁V₂C, or CV₁V₂CC). Only vowels of the same [ATR] set are paired in sequences, as shown in the list of (16). All possible vowel sequences are attesting in roots except *ea*.

(16) **Vowel sequences**

[-ATR]		[+ATR]	
ea	--	iə	ɖíərmə ‘centipede’
ɛə	ɖɛ́sɪ ⁹	iu	ɖíū-sū ¹⁰ ‘planted (v)’
aɛ	bàèl	əi	ʃə̀ɪl ‘tree type’
aɔ	càðr	əu	gə̀ulɖə̀ð ‘fish’
ɔɛ	gə̀ðɛn	ui	bùil ‘moisture’
ɔa	gə̀à-ɖ	uə	būə ‘tree type’

Vowel sequences may not exceed two vowels, and long vowels do not occur in underlying vowel sequences. However, long vowels do occur in surface form vowel sequences such as in *ɲūūi* ‘leopard’, where the underlying final-approximant *y* surfaces as a vowel, in accordance with {P1b} in 2.1.3.

2.3 Syllable structure

2.3.1 Syllable types

The syllable structure may be represented as (C)N(C)(C), where the vowel nucleus

⁹ In *ɖɛ́sɪ*, *bàèl* and other examples of (16), the vowels *ɔ*, *ε*, and *i* in V₂ position could be analyzed as the glides *w* or *y* if it were not for the fact that sonorant-sonorant sequences are not allowed in word-final consonant clusters.

¹⁰ The root verb is */ɖíw/* ‘plant’, but in the completive *ɖíū-sū*, *w* becomes *u*, evidenced by the fact that the [+round] quality of *u* is spread to the suffix vowel, which would otherwise be *ə*.

N is the only obligatory constituent of the syllable. The CC codas are only found word-finally and onset-less syllables only word-initially. The nucleus N may be short, long, or a vowel sequence, where long vowels can be analysed as vowel sequences of two short vowels or as lengthened versions of short vowels. The most common syllable types are CN and CNC. The syllable type CNCC commonly occurs in monosyllabic words and word-finally in disyllabic words. Less common syllable types, which only occur word-initially, are N and NC. The syllable type NCC only occurs in monosyllabic words.

In the list of syllable types in table 3, all words are monomorphemic except those with hyphens. The syllable type NCC is not attested with a long vowel except across morpheme boundaries as in *éél-g* ‘stomach’, and the syllable type CNCC is not attested with a vowel sequence except across morpheme boundaries as in *gə̀ür-d* ‘stomach’.

Table 3: Syllable types (N = syllable nucleus)

	Short		Long		Vowel Sequence	
N	ú	‘you 2sN’	ùù	‘air’	ā̄ ¹¹	‘tree type’
NC	îl	‘horn’	áám	‘bone’	à̀l ¹²	‘brother’
NCC	ā̀d	‘fox’	éél-g	‘stomach’	á̀f̄d	‘cold’
CN	wā	‘no’	wāā	‘pond’	bū̀ə̀	‘tree type’
CNC	f̄l	‘hole’	d̄ēēr	‘leach’	bà̀èl	‘perfume’
CNCC	cú̀d	‘birth sack’	j̄è̀ers	‘hippo’	gə̀ür-d	‘stomach’

As will be seen in 2.4.3, tone assignment in some disyllabic nouns depends on syllable weight. For this reason, each syllable type is classified according to one of three different weights: light, mid or heavy.

Table 4: Syllable weight of syllable types

Light	Mid	Heavy
V	VC	VVC
CV	VCC	VVCC
	CVC	CVVC
	CVCC	CVVCC
	VV	
	CVV	

¹¹ As discussed in 2.3.6, the word-final vowel *ɔ* in *ā̄ɔ* ‘tree type’ *ɔ* could be interpreted as the glide *w* if it were not for the fact that the definite clitic =*n* for stem-final vowels attaches to this noun (*ā̄ɔ*=*n*) instead of the definite clitic for stem-final consonants =*Á*.

¹² In *à̀d*, *bà̀èl*, the vowels *ɔ*, *ɛ* could be analyzed as the glides *w* or *y* if it were not for the fact that sonorant-sonorant sequences are not allowed in word-final consonant clusters.

Open syllables with short vowels (V and CV) have light weight, closed syllables with short vowels (VC, VCC, CVC, CVCC) and open syllables with long vowels or vowel sequences (VV and CVV) have mid weight, and closed syllables with long vowels or vowel sequences (VVC, VVCC, CVVC, CVVCC) have heavy weight. Although tone assignment in some nouns depends on syllable weight, there are no meaningful restrictions on distribution of syllables in words based on syllable weight.

2.3.2 Syllable structure of polysyllabic words

There are 12 disyllabic syllable structures as shown in (17), including light-light, light-mid, light-heavy, mid-light, mid-mid, and mid-heavy syllable structures. There are no heavy syllables in word-initial position. Consonant clusters do not exceed 2 consonants—either word finally (*-CCC#) or across syllable boundaries (*-CC.C-).

(17) Disyllabic short vowel syllable structures

light-light	V.CV	ũfũ	‘tree type’
light-mid	V.CVC	ásàr	‘army’
light-heavy	V.CVCC	órónḁ	‘fermented milk’
mid-light	VC.CV	ḁnsò	‘cooking plate’
mid-mid	VC.CVC	ámsáḁ	‘dryness’
mid-heavy	VC.CVCC	ḁḁḁars	‘insect type’
light-light	CV.CV	kúsá	‘grass type’
light-mid	CV.CVC	ḁálám	‘malnutrition’
light-heavy	CV.CVCC	ḁḁfũrḁ	‘dust’
mid-light	CVC.CV	cēlḁá	‘charcoal’
mid-mid	CVC.CVC	káḁḁàr	‘food type’
mid-heavy	CVC.CVCC	bāḁḁàrs	‘lizard’

Long vowels are common in both first and second syllables of disyllabic words as seen from (18).

(18) Disyllabic long vowel syllable structures

VV.CV	ààsà	‘basket type’
V.CVV	íyáó	‘oil, fat’
VV.CVV	áàrēē	‘grass type’
VV.CVC	ēōmōḁ	‘yawning’
V.CVVC	āwēēs	‘bird type’
VVC.CV	āāmsá	‘dry, tired (ADJ)’
VC.CVV	àlḁáá	‘earth, dust’
VC.CVVC	ḁḁḁóàr	‘tree type’
CVV.CV	ḁééḁá	‘leaf, liver sickness’

Disyllabic long vowel syllable structures

CV.CVV	gə̀mà̀̀	‘ant type’
CVV.CVV	mā̀sḕē	‘root type’
CVV.CVC	pé̀érà̀m	‘flag’
CV.CVVC	má̀rṑs	‘spider’
CVV.CVVC	ṭī̀fó̀ṅ	‘bird type’
CVV.CVCC	bā̀ālà̀nd	‘stripe’
CV.CVVCC	bú̀lū̀rs	‘bird type’
CVVC.CV	bò̀ḡmà̀	‘insect type’
CVC.CVV	mó̀fḡḕē	‘snake type’
CVVC.CVV	ṣī̀lḡà̀̀	‘tree type’
CVC.CVVC	ṣó̀rgā̀al	‘bird type’

Vowel sequences may not exceed two vowels, and long vowels do not occur in underlying vowel sequences. Vowel sequences are rare in polysyllabic lexemes. The only three attested are listed in (19). In all of these, they occur in an initial CVVC syllable type.

(19) Polysyllabic vowel sequence structures

CVVC.CVV	gṑũlḡà̀̀	‘fish’
CVVC.CV	ḡī̀órmà̀	‘centipede’
	kó̀ùrṣò̀	‘tree type’

Three-syllable words are not common—about 5% of monomorphemic nouns. Only the syllable types CN, CNC, and occasionally N occur in three-syllable words. The syllable types CN and CNC may occur in any position of the word.

(20) Three-syllable short vowel syllable structures

CV.CV.CV	ṭásámé(g)	‘grass’
CV.CV.CVC	kà̀ḡà̀rầṅ	‘jackal’
CV.CVC.CV	sá̀rà̀ṅḡà̀	‘tree type’
CVC.CV.CV	ṭú̀ndú̀li(g)	‘elbow’
CVC.CV.CVC	sà̀ḡà̀lầṅ	‘tree type’

Long vowels may occur in any syllable of three-syllable words. No more than three syllables in a root have been attested.

(21) Three-syllable long vowel syllable structures

V.CV.CVV	ũ̀ḡú̀rè̀̀	‘pumpkin’
CVV.CV.CV	mó̀sò̀nimò̀	‘vegetable type’
CV.CV.CVV	kūsū̀mí̀	‘knee’
CV.CVV.CVV	kū̀ḡú̀ḡí̀	‘bird type’

The verb root also has the syllable structure (C)N(C)(C), where the vowel nucleus is

the only obligatory constituent of the syllable and can be short, long, or a vowel sequence. However, at least 90% of verb roots consist of the syllable CVC with short vowel. The other syllable types are rare.

(22) **Root verb syllable types**

VC	/ab/ L	‘sit’
CV	/ba/ M	‘throw’
CVC	/be/ L	‘beat’
CVVC	/maar/ M	‘buy’
	/kœj/ L	‘welcome’
CVCC	/gams/ MH	‘find’
CVCVC	/kœŋɔɾ/ L	‘snore’

2.3.3 Monosyllabic vowel lengthening

The surface syllable structure of Gaahmg requires that all monosyllabic, open-syllable nouns and verbs have long vowels as stated in the rule of {P4}.

{P4} Monosyllabic vowel lengthening

Vowels are realized as long in monosyllabic, opened-syllable nouns and verbs.

Normally, the underlying root vowel of monosyllabic, open-syllable nouns is long. But in nouns such as *tʃʃ/ tʃ-gg* ‘cow’ which have a short root vowel, the vowel is realized as long in the singular form. In the plural form with final consonant, the vowel remains short.

In verbs such as *nág-gā/ nág-dā* ‘sleep.SBJV1sN/.1pN’ with root-final velar plosive, the velar plosive is elided in word-final position of incomplete forms {P2}, as will be discussed in 9.6. The resulting monosyllabic open-syllable verb with underlying short vowel surfaces with a long vowel *nāā* ‘sleep.INCP’.

The lengthening rule of {P4} requires that the minimal surface word for nouns and verbs have at least mid syllable weight. The process does not apply to other parts of speech such as the negative *wá* ‘no, not’ or the adverb *tu* ‘towards, upward’. These adverbs, which are separate words, are discussed in chapter 13.

2.3.4 Nasal clusters and prenasalization

Nasal-obstruent sequences such as in *àndàrs* ‘insect type’ and *tĩns-əgg* ‘asking’ are common in the language. They are interpreted as consonant sequences instead of prenasalized obstruents for the following reasons: several unambiguous consonant sequences are attested in 2.1.4.1 including nasal-obstruent sequences, there are no

words beginning with a nasal-obstruent sequence that must count as one unit, there are no three-consonant sequences across syllable boundaries in which a nasal-obstruent sequence must count as one unit, and all word-final nasal-obstruent sequences fit into the proposed syllable type CVCC.

2.3.5 Ambiguous vowel sequences

Vowel sequences before word-medial or word-final consonant sequences such as in the words of (23) are interpreted as vowel sequences in the surface form. The vowels in V_2 position of the sequences cannot be analyzed as glides, since three consonants in a sequence are not allowed.

- (23) $V_1V_2C.C$ - or $V_1V_2CC\#$
- | | |
|--------|-----------------|
| ḍīōrmə | ‘centipede’ |
| kāūrjə | ‘tree type’ |
| àr-g | ‘priest, chief’ |
| śīlḍ | ‘cold (n)’ |
| gəūr-ḍ | ‘stomach’ |

Vowel sequences before root-final sonorants such as in the words of (24) are interpreted as vowel sequences in the surface form. As shown in the distribution of word-final consonant sequences of (12), only sonorant-obstruent sequences are allowed, as in *bərd* ‘lion’; word-final sonorant-sonorant consonant sequences (**cəwr* ‘rabbit’, **gəyn* ‘metal worker’) are not allowed. However, unambiguous vowel sequences such as in *ḍīōrmə* ‘centipede’ and *būrə* ‘tree type’ of (16) are attested. Thus, the vowels in V_2 position of the sequences in (24) are analyzed as vowels.

- (24) $V_1V_2C_{[+son]}\#$
- | | |
|------|----------------|
| cərd | ‘rabbit’ |
| gəēn | ‘metal worker’ |
| ḥīl | ‘tree type’ |

Vowel sequences before root-final obstruents such as in the words of (25) are ambiguous. The vowels in V_2 position of the sequences can be analyzed as glides in the surface form since all other sonorants (*m, n, ŋ, l, r, ʃ*) are unambiguously attested in word-final sonorant-obstruent constructions as shown in (12). They can also be analyzed as vowels in the surface form since all relevant vowel sequences (*aɔ, eɔ, aɛ, ɛɛ, əu, iu, əi, ui*) are unambiguously attested in (16). Although there is no strong evidence for one interpretation over the other, such words are listed with vowel sequences in this thesis¹³.

¹³ In (12), the glides are written instead of vowels in order to show the full range of sonorant possibilities in word-final sonorant-obstruent position. Otherwise, vowels are written for this

- (25) $V_1V_2C_{1-son}\#$
 ɖāāɖ ‘fertile soil’
 káēɖ ‘serving spoon’
 ɖāìɖ ‘scorpion’

Vowel sequences before root-medial consonants such as in the words of (26) are also ambiguous. The vowels in V_2 position of the sequences can be analyzed as glides in the surface form since all other sonorants are unambiguously attested in word-medial, syllable-final position as shown in (11). They can also be analyzed as vowels in the surface form since all relevant vowel sequences are unambiguously attested in (16). Although there is no strong evidence for one interpretation over the other, such words are listed with vowel sequences in this thesis.

- (26) V_1V_2C-
 kàèmə ‘lucky stone’
 kāāɖá ‘ear wax’
 fēēɖá ‘planting seed’

2.3.6 Ambiguous final vowels

Word-final vowel sequences such as in *māāð* ‘gazelle’ are underlying vowel-plosive or vowel-approximant constructions which surface as vowel-vowel sequences. The bilabial and palatal weakening rule of {P1b} states that the underlying plosives /b/, /ɟ/ and approximants /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel. Unambiguous word-final vowel sequences such as in *būð* ‘tree type’ support this analysis, as does the fact that different allomorphs of the accompaniment and definite clitics attach to stem-final vowels rather than to stem-final consonants.

In (27), singular nouns and their accompaniment and definite forms are given. Accompaniment singular nouns take the clitic = \tilde{E} for surface-final consonant stems as in (a) and the clitic = $n\tilde{E}$ for surface-final vowel stems as in (b-d). The language treats (b-p) as having vowel-final stems and attaches the clitic = $n\tilde{E}$. Similarly, the definite clitic = A for surface-final consonant stems attaches in (a), but definite clitics having final n for surface-final vowel stems attach in (b-p).

There are no noun suffixes with initial consonant which attach to both underlying-final consonants and underlying-final vowels. Therefore, the root-final plosives /b/, /ɟ/, and /g/ never surface as plosives as they do in verbs (*!cág/*, *cáá* ‘bathe.INCP.3sN’, *cág-gággā* ‘bathe-COMP.D’). In nouns, there is no way to verify whether the root-final segments are underlyingly /w/ or /b/, /ɟ/ or /y/. However, although the definite

position.

(27) $V_1V_2\#$ in noun forms

	UR	N SG	ACM	DEF	
(a)	/kaam/ L	kààm	kààm = ē	kààm = ā	‘nyala’
(b)	/waayaa/ H	wááyáá	wááyáá = nē	wááyáá = n	‘bird type’
(c)	/aŋe(g)/ H	áŋé	áŋé = nē	áŋé = n	‘elephant’
(d)	/buə/ ML	būə	būə = nī	būə = n	‘tree type’
(e)	/kaw/ HL	káɔ̃	káɔ̃ = nē	káv = àn	‘hyena, root’
(f)	/maaw/ ML	māāɔ̃	māāɔ̃ = nē	māāw = àn	‘gazelle’
(g)	/bew/ ML	bēɔ̃	bēɔ̃ = nē	bēw = àn	‘tree type’
(h)	/ceew/ HM	cééɔ̃	cééɔ̃ = nē	cééw = àn	‘lame person’
(i)	/tay/ ML	tāè	tāè = nē	tāy = àn	‘giraffe’
(j)	/kaay/ M	kāāē	kāāē = nē	kāāy = àn	‘witch doctor’
(k)	/muy/ M	mūi	mūi = nī	mūy = ðn	‘wildebeest’
(l)	/puuy/ ML	pūūi	pūūi = nī	pūūy = ðn	‘leopard’
(m)	/buu/ L	bùù	bùù = nī	bùù. = ùn	‘chicken coop roof’
(n)	/rɛɛ/ M	rēē	rēē = nē	rēē. = ēn	‘cotton’
(o)	/tɔɔ/ H	tóó	tóó = nē	tóó. = ón	‘cow’
(p)	/jū/ ML	jūi	jūi = nī	jūi. = ìn	‘turkey’

clitic distinguishes surface-final vowel stems from surface-final consonant stems, it also distinguishes underlying-final approximant (or plosive) stems from underlying-final vowel stems. The definite clitic = *An* attaches to stems with underlying-final approximants in (e-l), and the definite clitic = *Vn* with copied vowel from the stem attaches to stems with underlying-final vowels in (m-p). Thus, the singular nouns of (e-l) have underlying-final approximants or plosives, but surface-final vowels.

2.4 Tone

There are three underlying level tones in Gaahmg illustrated by the words of table 5.

Table 5: Contrastive H, M, and L tones

H	śóŕ	‘tree bark’
M	ǎǎŕ	‘anger’
L	ààŕ	‘sheep’

Rising and falling tone is analyzed as a sequence of two level tones. The level tones combine and result in nine tone melodies which are all contrastive in the same monosyllabic syllable type—three level, three falling, and three rising. The same, as well as additional tone melodies, are contrastive in disyllabic syllable patterns.

Unlike some African tone languages, tone is not affected by consonants, tone is stable—it does not shift from one syllable to another, and tone does not down-step or down-drift. The functional load of tone is very high, both in the distinction of words and in the expression of grammatical functions.

The tone bearing unit is the syllable. In roots with fewer tones than the number of syllables, such as in three-syllable nouns with two tones, tone is assigned right-to-left, regardless of syllable weight. However, when there are more tones than syllables, such as in disyllabic roots with three-tone melodies, two tones are assigned to the heaviest syllable, and the remaining tone is assigned to the other syllable.

In roots, no more than one tone may be assigned on light syllables and generally no more than two tones may be assigned on mid or heavy syllables. However, as will be seen in 7.6.2, two tones (HM) are assigned to the accompaniment clitic = \bar{E} which is a light syllable. And as will be seen in 9.8.6, three tones (MHM) are assigned to the continuous past suffix - \bar{A} \bar{n} which is a mid syllable. Nevertheless, no more than three tones are ever allowed on any one syllable.

2.4.1 Tonal contrasts in the same syllable structure

The words in (28) have contrastive tone melodies for the specified syllable structures. Three level, three falling, and three rising tone melodies are attested in the CVVC syllable type. There is also one attested monosyllabic root with three tones (*dùul* ‘instrument’). The same tone melodies and additional tone melodies are attested in disyllabic syllable patterns, although not all in the same syllable pattern. The singular suffix - \bar{d} of *nĩ-d* ‘tooth’ and of several other nouns in (28) does not add tone, as will be discussed in section 6.3.1. The contrasts support the claim of there being minimally three underlying tones in the language.

(28) Tonal contrasts in the same syllable structures

	CVVC	CVCVVC	CVCVC
H	póór ‘boat’	wéráá- \bar{d} ‘clan member’	básár ‘dried food’
M	bāāl ‘cave’	kālāā- \bar{d} ‘tongue’	tē \bar{d} ēl ‘bird type’
L	dēēl ‘collar bone’	sē \bar{n} āā- \bar{d} ‘instrument’	ḍìrì \bar{m} ‘tree type’
HL	sēēn ‘ruler’	---	fìḍì \bar{n} ‘perfume’
HM	nĩ- \bar{d} ‘tooth’	---	bórē- \bar{d} ‘eye matter’
ML	bēēl ‘metal’	gōmūūr ‘dove’	mōsōr ‘horse’
LH	ḍōōr ‘fence’	mòḍáál ‘hatred’	---
LM	ḍēēr ‘leach’	bàrōōl ‘cistern’	gēmōl ‘forest’
MH	būūl ‘bread’	sēwéēl ‘tree type’	cēyám ‘tobacco’
HLH	---	rú \bar{n} úú- \bar{d} ‘bird type’	---
HLM	---	móḍùūl <i>village name</i>	---
HMH	---	lú \bar{l} í \bar{d} ‘snake type’	---
LHL	ḍùūl ‘instrument’	bàsáār ‘lie’	bòḍōl ‘job-less person’

Although there are at least nine contrastive tone melodies in noun roots, verb roots may only have the seven underlying tone melodies of (29). The only verb roots

attested to have HM melody are *bēl-l* ‘name, call’ and *léē* ‘come, arrive’, and the only verbs attested to have ML melody are *dṣṣ-s* ‘stand’, *būn-ḡ* ‘make big’. The infinitive verb form is analyzed to reveal the underlying root tone.

(29) **Tonal contrasts in infinitive verb forms**

	Root tone	INF	
(a)	H	fír-r	‘smell, pray’
(b)	M	cṣr-r	‘help’
(c)	L	ḡúr-r	‘bury’
(d)	HL	pâ-r-r	‘attach’
(e)	HM (rare)	bēl-l	‘name, call’
(f)	ML (rare)	dṣṣ-s	‘stand’
(g)	MH	kṣḡ-ḡ	‘strike, ram’

2.4.2 Tone distribution

Level tone

Level tone appears in syllable types regardless of syllable weight. In (30), syllable types are grouped together according to light, mid, or heavy syllable weight. High, Mid, and Low tone occur on each of the six syllable types with both long and short vowels, with the exception of High on the syllable type VV. The singular suffixes

(30) **Level tone distribution in six syllable types with both short and long vowels**

	V- (light)	VC- (mid)	VCC (mid)
H	íyṣṣ ‘oil, fat’	órḡàà ‘army’	úlḡ ‘grinding stone’
M	ūrīī ‘ostrich’	āldáá ‘earth’	ālḡ ‘fox’
L	ṣsáá ‘pillow’	ḡrḡḡ-ḡ ‘insect’	àrs ‘tree type’
	CV- (light)	CVC (mid)	CVCC (mid)
H	ḡfīnī ‘world’	cíl ‘spine’	célḡ ‘local broom’
M	kāsá ‘boy’	mēl ‘tree type’	kṣrḡ ‘bird type’
L	fḡrī <i>hill name</i>	ḡàl ‘pot’	fāḡ ‘tree type’
	VV- (mid)	VVC (heavy)	VVCC (heavy)
H	---	ám ‘bone’	éél-g ‘stomach’
M	ṣṣrī ‘angry person’	ēēḡ ‘net type’	īīg ‘milk’
L	àsà ‘basket’	àl ‘hyena’	àr-g ¹⁴ ‘priest, chief’
	CVV- (mid)	CVVC (heavy)	CVVCC (heavy)
H	wááyáá ‘bird type’	pṣr ‘boat’	dṣlḡ ‘tree type’
M	lēērṣṣ ‘reed’	bāal ‘cave’	bāār-ḡ ‘abdomen’
L	fāḡḡḡ ‘sorghum type’	dēl ‘collar bone’	jèèrs ‘hippopotamus’

¹⁴ There are two singular forms *àr*, *àrg* and the plural form is *àrēēg*.

-d, *-g* of *àrṁṁ-ḍ* ‘insect’, *éél-g* ‘stomach’ and of other roots of (30) do not add tone, as will be discussed in section 6.3.1.

Falling and rising tone

Falling and rising tone only appear in roots on syllable types with mid and heavy weight. As shown in (31), falling and rising tone does not occur on the open syllable types V and CV with light weight. It has not been attested on VVCC syllables. Falling and rising tone is common on CVVC, CVVCC, CVC and CVV syllables, and rare in VC, VCC, VV, VVC and CVCC syllables. Other than in the word *ḍùùl* ‘instrument’, three tones on the same syllable in monomorphemic roots is not attested.

(31) Falling/rising tone distribution in various syllable types

	V- (light)	VC (mid)	VCC (mid)
HL	---	ìl ‘horn’	ìlɟ ‘beeswax’
	CV- (light)	CVC- (mid)	CVCC (mid)
HL	---	kâlfɔ̃ ‘jaw’	---
ML	---	jêr ‘sorghum type’	rɔ̃ɲɔ̃ ‘mud’
LH	---	ḍǎlgɔ̃ ‘drum’	---
LM	---	gǎn ‘responsibility’	---
MH	---	ḍǎd ‘stork’	---
	VV- (mid)	VVC (heavy)	VVCC (heavy)
HL	âârēē ‘grass type’	ââs ¹⁵ ‘dried food’	---
HM	---	úū-ḍ ‘wasp’	---
	CVV- (mid)	CVVC (heavy)	CVVCC (heavy)
HL	mââ ‘house’	séên ‘ruler’	gùùrḍ ‘energy’
HM	múū ‘mosquito’	ɲī-ḍ ‘tooth’	káân-ḍ ‘fly’
ML	ḥū ‘cassava’	bēēl ‘metal’	kāânḍ ‘carrying stick’
LH	---	ḍḍó̃r ‘fence’	gàágg ‘bird’
LM	---	ḍḍē̃r ‘leach’	gḍūr-ḍ ‘stomach’
MH	míí ‘chicken’	būúl ‘bread’	---
LHL	---	ḍùùl ‘instrument’	---

2.4.3 Tone assignment

In three-syllable words

Tone is stable in that it does not shift or spread from one syllable to another. Thus, it is not possible to determine the tone bearing unit (TBU) by observing shifting or spreading. Rather, tone assignment is used as support of the syllable being the TBU.

¹⁵ Can also be interpreted as having a glide *âws*

All attested three-syllable monomorphemic words are presented in (32). Tone assignment is as expected for one and three-tone melodies for the syllable being the TBU. These have one tone per syllable, with the exception of *kàṅàràṅ* ‘jackal’. Two-tone melodies are assigned right-to-left in that the final tone of the melody surfaces on the final syllable, and the first tone of the melody surfaces on the first two syllables.

(32) **Tone assignment in three-syllable monomorphemic words**

Melodies with one or two tones		Melodies with three tones	
M	nĕṅṅĕrās ‘fully (ADJ.PL)’	HLM	máónimō ‘vegetable type’
L	kàmàlōgg ‘woman’		bámàlĵā ‘morning star’
	sàṅdàlāṅ ‘living alone’		ḍóggòlĵā ‘ankle’
HL	móggólèè ‘maize’	MHM	kūḍúúrĭī ‘bird type’
	túnḍúli(g) ‘elbow’		cĕggéllūū ‘root name’
ML	būḍirĭṅ ‘sunset’	MHL	ūḅúràè ‘pumpkin type’
LH	bimĭrĭṅ ‘bird type’		kāggólĭgg ‘cock’
LM	càṅàlḍā ‘upper arm’	LHL	kàṅàràṅ ‘jackal’
	gèbbèṅḍ ‘area name’		
	mùggùrĭī ‘hatred’		
	kūsūmĭí ‘knee’		
	tāsāmé(g) ‘grass type’		
	fĕṅḍlḍé ‘leave for child rearing’		

In disyllabic words

Nearly all disyllabic roots with one or two-tone melodies are assigned tone as expected with one tone per syllable. However, there are five attested exceptions, all of which involve the ML tone melody. The word *ārāàḍ* ‘lake’ of (33) and four words listed below it are exceptions.

All attested disyllabic monomorphemic words with three-tone melodies are also shown in (33). In these words, the syllable with the heaviest syllable weight is assigned two tones and the other syllable is assigned one. If there is the same weight in both syllables, two tones are usually assigned to the first syllable, but in two out of six of such words, tone is assigned to the second syllable (*kḍḍlḍr* ‘weakness’ and *bĕṅḍáè* ‘tomato’). In (33), syllable weight is listed before each word with three tones, where l = light, m = mid, and h = heavy, and the letters for the first and second syllables are divided by a period. It is the underlying syllable structure that determines the syllable weight rather than the surface form. For example, since *mūggúūi* ‘burning wood’ has an underlying final /y/ or /ĵ/, the second syllable is underlying CVVC instead of CVVV.

(33) **Tone assignment in two-syllable monomorphemic words**

Melodies with one or two tones		Weight	Melodies with three tones	
H	fádóól ‘farmland’	HLH	l.h	rúnúú-d ‘bird type’
M	bārōól ‘cistern’	HLM	m.m	áârēē ‘grass type’
L	sèŋàà-d ‘instrument’		m.l	kâlfō ‘jaw’
HL	fíḍin ‘perfume’		m.l	kúurī ‘sheave’
ML	mōsòr ‘horse’		l.h	máðùul <i>village name</i>
	āràà-d ‘lake’	HMH	h.h	kúuríúúgg ‘rat type’
	gōmūūr ‘dove’		l.h	lúlííḍ ‘snake type’
	gōrmūūr-d ‘tree type’		l.m	málǎḥ ‘nose mucus’
	kāŋnāād ‘bowel type’	MHM	m.m	bállēē ‘tree type’
	kāmēēr ‘village’	MHL	m.h	mūggúuì ‘burning wood’
LH	mòḍáál ‘hatred’	LHM	m.l	ḍǎlgō ‘drum’
LM	gēmīil ‘tree type’	LHL	l.m	bàðàl ‘business’
MH	sēwéél ‘tree type’		m.m	kòðfōr ‘weakness (N.SG)’
			l.h	jòfōr ‘desire’
			m.m	bèrŋáð ‘tomato’
			l.m	òsāà ‘wooden pillow’
			l.h	gàḍáàè ‘basket’
			l.h	kàðáàm ‘work’
			l.h	kùsúūr ‘authority’
			m.m	círṣè(g) ‘tool cleaner’

2.4.4 Lexical tone

Lexical tone described in this section has to do with roots (single non-bound morphemes) which are distinguished only by tone. Grammatical tone described in 2.4.5 has to do with bound morphemes distinguished only by tone that make a grammatical distinction, or morphemes that consist only of tones.

Gaahmg frequently uses tone for distinguishing lexical meanings, as shown in the lists of minimal pairs in (34-36).

(34) **Noun minimal pairs**

H - M	sóóm	‘hunter’	sōóm	‘medicine’
	óór	‘tree bark’	ōōr	‘anger’
	cáá	‘wild cat’	cāā	‘bath’
	kááé	‘night’	kāāē	‘witch doctor’
H - L	ḍáár	‘throne’	ḍààr	‘eagle’
	óór	‘tree bark’	òòr	‘sheep’
H - HL	káár	‘stew’	kààr	‘male goat’
	cíl	‘spine’	cìl	‘instrument’

Noun minimal pairs (continued)

H - ML	kóǎél	‘natural painting’	kǒǎèl	‘baboon’
	ṣírí(g)	‘tree type’	ṣírì(g)	‘death, dying’
M - L	ǎǎr	‘anger’	ǎǎr	‘sheep’
M - HM	mūū	‘forehead, face’	múū	‘mosquito’
M - ML	bāāl	‘cave’	bāāl	‘instrument’
	cāā	‘bath’	cāā	‘cooking stone’
	kāpāā-ḍ	‘back of head’	kāpāāḍ	‘bowel for hot food’
M - MH	mīī	‘goat’	mīī	‘chicken’
L - ML	ḍḗèl	‘storage shelf’	ḍḗèl	‘lake’
	ḵìì	‘tree type’	ḵìì	‘turkey’
L - MH	ḵḗém	‘thing, something’	ḵḗém	‘sorghum sieve’
L - LM	bḍggò	‘tree type’	bḍggò	‘cream’
	bàrḍḍl	‘snake type’	bàrḍḍl	‘cistern’
HM - ML	kāān-ḍ	‘fly’	kāānḍ	‘water-carrying stick’

(35) Verb minimal pairs in infinitive form

H-L	cág-g	‘bathe, wash’	càg-g	‘finish’
	pál-l	‘cut’	pàl-l	‘fall’
M-L	bēl-l	‘possess’	bèl-l	‘hit, beat’
M-HM	bēl-l	‘possess’	bēl-l	‘name, call’
L-HM	bèl-l	‘hit, beat’	bēl-l	‘name, call’

(36) Differing word category minimal pairs

H - M	káén	‘finished (ADJ)’	kāēn	‘yesterday (ADV)’
H - HL	káén	‘finished (ADJ)’	kāèn	‘thin (V)’
H - ML	fúúí	‘tree type’	fūūì	‘male (ADJ)’
H - LHL	kǒǎfǒr	‘thin, weak (ADJ)’	kǒǎfǒr	‘weakness’
M - HL	kāēn	‘yesterday (ADV)’	kāèn	‘thin (V)’
M - ML	cīīnḍ-ǎgg	‘finishing (N.SG)’	cīīnḍ-ǎgg	‘playing (N.PL)’
H - MH	báár	‘weak (ADJ)’	bāār	‘tribe member’
M - MHM	bāāl	‘cave’	bāāl	‘striped (ADJ)’
L - LHL	ḍùùl	‘difficult (ADJ)’	ḍùùl	‘instrument’
HL - ML	ḵíìlì	‘knowledgeable (ADJ)’	ḵììlì	‘ignorance’
ML - LH	gāàl	‘falcon’	gāáal	‘far (ADJ)’
ML - HMH	būūr	‘pot for wine’	búúur	‘remained (ADJ)’

As seen from (37), tone distinguishes subject and infinitive pronouns, as well as possessive pronouns of kinship terms and body parts. Tone also distinguishes the conjunction ǎ ‘and’ with Low tone from the second singular pronouns ǎ ‘you’ and ǎ ‘your’. Pronouns are discussed in the sections indicated in (37) and the conjunction

ə ‘and’ is discussed in 15.2.

(37) **Pronoun minimal pairs**

5.3	9.2	5.2.3	5.2.2	
Subject	Infinitive	Possessive kinship	Possessive body parts	
á	ā	á	ā	1s
ó	ō	ó	ō	2s
ē	ē	é	ē	3s

Tone also distinguishes singular and plural demonstrative adjectives as shown in (38) where singular demonstratives have initial High tone and plural demonstratives have initial Low tone.

(38) **Demonstratives (see 8.1.3)**

DEM ADJ SG		DEM ADJ PL		
néé	‘this’	nèè	‘these’	near speaker
náá(n)	‘that’	nàà(n)	‘those’	near addressee
nááḍi	‘that’	nààḍi	‘those’	away from both

Tone also distinguishes the animate accompaniment preposition è ‘with’ from the inanimate accompaniment prepositions ē ‘with’ and the general preposition é (GP).

(39) **Preposition minimal pairs**

è	‘with’	Animate accompaniment preposition	11.1
ē	‘with’	Inanimate accompaniment preposition	11.2
é	GP	General preposition	11.3

In (40), examples of nouns with three tonal allomorphs of a plural suffix are given. The suffix of (a) has no underlying tone, allowing the plural form to surface with Low tone, the same as in the root. Whereas, the suffix of (b) has underlying Mid tone and the suffix of (c) has underlying High tone. As will be shown in section 6.3.1, there are seven other noun plural suffixes with two or three tonal allomorphs, most of which are not semantically or phonologically predictable with the root.

(40) **Tonal allomorphs of noun plural suffixes (see 6.3.1)**

Suffix	Tone	Noun SG	Noun PL	
(a)	-Agg	ləŋḍ	ləŋḍ-əgg	‘tree type’
(b)	-Āgg	bəŋɲ	bəŋɲ-āgg	‘pulp’
(c)	-Ágg	mīḍ	mīḍ-ágg	‘stone’

2.4.5 Grammatical tone

Gaahmg also frequently uses tone to distinguish grammatical function; there are grammatical distinctions made only by tone in nouns and verbs. Grammatical tone distinguishes bound morphemes with different grammar, or is a morpheme in itself, either added to or replacing underlying stem tone.

Tone distinguishes bound morphemes, such as the copular and definite clitics of (41). The copular singular clitic = \bar{A} which takes the [ATR] value of the root has underlying Mid tone, the copular plural clitic = \dot{A} has underlying Low tone, and the definite clitic = \acute{A} has underlying High tone.

(41) **Copular = \bar{A} , = \dot{A} and definite = \acute{A} suffixes**

	7.2	7.3	
	Noun	Noun COP	Noun DEF
SG	ḡḡm	ḡḡm = ḡ	ḡḡm = ḡ ‘Arab’
PL	ḡḡm-g	ḡḡm-g = ḡ	ḡḡm-g = ḡ ‘Arabs’

Similarly, the past and non-past continuous forms differ only by tone as shown by the verbs of (42). The past continuous suffix = $\bar{A}n$ has underlying MH tone, whereas the non-past continuous suffix = $\acute{A}n$ has underlying High tone.

(42) **Past = $\bar{A}n$ and non-past = $\acute{A}n$ continuous verb forms**

	9.8.6	9.8.7	
Root tone	CONT.P.3sN	CONT.N.3sN	
H	kóm- $\bar{a}n$	kóm- $\acute{a}n$	‘cut, chop’
L	gáf- $\bar{a}n$	gáf- $\acute{a}n$	‘give’
MH	kǎḡ- $\bar{a}n$	kǎḡ- $\acute{a}n$	‘strike’

Several verb clitics listed in (43-44) are also distinguished only by tone. The third singular object pronoun allomorph = E with no underlying tone attaches to first singular verbs as in (a) and a different allomorph = \acute{E} with HM tone attaches to third singular verbs as in (b). The relative clause definite clitic = \acute{E} with High tone attaches to singular person verb forms as in (c), and the clitic = \grave{E} with Low tone attaches to plural person verb forms as in (d). The subordinate (SBO1) clitic = \bar{E} with Mid tone attaches to first singular verbs as in (e).

(43) **Verb clitics distinguished by tone**

(a)	10.4.2	1SN/3SA	= E	pál = \bar{e}	‘cut.INCP.1sN = 3SA’
(b)	10.4.2	3SN/3SA	= \acute{E}	pál = \acute{e}	‘cut.INCP.3sN = 3sA’
(c)	10.9	RDM.SG	= \acute{E}	pál = \acute{e}	‘cut.INCP.3SN=RDM’
(d)	10.9	RDM.PL	= \grave{E}	pál = \grave{e}	‘cut.INCP.3pN=RDM’
(e)	10.7	SBO1.1sN	= \bar{E}	pál = \bar{e}	‘cut.INCP.1SN=SBO1’

The third singular marked object pronoun allomorph =*i* with no underlying tone attaches to first singular verbs as in (a) and a different allomorph =*i* with Low tone attaches to third singular verbs as in (b). The imperfect third singular clitic =*í* with High tone attaches to incomplete verbs as in (c), and the subordinate ‘when’ (SBO1) clitic =*ǐ* with LM tone attaches to third singular verbs as in (d).

(44) **Verb clitics distinguished by tone**

- | | | | | | |
|-----|--------|----------|----|--------|---------------------|
| (a) | 10.4.2 | 1sN/3sN | =i | pól=ī | ‘cut.INCP.1sN=3sAM’ |
| (b) | 10.4.2 | 3sN/3sN | =ì | pól=ì | ‘cut.INCP.3sN=3sAM’ |
| (c) | 10.6 | IPF.3sN | =í | pól=í | ‘cut.INCP=IPF.3sN’ |
| (d) | 10.7 | SBO1.3sN | =ǐ | pól=ǐ | ‘cut.INCP.3sN=SBO1’ |

Where tone is a morpheme in itself, it can be added to segmental forms or can replace the underlying tone of segmental forms. Tone is added to distinguish subject persons of verb forms and to distinguish future and non-future subject pronouns. Tone replacement is used for genitive case, plural person possession of body part nouns, antipassives, causatives, and verbal nouns.

In verbs, tone marks subject person agreement by being added to the stem-final syllable. As shown in (45), tone distinguishes third singular and third plural subject verb forms from other person forms. The verb root of (45) has underlying High tone and the completive suffix *-sA* has no underlying tone. In such verbs, high tone is assigned to the stem-final syllable of third singular forms, Low tone is assigned to the stem-final syllable of third plural forms, and Mid tone is assigned to the stem-final syllable of first and second person forms.

(45) **Paradigm of completive verb *kóm-sA* ‘chop-COMP’ with subject pronouns (see 9.5)**

á	kóm-s̄	1s	āgg	kóm-s̄	1p
ú	= kúm-s̄ ¹⁶	2s		ūg = kúm-s̄	2p
ē	kóm-s̄	3s	ē, ēgg	kóm-s̄	3p

Tone is also added to subject pronouns to indicate future tense of the following verb form. In first and second person subject pronouns, Mid tone is assigned along with High tone on the final syllable, resulting in falling tone.

¹⁶ As discussed in 5.3, the second person morpheme specifies [+ATR] quality on verbs forms. The [+ATR] quality spreads leftward to the second person pronoun clitics *ɔ=*, *ɔgg=*.

(46) **Future and non-future pronouns (see 9.8.4)**

Subject non-future	Subject future	
á	â	1s
ó	ô	2s
āggá	āggâ	1p
ōggó	ōggô	2p

Genitive case is marked by tone replacement. Nouns with Mid and MH root tone melody have HL melody in genitive forms. Nouns with all other root tone melody have ML tone melody in genitive forms.

(47) **Genitive singular and plural nouns with various root tone melodies (see 6.5)**

Root tone	GEN	Noun SG DEF	Noun SG DEF GEN	Noun PL	Noun PL GEN	
H	ML	t̩s̩ = n	t̩d̩ = n	t̩s̩-gg	t̩d̩-gg	‘cow’
M	HL	m̩i̩ = n	m̩u̩ = n	m̩i̩-gg	m̩u̩-gg	‘goat’
L	ML	d̩i̩ = n	d̩u̩ = n	d̩i̩-gg	d̩u̩-gg	‘rat’

A Low-Mid tone pattern is required by the plural person possessive morpheme of all body part nouns. Although the underlying tone melody of *b̩s̩r̩à* / *b̩s̩r̩à-gg* ‘shoulder’ in the paradigm of (48) is Mid-Low, the plural forms possessed by plural persons surface as Low-Mid.

(48) **Possessive paradigm for inalienable body part *b̩s̩r̩à* / *b̩s̩r̩à-gg* ‘shoulder’ (see 6.4)**

	Singular person pronouns			Plural person pronouns		
Noun SG	ā	b̩s̩r̩à	1sP	---	---	1pP
	ō	b̩s̩r̩à	2sP	---	---	2pP
	ē	b̩s̩r̩à	3sP	---	---	3pP
Noun PL	ā	b̩s̩r̩à-gg	1sP	āgg	b̩d̩r̩ā-gg	1pP
	ō	b̩s̩r̩à-gg	2sP	ūgg	b̩d̩r̩ā-gg	2pP
	ē	b̩s̩r̩à-gg	3sP	ēgg	b̩d̩r̩ā-gg	3pP

In antipassive forms, root tone melodies are replaced by other tone melodies: High changes to HM, Mid changes to MH, and Low changes to LH.

(49) **Antipassive suffix *-An* on third singular completive verbs (see 9.10.2)**

Root tone	3sN	ANTIP	3sN	
tone	COMP	tone	ANTIP-COMP	
H	f̩r̩-s̩	HM	f̩r̩-ōn-s̩	‘smell’
M	c̩r̩-s̩	MH	c̩r̩-ōn-s̩	‘help’
L	d̩r̩-s̩	LH	d̩r̩-ūn-s̩	‘bury’

In causative forms, root tone melodies are also replaced by other tone melodies, as shown in (50).

(50) **Third singular causative completive verbs (see 9.11.2)**

Root	COMP	CAUS	COMP	
tone	3SN	tone	CAUS 3sN	
H	f̃r-só	HM	f̃r-só	‘smell’
M	cōr-só	HM	cūr-sú	‘help’
L	ḍūr-sū	ML	ḍūr-sū	‘bury’
MH	kǎs-só	HM	kās-só	‘strike’

Finally, in verbal nouns, root tone melodies are replaced by other tone melodies, as shown in (51).

(51) **Verbal noun plural suffixes =*Agg*, =*gg* (see 10.10)**

Root	INF	VN	VN SG	VN PL	
tone		tone			
H	pál-l	M	pāl	pāl = āgg, pāl = g	‘cut’
L	f̃ɛl-l	ML	f̃ɛl	f̃ɛl = āgg, f̃ɛl = g	‘tell’
HL	p̃r-r	ML	p̃r	p̃r = àgg, p̃r = g	‘deceive’
HM	b̃ɛl-l	M	b̃ɛl	b̃ɛl = āgg	‘name’
MH	kǎð-ð	M	kān	kǎð-āgg	‘strike’

3 Morphophonology

Several morphophonological alternations applying throughout the language are presented in this chapter and labelled with an M. Alternations which apply only to certain morphemes are presented in the relevant sections, and not here. Phonological consonant rules, which were presented in 2.1.3 and the monosyllabic vowel lengthening which was presented in 2.3.3, are relisted here for ease of reference.

- {P1} Bilabial and palatal weakening (from 2.1.3)
- (a) /b/, /ɟ/ are weakened intervocally to approximants.
 - (b) /b/, /ɟ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel.
 - (c) /w/, /y/ before word-final sonorants are weakened to vowels with the same [ATR] quality as the preceding vowel.
- {P2} Velar plosive elision (from 2.1.3)
/g/ is elided both inter-vocally and word-finally when following a vowel.
- {P3} Plosive weakening (from 2.1.3)
Plosives are weakened to approximants when they immediately precede word-final obstruents and follow vowels.
- {P4} Monosyllabic vowel lengthening (from 2.3.3)
Vowels are realized as long in monosyllabic, opened-syllable nouns and verbs.

Whereas the phonological rules apply to all relevant environments in a word, the morphophonological rules only apply to relevant environments that exist because of morphemes combining. All rules in this section apply in several bound morphemes, often including both suffixes and clitics in both nouns and verbs. However, morphophonological rules are not applied to two noun clitics (COP, ACM), and are not applied to several verb clitics. Nevertheless, all the rules apply to all stem suffixes. In 4.2, morphophonological rules not applied to certain clitics are further discussed.

In the relevant sections throughout this thesis, when the rules of this section are referred to, they are indicated by number between braces such as {M3}. Thus, the common morphophonological rules of this section are easily distinguished from less common processes applied to one or two morphemes. The latter are more like exceptions in the language than rules. Each of the following rules is explained afterwards with examples.

3.1 Morphological consonant and vowel elision

{M1} Verb stem suffix vowel elision

When vowels are joined through morphology to verb stems with a vowel-final suffix, the final vowel of the stem is elided.

When the agentive passive clitic = \bar{E} is attached to the stem ʃɛr-sā ‘forget-COMP’, the completive suffix vowel is elided ($\text{ʃɛr-s}=\bar{e}$). In the past continuous relative clause verbs of 10.9, the definite clitic = \bar{E} does not elide the continuous suffix vowel -*a* of ŋān-ā . = \bar{e} ‘file-CONT.P.RC=RDM’ and is one exception to the rule.

{M2} Suffixes becoming juxtaposed syllables

When vowels are joined through morphology to roots with final vowels, no vowels are elided and the bound morpheme appears as a syllable on its own, juxtaposed to the root.

When the vowel-initial past continuous suffix - $\bar{A}n$ is attached to the vowel-final verb root /pa/ ‘guard’, the suffix becomes a second syllable, juxtaposed to the root (pā-ān). When the copular clitic = $\bar{V}n$ is attached to the root tʃʃ ‘cow’, the clitic vowel *V* takes on all the features of the final vowel and begins a second syllable (tʃʃ-ōn). When the agentive passive clitic = \bar{E} is attached to the root bāā ‘throw.INCP’, the suffix vowel becomes a new syllable ($\text{bā}=\bar{e}$).

3.2 Morphological [ATR] harmony

In 2.2.2.2, it was observed that the [-ATR] vowels (*e, ə, a*) and the [+ATR] vowels (*i, u, ə*) function as distinct sets in roots, the vowels of one set never occurring in the same root with vowels of the other set. The [ATR] harmony also functions across morpheme boundaries, spreading either to the right or to the left without limit in words to all vowels unspecified for [ATR]. [+ATR] quality is dominant. In all morphemes, only [+ATR] quality is specified underlying, and spreads from root to bound morpheme or from bound morpheme to root. Vowels that are not specified for [ATR], or do not have an [ATR] association through spreading, are realized as [-ATR] by default. Examples follow in the next two sections.

{M3} [+ATR] spreading

[+ATR] quality spreads to the left or to the right across morpheme boundaries, only limited by word boundaries, to vowels unspecified for [ATR].

3.2.1 Rightward [ATR] spreading

The [+ATR] quality spreads rightward from noun roots onto plural suffixes. In (1), nouns representing each of the six vowels attach the plural suffix *-EEgg*, where E is a vowel specified as [-back]. In (d-f), the [+ATR] quality assigned to the noun root spreads rightward onto the suffix unspecified for [ATR]. In (a-c), no such spreading occurs since roots and suffixes are unspecified for [ATR] and take [-ATR] quality by default.

(1) Rightward [ATR] spreading to plural suffix *-EEgg*

	Vowel	Noun SG	Noun PL	
(a)	ε	cɛ̀ɛ̀r	cɛ̀ɛ̀r-ɛ̀ɛ̀gg	‘singer’
(b)	a	ɖàà̀r	ɖàà̀r-ɛ̀ɛ̀gg	‘eagle’
(c)	ɔ	cɔ̀ɔ̀l	cɔ̀ɔ̀l-ɛ̀ɛ̀gg	‘donkey’
(d)	i	ʒíí́l	ʒíí́l-íígg	‘cricket’
(e)	ə	gùù̀r	gùù̀r-íígg	‘grinding stone’
(f)	u	àà̀r	àà̀r-íígg	‘sheep’

3.2.2 Leftward [ATR] spreading

The [+ATR] quality spreads leftward from the imperative plural suffix onto verb roots. A list of singular imperative and imperative plural forms representing each of the six vowels is given in (2). The singular imperative generally has no suffix and is often the same form as the root. The imperative plural has the suffix *-ɖA⁺*, where *A⁺* is a back vowel specified as [+ATR] and takes the [round] feature of the root. In (a-c), verb roots unspecified for [ATR] become [+ATR] in the plural imperative form. In (d-f), [+ATR] verb roots remain [+ATR].

(2) Leftward [ATR] spreading from imperative plural suffix *-ɖA⁺*

	Vowel	IMP	IMP PL	
(a)	ε	fɛ́ɛ́	fíí-ɖɔ̀	‘clean’
(b)	a	ɖáá	ɖáá-ɖɔ̀	‘put, make’
(c)	ɔ	kóm	kúm-ɖū	‘cut, chop’
(d)	i	díú	díú-ɖū	‘plant’
(e)	ə	pêr	pêr-ɖè	‘attach’
(f)	u	túr	túr-rū	‘see’

3.2.3 [+ATR] bound morphemes

Several [+ATR] bound morphemes which spread their quality to the root or stem are represented in (3). For each morpheme, the underlying root and surface form are given along with the section where the morpheme is discussed. [+ATR] quality distinguished the morphemes *-əgg*, *-⁺g*, *-ɖ⁺A*, *=i*, *=i* from other bound morphemes unspecified for [ATR] which are otherwise segmentally equivalent. In

addition, [+ATR] quality is a morpheme in itself added to second person subject verb forms to distinguish them from other person forms. As will be shown in 5.3, the second person singular verb for ‘chopping’ *ó kúm-ān* is [+ATR], whereas the first singular *á kóm-ān* and third singular *ē kóm-ān* are [-ATR].

(3) **[+ATR] bound morphemes and spreading**

Morpheme	Morpheme	UR	SR		Section
N.PL body part	-əgg	/bērɔ̃/	b̥ɪɔ̃-əgg anus-PL	‘anuses’	6.2.3
	- ⁺ g	/kālāā/	k̥əl̥āā-gg tongue-PL	‘tongues’	6.2.3
	-V ⁺ gg	/āā-ɔ̃/	əɔ̃-əgg eye.1pPp-PL	‘our eyes’	6.2.3
IMP.PL	-ɔ̃ ⁺ A	/nām/	n̥ám-ɔ̃ break-IMP.PL	‘Break!’	9.4
CAUS	-ɔ̃ ⁺ A	/kór/	k̥úr-ɔ̃ ‘read-CAUS’	‘he writes’	9.11
Marked ACC	=ì	/wár/	w̥ár = ì ‘take = 3sAM’	‘he takes him’	5.4, 10.4
DAT	=ɪ̃n	/gàf/	g̥àù-s = ɪ̃n ‘give- COMP=3SD’	‘he gave him’	5.5, 10.5
SBO1	=ì	/ŋān/	ŋ̥ān-s = ì ‘file-COMP = SBO1.3SN’	‘(when) he filed’	10.7
Second person subjects		/kóm/	ó kúm-ān, ú = kúm-ān ‘2sN=chop- CONT.N’	‘you are chopping’	5.3, 9.1

3.3 Morphological [round] harmony

{M4} Rightward [+round] spreading

[+round] quality spreads rightward from the root to all suffix vowels not underlyingly specified for the feature [round].

Several bound morphemes in noun and verb morphology are underlyingly specified for [round], but several bound morphemes in noun and verb morphology are not. The roundness only spreads rightward from roots to suffixes or clitics, and never the opposite direction. Roundness does not spread as specified in every word with every speaker, but tends to vary from word to word and from speaker to speaker.

3.3.1 Rightward [round] spreading in nouns

Nouns with root-final consonant sequences commonly take the plural suffix *-Agg*, where *A* is a back vowel unspecified for [round] and takes the [round] and [ATR] features of the root. In (4), the plural forms are shown for nouns with each of the six vowels. In (c,f), the [+round] feature of the root spreads to the vowel of the plural suffix, causing *A* to become *ɔ* or *u*. In other examples of (4), the suffix vowel is realized as unrounded. In (d-f), the [+ATR] quality of the verb root spreads rightward onto the suffix, whereas in (a-c), the noun root unspecified for [ATR] does not affect the suffix.

(4) Rightward [+round] spreading to noun plural suffix *-Agg*

	Root vowel	Noun SG	Noun PL	
(a)	ɛ	célɔ	célɔ-āgg	‘local broom’
(b)	a	mānɔ	mānɔ-āgg	‘tree type’
(c)	ɔ	kōrɔ	kōrɔ-ōgg	‘bird type’
(d)	i	t̥irɔ	t̥irɔ-ōgg	‘farm’
(e)	ə	lənɔ	lənɔ-əgg	‘tree type’
(f)	u	cúlɔ	cúlɔ-ūgg	‘birth sack’

3.3.2 Rightward [round] spreading in verbs

The completive verb has the suffix *-sA*, where *A* is a back vowel unspecified for [round] and takes the [round] and [ATR] features of the root. Similarly, plural subjunctive forms have the suffix *-ɔA* with the same vowel unspecified for [round]. In (5), the completive and plural subjunctive forms are shown for verbs with each of the six vowels. In (c,f), the [+round] feature of the root is spread to the vowel of the completive and plural subjunctive suffixes. In other examples of (5), the suffix vowel is realized as unrounded. In (d-f), the [+ATR] quality of the verb root spreads rightward onto the suffix, whereas in (a-c), the verb root unspecified for [ATR] does not affect the suffix.

(5) Rightward [+round] spreading to completive *-sA* and plural subjunctive *-ɔA*

	Root vowel	COMP	SBJV PL	
(a)	ɛ	bèè-sà	bèè-ɔà	‘tell, say’
(b)	a	cág-sā	cág-ɔā	‘bathe, wash’
(c)	ɔ	kóm-sō	kóm-ɔō	‘cut, chop’
(d)	i	cíg-sō	cíg-ɔō	‘wear’
(e)	ə	ɟə̀ə-sə	ɟə̀ə-ɔə	‘finish’
(f)	u	rùm-sū	rùm-ɔū	‘clear path’

3.4 Morphological tone rules

The following tone rules apply across morpheme boundaries in both noun and verb morphology. They are morphological in that they operate across morpheme boundaries rather than being linked to certain morphemes.

3.4.1 Morphological tone spreading

- {M5} Rightward tone spreading to unassigned bound morpheme vowel
When a bound morpheme with vowel does not have underlying tone, tone spreads rightward from the root or stem to the bound morpheme.

The High tone of the noun root *kás* ‘sorghum’ spreads to the plural suffix *-Agg* without tone (*kás-ǎgg*). The Mid tone of the incomplete verb stem *cǎr* ‘help.1sN’ spreads to the third singular object clitic =*E* without tone (*cǎr=ǎ* ‘help.1sN=3sA’). In a few nouns and verbs, tone spreads to bound morphemes with underlying tone.

- {M6} Second of two root or stem-final tones reassigned to bound morpheme vowel
When a bound morpheme with vowel does not have underlying tone, and when there are two tones assigned to the root or stem-final syllable, the second tone is delinked and reassigned to the bound morpheme vowel.

The Low tone of the noun *ílf* ‘beeswax’ with HL root tone melody delinks and is reassigned to the suffix *-Agg* without tone (*ílf-ǎgg*). The Low tone of the verbal noun *pír* ‘lie’ with ML tone melody is delinked and reassigned to the plural clitic =*Agg* without tone (*pír=ǎgg*).

In a few verbs, the second of two tones assigned to the root-final syllable is not delinked but only spreads. The Low tone of the subjunctive verb *pír* ‘lie’ with HL tone melody is not delinked but only spreads to the subjunctive plural suffix *-ǎA* with no underlying tone (*pír-rǎ* ‘to.lie.1sN’).

In a few nouns and verbs, the second tone reassigns to bound morphemes with underlying tone. In the third singular continuous past form, the Low tone of the HL tone melody delinks and reassigns to the continuous past suffix *-ǎn* with MH tone (*pír-ǎn* ‘lie.3sN’). The initial Mid tone of the continuous suffix assimilates to the preceding Low {M9}.

3.4.2 Mid tone lowering and Low tone raising

There are two significant processes in stems and words—a Mid tone lowering process and a Low tone raising process. In roots or stems with HM tone assigned to

the final syllable, the Mid tone assimilates to a Low tone of a bound morpheme. The rule is symbolized in {M7} where the dash mark represents a morpheme boundary of either an affix or clitic. The rule applies in both noun and verb stems.

{M7} Mid tone lowering
HM-L > HL-L

The plural noun *wáâr-g* ‘insect’ has HM stem tone. The Mid tone becomes Low when the plural copular clitic = \bar{A} with Low tone is attached (*wáâr-g = \bar{a}*).

The infinitive form of the verb *bél* ‘call’ has underlying HM tone. When the third plural morpheme assigns Low tone to the completive suffix attached to this verb, the root Mid tone becomes Low (*bél-dâ*).

In verbs with Low root tone melody, Low tone is raised to Mid when a suffix with Low tone is attached, as symbolized in M8. The process does not occur on verbs with other tone melodies ending in Low tone such as HL or ML tone melodies.

{M8} Verb root L raised to M preceding suffix L
[only in verbs with Low root tone melody]
L-L > M-L

The imperative form of the verb *jèr* ‘forget’ has underlying Low tone melody. When the third plural morpheme assigns Low tone to the completive suffix on the same verb, the Low root tone becomes Mid (*jèr-sâ*).

3.4.3 Suffix High and Mid tone lowering

There is also a lowering process of both High and Mid tone of bound morphemes. A contrast between High and Mid tone is neutralized on bound morphemes following root- or stem-final Low tone. The morphological tone lowering process of {M9} symbolizes the fact that High tone on a bound morpheme becomes Mid when following a root or stem with final Low tone. Further, Mid tone on a bound morpheme assimilates to root or stem-final Low tone. The rule applies in all noun and verb stems. However, the rule does not apply to some clitics such as accompaniment, passives, imperfections, and dative pronouns attached to noun or verb stems.

{M9} Bound morpheme High and Mid tone lowering
L-H > L-M
L-M > L-L

When the copular clitic = \bar{A} attaches to the noun stem *séèn* ‘ruler’ with final Low

tone, the clitic Mid tone becomes Low ($s\acute{e}\hat{e}n = \grave{a}$). When the definite clitic = \acute{A} attaches to the same noun, the clitic High tone is lowered to Mid ($s\acute{e}\hat{e}n = \bar{a}$). However, the Mid tone of the copular clitic = $\bar{A}n$ does not lower when attached to $d\grave{i}i$ ‘rat’ ($d\grave{i}i = \bar{i}n$). Similarly, the Mid tone of the accompaniment clitic = $n\bar{E}$ does not lower when attached to the vowel-final noun stem $\grave{a}ns\grave{a}$ ‘cooking plate’ ($\grave{a}ns\grave{a} = n\bar{e}$).

The infinitive verb $d\bar{s}\grave{a}s$ ‘stand’ has Mid-Low tone melody. In the first singular completive form, Mid tone assigned to the stem-final syllable assimilates to the root-final Low tone ($d\bar{s}\grave{a}s-s\grave{a}$). In the third singular form of the same verb, High tone assigned to the stem-final syllable lowers to Mid tone ($d\bar{s}\grave{a}s-s\bar{s}$). However, when the imperfect clitic = \acute{E} with High is added to the third singular completive form, the High clitic tone does not become Mid ($d\bar{s}\grave{a}s-s = \acute{e}$).

3.4.4 Three tones assigned to a single stem syllable

There are various three-tone contours assigned through morphology to a single syllable, which result in surface tones that differ from the underlying tones. The combinations of underlying tones mostly do not surface in a single syllable in roots. Therefore, the changes resulting in the surface form are analyzed as morphophonological processes rather than processes that occur throughout the language.

As symbolized in {M10}, when the three tones High, Low, High are all assigned to a single stem syllable through morphology, the resultant tone for the syllable is High-Mid-High.

{M10} HLH > HMH

The first singular incompletive verb $p\acute{r}$ ‘lie’ has a HL root tone melody. In the third singular incompletive form when High tone is added to the root tone to mark third person, the three tones High, Low, and High are all assigned to the same syllable and the Low tone surfaces as Mid ($p\acute{r} \acute{r}$).

As symbolized in {M11}, when the three tones Low, High, Low are all assigned to a single stem syllable, the resultant tone for the syllable is Low-Mid-Low. However, the underlying contour surfaces without change in the heavy syllable noun root $d\grave{u}\acute{u}l$ ‘instrument’, as shown in (31) of section 2.4.2.

{M11} LHL > LML

When the third plural past continuous suffix $-\acute{A}n$ with MHL tone is added to the verb $d\bar{s}\grave{a}s$ ‘stand’, and the initial Mid tone of the suffix assimilates to root-final Low tone, the suffix LHL tone then surfaces as LML ($d\bar{s}\grave{a}s-\acute{a}n$ ‘starting.3pN’).

4 Clitics and word structure

In this chapter, we show that various clitics attach to several word categories (4.1), discuss word structure (4.2), and differentiate between the word categories nouns, adjectives, and verbs (4.3).

4.1 Clitics

There are eight grammatically distinct clitics which attach to more than one word category. In addition, there are other clitics which are combinations of clitics, where the morphemes from which they are formed are given in parentheses in table 6 and are explained in the sections to follow. Copular, definite, and relative clause definite clitics can have number distinction, sometimes depending on the word category to which they attach. Dative, accompaniment, locative copular, subordinate, and perfect clitics never have number distinction. The clitics in table 6 are those which attach to consonant-final words. Clitic allomorphs sometimes attach to other word-final segments, as will be discussed in relevant morphology sections. The difference between relative clauses marked and unmarked for definiteness will be discussed in 14.6.

Table 6: Clitics on consonant-final words

	SG	PL
Copular (COP)	= \tilde{A}_{N_2} = \tilde{A}_{PRON_2} --- \tilde{A}_{ADJ}	= \tilde{A}
Definite (DEF)	= \tilde{A}	= \tilde{A}_{N_2} = \tilde{A}_{ADJ}
Relative clause definite (RDM)	= \tilde{E}	= \tilde{E}
Dative (DAT)	= $\tilde{A}n$	= $\tilde{A}n$
Relative clause dative (RDTM)	= $\tilde{E}\tilde{E}n$ (from = $\tilde{E} = \tilde{A}n$)	= $\tilde{E}\tilde{E}n$ (from = $\tilde{E} = \tilde{A}n$)
Locative copular (LCM)	= $\tilde{A}n$ (from $\tilde{i}n/\tilde{e}\tilde{e}n$)	= $\tilde{A}n$ (from $\tilde{e}gg\tilde{a}n$)
Relative clause locative copular (RLCM)	= $\tilde{E}\tilde{E}n$ (from = $\tilde{E} \tilde{i}n/\tilde{e}\tilde{e}n$)	= $\tilde{E}\tilde{E}n$ (from = $\tilde{E} \tilde{e}gg\tilde{a}n$)
Accompaniment (ACM)	= \tilde{E}	= \tilde{E}
Relative clause accompaniment (RDM=ACM)	= $\tilde{E}\tilde{E} = n\tilde{E}$ (from = $\tilde{E} = n\tilde{E}$)	= $\tilde{E}\tilde{E} = n\tilde{E}$ (from = $\tilde{E} = n\tilde{E}$)
Subordinate (SBO)	= \tilde{E}	= \tilde{E}
Relative clause subordinate ‘when’ (RDM=SBO)	= $\tilde{E}\tilde{E} = n\tilde{E}$ (from = $\tilde{E} = n\tilde{E}$)	= $\tilde{E}\tilde{E} = n\tilde{E}$ (from = $\tilde{E} = n\tilde{E}$)
Perfect clitic (PF)	= r	= r

Each clitic is presented below, first in an example clause, and then attached to various word categories. The meaning of each clitic, as well as the section where its

morphology is presented, is also mentioned.

4.1.1 Copular clitic

In answer to questions such as *jīn néé* ‘What is this?’ and various other non-verbal clauses described in 14.6, copular clitics (COP) are attached to nouns, adjectives, or pronouns. Singular and plural copular clauses are shown in (1). See 7.2 and 8.3.1 for a presentation of copular clitic morphology.

- (1a) *féētǎ = n* *àggáár = ā* (b) *ǎ-gg* *sèggār-g = à*
 Feetfa =DEF hunter =COP cow-PL strong-PL = COP
 ‘Feetfa is a hunter.’ ‘Cows are strong.’

The singular copula clitic is =*ā* with Mid tone on nouns, =*à* with Low tone on pronouns, and no marking on adjectives. The plural copula clitic is =*à* on all words.

(2) Copular clitic

	SG	PL	
Noun	<i>àggáár = ā</i>	<i>àggáār-g = à</i>	‘is a hunter’
ADJ	<i>jāā bāṇḍāl</i>	<i>jōgg bāṇḍāl-g = à</i>	‘is a weak person’
1sP	<i>áṇ = à</i>	<i>ónègg = à</i>	‘is mine’

4.1.2 Definite clitic

The definite clitic (DEF) indicates the speaker believes a word is active or known information in the mind of the hearer. See also 7.3 and 8.3.2.

- (3a) *á* *jām* *àggáár = á* (b) *ǎ-gg* *sèggār-g = à* *nāām*
 1sN want hunter = DEF cow-PL strong-PL = DEF eating
 ‘I want the hunter.’ ‘The strong cows are eating.’

The singular definite clitic is =*á* with High tone. The plural definite clitic is =*á* with High tone on nouns and =*à* with Low tone on adjectives. It is =*n* on vowel-final nouns and adjectives.

(4) Definite clitic

	SG	PL	
Noun	<i>àggáár = á</i>	<i>àggáār-g = á</i>	‘the hunter’
ADJ	<i>jāā-n bāṇḍāl = (á)</i>	<i>jōgg-(á) bāṇḍāl-g = à</i>	‘the weak person’
3SP	<i>mōsḍr ínī = n</i>	<i>mōsḍr-èègg ínìgī = n</i>	‘the his horse’

In singular noun phrases with a head noun and adjective modifier, the definite clitic

attaches to the adjective unless it is consonant-final and the noun is vowel-final.

(5) **Definite clitic on singular nouns and adjectives**

Noun-final	ADJ-final	Noun SG	ADJ	DEF	
V = DEF	C = (DEF)	wéé = n	bér = (á)		‘the clean house’
C	V = DEF	kòlèèð	îi = ín		‘the heavy sword’
C	C = DEF	jēn	bánḍāl = á		‘the weak person’
V	V = DEF	bààḍ	fāā = n		‘the old father’

In plural noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective and optionally to the head noun.

(6) **Definite clitic on plural nouns and adjectives**

Noun-final	ADJ-final	Noun SG	ADJ	DEF	
C-PL = (DEF)	C-PL = DEF	wís-ḍg = (ḍ)	bér-g = à		‘the clean houses’
C-PL = (DEF)	C-PL = DEF	kòlèèð-g = (ḍ)	îi-g = ḍ		‘the heavy swords’
C-PL = (DEF)	C-PL = DEF	jḍgg = (ḍ)	bánḍāl-g = à		‘the weak persons’
C-PL = (DEF)	C-PL = DEF	bààw-āāḍ = (á)	fāng = à		‘the old fathers’

4.1.3 Relative clause definite clitic

Relative clauses are marked or unmarked for definiteness just as noun phrases. When the head of the relative clause is known information, the relative clause definite clitic (RDM) is attached to the clause-final word. See also 7.4, 8.3.3, and 14.7.

(7)	á	jām	jāā	ná	sèggār = é
	1sN	want	person	REL	strong = RDM
	‘I want the person who is strong.’				

The singular relative clause clitic is =**É** with High tone and the plural clitic is =**È** with Low tone.

(8) **Definite relative clause clitic**

	SG	PL	
Noun	ná àggáár = é	nà àggáâr-g = è	‘who is a hunter’
ADJ	ná bánḍāl = é	nà bánḍāl-g = è	‘who is weak’
Body part	ná àn wéé	nà àn wísḍ-g	‘who is
locative	ááp = é	ḍḍng = ì	behind the house’
ADV	ná líj-jḍ ḍnḍógg = í	nà líj-jḍ ḍnḍógg = ì	‘who came with force’
Verb	ná ḥāp = é	nà ḥāp = è	‘who files’

4.1.4 Dative clitic

The dative (DAT) has the semantic roles of beneficiary and recipient. See also 7.5 and 8.3.4.

- (9) á gáf jèèm càðr = **ān**
 1sN give something rabbit = DAT
 ‘I give something to a rabbit.’

Singular and plural dative clitics are =*Ān*.

(10) Dative clitic

	SG	PL	
Noun	àggáár = ān	àggáār-g = ān	‘to a hunter’
ADJ	jāā bāñdāl = ān	jōgg bāñdāl-g = ān	‘to a weak person’

4.1.5 Relative clause dative clitic

When the head of the relative clause is an indirect object, the relative clause dative clitic (RDTM) is attached to the clause-final word. See also 8.3.5.

- (11) á gáf jèèm jāā ná sèggār = **éēn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong person
 (lit. the person who is strong).’

The singular relative clause dative clitic is =*ÉĒn* (from the combination of the singular relative clause definite clitic and dative clitic =*É*=*Ān* ‘=RDM.SG=DAT’) with HM tone and the plural is =*ÈĒn* (from =*È*=*Ān* ‘=RDM.PL=DAT’) with Low tone.

(12) Relative clause definite and dative clitic

	SG	PL	
Noun	ná àggáár = éēn	nà àggáār-g = èèn	‘to the . . who is the hunter’
ADJ	ná bāñdāl = éēn	nà bāñdāl-g = èèn	‘to the . . who is the weak’
Body part locative	ná àn wéé ááñ = éēn	nà àn wísō-g óðng = ììn	‘to the . . who remains behind the house’
ADV	ná líj-jó òñdógg = ììn	nà líj-jō òñdógg = ììn	‘to the . . who came with force’

4.1.6 Locative copular clitic

In non-verbal locative clauses, the singular or plural locative copula *îin/éggàn* separates the subject from the predicate. However in fast speech, both singular and plural copulas attach to the subject noun phrase in the form of the clitic =*Ān* (LCM). The singular locative copula *îin/éēn* of (13a) is replaced by the clitic =*Ān* attached to the subject noun in (b). The plural locative copula *éggàn* of (c) is replaced by the same clitic in (d). See also 7.5, 8.3.4, and 14.6.4.

(13) **Locative copular clauses**

- (a) *jāā bāṅḍāl îin wéé bèṅṅ*
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) *jāā bāṅḍāl = ān wéé bèṅṅ*
 person weak=LCM house beside
 ‘a weak person is beside a house.’
- (c) *jōgg bāṅḍāl-g éggàn wéé bèṅṅ*
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (d) *jōgg bāṅḍāl-g = ān wéé bèṅṅ*
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’

The locative copular clitic happens to have the same form as the dative clitic.

(14) **Locative copular clitic (rapid speech form of *îin/éēn*, *éggàn*)**

	SG	PL	
Noun	<i>àggáár = ān</i>	<i>àggáār-g = ān</i>	‘a hunter is’
ADJ	<i>jāā bāṅḍāl = ān</i>	<i>jōgg bāṅḍāl-g = ān</i>	‘a weak person is’

4.1.7 Relative clause locative copular clitics

As in (15a), when the head of a definite relative clause is the subject of a non-verbal locative clause, the relative clause definite clitic =*É* is attached to the final word of the relative clause before the locative copula *îin/éēn*. However, in fast speech as in (b), the singular relative clause locative copular clitic =*ÉĒn* (RLCM) replaces the relative clause definite clitic =*É* and the locative copula *îin/éēn*. Similarly, the plural relative clause locative copular clitic =*ÉĒn* of (d) replaces the relative clause definite clitic =*É* and the particle *éggàn* in (c). See also 8.3.5 and 14.7.

(15) **Relative clause locative copular clauses**

- (a) j̄āā ná bándāl = é **īn** wéé b̄ɛŋɣ
 person REL weak=RDM.SG LCM house beside
 ‘The weak person (lit. person who is weak) is beside a house.’
- (b) j̄āā ná bándāl = **éēn** wéé b̄ɛŋɣ
 person REL weak=RLCM house beside
 ‘The weak person is beside a house.’
- (c) j̄ōgg nà bándāl-g = è **ēggàn** wéé b̄ɛŋɣ
 people REL weak-PL=RDM.PL LCM house beside
 ‘The weak people are beside a house.’
- (d) j̄ōgg nà bándāl-g = **èēn** wéé b̄ɛŋɣ
 people REL weak-PL=RLCM house beside
 ‘the weak people are beside a house.’

The singular relative clause locative copular clitic is =ÉĒn (from =É īn/éēn) with HM tone and the plural is =ÈĒn (from =È ēggàn) with Low tone, which happen to be the same as the relative clause dative clitics.

(16) **Relative clause locative copular clitic**

(rapid speech form of =É īn/éēn, =È ēggàn)

	SG	PL	
Noun	ná àggáár = éēn	nà àggáār-g = èēn	‘the . . who is the hunter is’
ADJ	ná bándāl = éēn	nà bándāl-g = èēn	‘the . . who is weak is’
Body part locative	ná àn wéé áǎn = éēn	nà àn wísō-g óǎŋg = īn	‘the . . who remains behind the house is’
ADV	ná líj-ǎ óndógg = īn	nà líj-ǎ óndógg = īn	‘the . . who came with force is’

4.1.8 Accompaniment clitic

The accompaniment clitic (ACM) is used on noun phrases in adjuncts introduced by the animate preposition é ‘with’ if the noun has the semantic role of accompaniment. See also 7.6 and 8.3.6.

- (17) bāárg-á áǎ-ǎ n è àggáár = **ē**
 Baggara-DEF coming with hunter = ACM
 ‘The Baggara tribe was coming with a hunter.’

Singular and plural accompaniment clitics are =E.

(18) **Accompaniment clitic**

	SG	PL	
Noun	è àggáár = ē	è àggáār-g = ē	‘with a hunter’
ADJ	è jāā bāṅḍāl = ē	è jōgg bāṅḍāl-g = ē	‘with a weak person’
Body part locative	è jāā ná nā wéé ááṅ = ē	è jōgg nā nā wísō-g óòṅg = ī	‘with a person who remains behind a house’
ADV	è jāā ná líj-jó ōṅḍógg = ī	è jōgg nā líj-jó ōṅḍógg = ī	‘with a person who came with force’

4.1.9 Relative clause definite and accompaniment clitic

When the head of the relative clause has an accompaniment role and is introduced by the animate preposition *é* ‘with’, the relative clause definite and accompaniment clitics (RDM=ACM) are attached to the clause-final word. See also 8.3.7.

- (19) bāárg-á áḍ-á n è jāā ná sèggār = **éé = nē**
 Baggara-DEF coming with person REL strong = RDM = ACM
 ‘The Baggara were coming with the strong person
 (lit. the person who is strong).’

The singular relative clause definite and accompaniment clitic is =*ÉÉ = nĒ* (from =*É = nĒ* ‘=RDM.SG=ACM’) and the plural is =*ÈÈ = nĒ* (from =*È = nĒ* ‘=RDM.PL=ACM’), where the relative clause definite clitic vowel is lengthened.

(20) **Relative clause definite and accompaniment clitics**

	SG	PL	
Noun	ná àggáár = éé = nē	nà àggáār-g = èè = nē	‘with the . . . who is the hunter’
ADJ	ná bāṅḍāl = éé = nē	nà bāṅḍāl-g = èè = nē	‘with the . . . who is weak’
Body part locative	ná àn wéé ááṅ = éé = nē	nà àn wísō-g óòṅg = ìì = nī	‘with the . . . who remains behind the house’
ADV	ná líj-jó ōṅḍógg = íí = nī	nà líj-jó ōṅḍógg = ìì = nī	‘with the . . . who came with force’

4.1.10 Subordinate clause-final clitic

In subordinate clauses, such as those beginning with the subordinate conjunction *é* *gārá* ‘when’, the clitic =*É* (SBO) attaches to the clause-final word. The subordinate

Body part	ná àn wéé	nà àn wísō-g	‘When . . the . .
locative	ááṅ = éé = né	óòṅg = ìì = nī	who remains
			behind the house’
ADV	ná líj-jó	nà líj-jō	‘When . . the . . who
	ōndógg = íí = ní	ōndógg = ìì = nī	came with force’

4.1.12 Perfect clitic

The perfect clitic (PF) indicates that a past or present action remains or results in the present or future. See also 10.8.

- (25) ē lā gǒf-i wá, ē gǒù-s-î = r.
 3sN UNC /gǎf/give.INCP-3sAM not 3sN /gǎf/give-COMP-IPF = PF
 ‘He would not give it (money), (since) he had already given.’ (Fand3)

The perfect clitic =r optionally attaches to the verb object or verb of the clause.

(26) Perfect clitics

- Noun á kóm-ḍá jǒg = ó = r ‘in order to completely cut the people’
 Verb á kóm-ḍá = r jǒg = ó ‘in order to completely cut the people’

4.2 Word structure

Before beginning morphology discussion on various word categories, it is important to define how a word boundary is determined and how the terms ‘root’, ‘stem’ and ‘word’ are used in this thesis. The morphemes attached to roots and stems have different functions, different morphophonological alternations, or in other ways are treated as different kinds of morphemes in the language.

Word boundaries are determined by [+ATR] spreading. A word involves all bound morphemes to which [+ATR] quality spreads; with the exception of a few compounds (see footnote 8 in section 2.2.2.2), all vowels of a word have the same [ATR] quality, all being either [+ATR] or all being [-ATR].

A root is the smallest lexical morpheme of a word and can be the entire word. A stem is a root plus an optional suffix and can also be the entire word. A word includes the stem and any optional clitics.

- (27) Stem = root + (suffix)
 Word = stem + (clitic) + (clitic)

All suffixes of the language are a part of the stem and all clitics in the language are outside of the stem, but inside the word. More than one clitic in the same word is possible, but only one suffix is possible in a stem.

Nearly all stems are inflectional, having aspect (COMP, CONT, PF) or mood (IMP, SBJV). On the other hand, clitics are derivational (VN), indicate valency (PAS, PAS.A) or have clausal functions indicating how the word relates to another constituent of the clause (DAT, ACM) or indicates its place in the clause (COP, RDM, SBO).

There are five criteria which can be used to determine whether a bound morpheme is a clitic. The criteria are not all valid for any one clitic. However, none of these criteria are valid for any of the suffixes. Thus, they each individually support the claim that clitics can be grouped differently than suffixes, and how to distinguish the two.

(28) Criteria for determining bound morphemes are clitics

- (a) Attaches to more than one word category
- (b) Attaches to inflectional morphemes
- (c) Attaches to surface-final segments
- (d) Stem tone assignment is the point of departure
- (e) One or more of the morphophonological rules {M1-11} is not applied.

In the previous section of this chapter, it is shown that many of the clitics are attested to attach to more than one word category. In the introduction to noun morphology in 6.1 and the introduction to verb morphology in 9.1, as well as in relevant sections for each morpheme, the other criteria are shown to be valid for at least some clitics. Although several inflectional suffixes cannot be combined with other inflectional suffixes, all clitics can attach to inflectional suffixes. Although suffixes always attach to underlying-final segments of roots, clitics attach to surface-final segments of stems. In noun morphology, it is shown that root tone assignment is the point of departure for stem tone assignment, whereas stem tone assignment is the point of departure for word tone assignment. In verb morphology, although the morphophonological rules {M1-11} always apply to suffixes, it is common for one or more of the rules to not be applied to clitics.

4.3 Comparison of adjectives with nouns and verbs

Nouns and verbs are the two largest word categories in Gaahmg, both of which have significant amounts of morphology. Adjectives (also called qualitative adjectives in this thesis), though less productive, also have a significant amount of morphology. Before discussing the morphology of each, it is important to verify that each is a lexical category in its own right.

Although adjectives commonly function as modifiers, they can also be used nominally or verbally. However, they are not used in some of the syntactic constructions of either nouns or verbs, and there are some differences in the morphology when used as either category. Thus, they can be analyzed as a distinct lexical category from either nouns or verbs.

Adjectives such as *kāyáár* ‘beautiful’ agree in number with the head noun of the noun phrase, often marking plural number with the same suffix *-gg* as in nouns.

(29a) á nām ɔ̄ɔ̄ káyáár
 1sN want wife beautiful
 ‘I want a beautiful wife.’

(b) á nām ɔ̄ɔ̄-gg káyáár-g
 1sN want wives-PL beautiful-PL
 ‘I want beautiful wives.’

Adjectives are attested to fill the same slot in a clause as a noun when they are predicates of non-verbal clauses (with either a separate or bound copula) or follow a relativizer. However, they are generally not attested (NA) as subjects, objects, or objects of prepositions, although adjectives can modify the head noun of a noun phrase in each of these constructions.

(30) Noun ‘hunter’ and adjective ‘beautiful’ syntactic comparison

	N	ADJ	ADJ of noun phrase
Predicate separate copula	jēn ɬā àggáár ‘The person is a hunter.’	jēn ɬā káyáár ‘. . . is beautiful.’	jēn ɬā kàmàlògg káyáár ‘. . . is a beautiful girl.’
Predicate bound copula	jēn àggáár = ā ‘The person is a hunter.’	jēn káyáár ‘. . . is beautiful.’	jēn kàmàlògg káyáár ‘. . . is a beautiful girl.’
Following REL	á nām jēn ná àggáár = é ‘I want the person who is a hunter.’	á nām jēn ná káyáár = é ‘. . . is beautiful.’	á nām jēn ná kàmàlògg káyáár = é ‘. . . is a beautiful girl.’
Subject	àgáár wēḍán ‘The hunter is good.’	(NA) ‘The beauty is . . .’	kàmàlògg káyáár wēḍán ‘beautiful girl is . . .’
Object	á nām àggáará ‘I want the hunter.’	(NA) ‘. . . the beauty.’	á nām kàmàlògg káyáár = á ‘. . . beautiful girl.’
Object of PP	ē léén è àggáár = ē ‘She comes with a hunter.’	(NA) ‘. . . with the beauty.’	ē léén è kàmàlògg káyáár = ē ‘. . . with a beautiful girl.’

A few adjectives such as *wēḍán* ‘good’ have a different form (*wāēḍá* ‘goodness, joy’) when used as a subject, object or object of a preposition. The word used in these constructions is analyzed categorically as a noun, having different syntactic functions than adjectives.

(31) Noun *wáēdǎ* ‘goodness, joy’ and adjective *wēdǎn* ‘good’ syntactic comparison

Predicate	ǐsǐ = n wēdǎn ‘The cow is good.’	Object	á nām wáēdǎ ‘I want joy.’
Subject	wáēdǎ wēdǎn ‘Joy is good.’	Object of PP	ē áǰ ē wáēdǎ ‘He became with joy.’ (is pleased)’

There are three differences in the stem morphology of nouns and adjectives with final consonants. As shown in (32), singular nouns attach the copular clitic =*ǎ*, whereas singular adjectives do not attach any clitic. Plural nouns attach the definite clitic =*ǎ* with High tone, whereas plural adjectives attach the definite clitic =*ǎ* with Low tone.

(32) Noun ‘hunter’ and adjective ‘beautiful’ morphology comparison

	N.SG	N.PL		ADJ.SG	ADJ.PL	
	àggáár	àggáár-g		kāyáár	kāyáár-g	
COP	= <i>ǎ</i> /= <i>ǎ</i>	àggáár= <i>ǎ</i>	àggáár-g= <i>ǎ</i>	--/= <i>ǎ</i>	kāyáár	kāyáár-g= <i>ǎ</i>
DEF	= <i>ǎ</i> /= <i>ǎ</i>	àggáár= <i>ǎ</i>	àggáár-g= <i>ǎ</i>	= <i>ǎ</i> /= <i>ǎ</i>	kāyáár= <i>ǎ</i>	kāyáár-g= <i>ǎ</i>
LCM/	= <i>ǎ</i> n/	àggáár	àggáár-g	= <i>ǎ</i> n/	kāyáár	kāyáár-g
DAT	= <i>ǎ</i> n	= <i>ǎ</i> n	= <i>ǎ</i> n	= <i>ǎ</i> n	= <i>ǎ</i> n	= <i>ǎ</i> n
ACM	= <i>ǎ</i> /= <i>ǎ</i>	àggáár= <i>ǎ</i>	àggáár-g= <i>ǎ</i>	= <i>ǎ</i> /= <i>ǎ</i>	kāyáár= <i>ǎ</i>	kāyáár-g= <i>ǎ</i>
RDM	= <i>ǎ</i> /= <i>ǎ</i>	àggáár= <i>ǎ</i>	àggáár-g= <i>ǎ</i>	= <i>ǎ</i> /= <i>ǎ</i>	kāyáár= <i>ǎ</i>	kāyáár-g= <i>ǎ</i>
SBO	= <i>ǎ</i> /= <i>ǎ</i>	àggáár= <i>ǎ</i>	àggáár-g= <i>ǎ</i>	= <i>ǎ</i> /= <i>ǎ</i>	kāyáár= <i>ǎ</i>	kāyáár-g= <i>ǎ</i>

In addition, the definite clitic =*Vn* with no underlying tone attaches to monosyllabic vowel-final nouns (*máǎ*, *máǎ*. =*ǎ*n ‘house=DEF’), whereas the definite clitic =*ǎ**n* with High tone attaches to monosyllabic vowel-final adjectives (*ǎ*, *ǎ*. =*ǎ*n ‘heavy=DEF’). The differences in syntactic function and the differences in morphology, support the claim of there being both categorical nouns and adjectives.

A few adjectives may be derived from nouns with the suffix *-i* as seen from the data of (33) taken from the *Gaahmg-English Dictionary* by Madal (2004). The derivation from one category to the other also supports the claim of both categories.

(33) Adjectives derived from nouns (Madal, 2004)

N		ADJ	
ǎǎr ¹⁷	‘anger’	ǎǎr-i	‘sorrowful, angry’
ǎǎǎ	‘year’	ǎǎǎ-i	‘annual’
kùsùr	‘authority’	kusuur-i	‘forceful’

Adjectives can also be used as verbs, often with the same syntax and morphology as

¹⁷ No tone marking was included with the data from the mentioned source.

verbs. Adjectives are attested to fill the same slot in a clause as verbs in the constructions of (34). Many adjectives such as *kāyáár* ‘beautiful’ have the same morphology as verbs for completive and continuous suffixes.

(34) **Verb ‘chop’ and adjective ‘beautiful’ syntax comparison**

	V	ADJ
INF	jēn ɖɔ̀ɔ̀s-s ē kóm ‘The person begins to chop.’	jēn ɖɔ̀ɔ̀s-s ē kāyáár ‘. . . to be beautiful.’
INCP	jēn kóm ‘The person chops.’	jēn kāyáár ‘. . . is beautiful.’
COMP	jēn kóm- s ‘The person chopped.’	jēn kāyáár- sá ‘. . . was beautiful.’
CONT.N	jēn kóm- án ‘The person was chopping.’	jēn kāyáár- án ‘. . . was beautiful.’
Following	á nām jēn ná kóm = é	á nām jēn ná kāyáár = é
REL	‘I want the person who chops.’	‘. . . is beautiful.’

However, in verb paradigms such as the incomplete forms of (35), the long forms of subject pronouns precede the adjectival verb instead of short subject pronouns as in true verbs. The plural adjective suffix *-gg* and copular clitic *=A* attach to adjectival verbs of plural persons, whereas these bound morphemes are not attached to any true verb forms.

(35) **Incomplete paradigms of active verb and adjectival verb compared**

(a)	‘___ chop, cut’	(b)	‘___ am/are/is beautiful’
	á kóm 1sN	āān kāyáár 1sN	
	ó, ú = kúm 2sN	ōōn kāyáār 2sN	
	ē kóm 3sN	ēēn kāyáár 3sN	
	āgg kóm 1pN	āggá kāyáár-g = ā 1pN	
	ōgg, ūg = kúm 2pN	ōggó kāyáár-g = ō 2pN	
	ēggà kóm 3pN	ēggà kāyáár-g = à 3pN	

The adjectival verb *kāyáár* of (35) has subject tone inflection (final Mid for second person, final High for third singular, and final Low for third plural) and [+ATR] second person forms, as do true verbs. However, in some adjectives used as verbs, person inflection is not as regular as the adjectival verb paradigm in (35). Second plural forms of some adjectival verbs have Low final tone instead of Mid (*kóófār*, *kúúfār-g* = ð ‘thin.INCP-2pN=COP’) and second person forms of some adjectival verbs have [-ATR] quality instead of [+ATR] (*bánḍāl*, *bánḍāl-g* = ā ‘weak.INCP-2pN=COP’). These features mark adjectives as being different than true verbs.

Since adjectives have some differences in syntax and morphology compared to both nouns and verbs, they are analyzed as a separate category. Adjective clitic morphology similar to that of noun morphology is presented in 8.3, whereas

adjective morphology similar to verb morphology is presented in 10.11.

In the following chapters, word categories are discussed one-by-one. For each, we first discuss the function followed by the forms of morphemes attached to roots or stems. Because possessive pronouns are important for the discussion on nouns and verbs, pronouns in general are discussed first, followed by nouns, adjectives, verbs, prepositions, locatives, and adverbs. Each of these is a lexical category, as are conjunctions discussed in 15.2.

5 Pronouns

The pronoun system in Gaahmg distinguishes three persons, two numbers (singular and plural), and six cases (possessive, subject, object, dative, reflexive, prepositional). There is no dual, no gender distinction, no inclusive/exclusive distinction, and no logophoric distinction. As expected in an SVO language, subject pronouns are pre-verbal and object and dative pronouns are post-verbal. Possessive pronouns are pre-nominal for inalienable nouns and post-nominal for alienable nouns. Prepositional pronouns have the prepositional marker prefix *ɔ̄-* and reflexive pronouns make use of the possessed noun ‘body’.

There are two distinct ways that pronouns affect verbs through [ATR] quality: second person subject morphemes require verb forms to have [+ATR] vowel quality as discussed in 5.3, and dative suffixed pronouns spread [+ATR] vowel quality leftward onto the verb root {M3}, as discussed in 5.5.

The six types of pronouns are each discussed in their own section, but first, an explanation is needed for the vowel-person correspondence in all pronouns. Interrogative pronouns are not discussed in this chapter, but in 15.3 in the chapter on sentence level syntax.

5.1 Person and number markers

Pronouns in Gaahmg, regardless of case or number, use vowel features to represent the person referred to. Depending on the type of pronoun, the vowel may be either [+ATR] or unspecified for [ATR], and the three persons coincide with the language's three vowel harmony pairs as shown in (1): [+back, -round] vowels represent first person, [+round] vowels represent second person, and [-back] vowels represent third person. Pronouns are marked for plural number agreement with the velar geminate segment *-gg-*.

(1) **Person marker vowel pairs in pronouns**

Vowel features	Vowel pairs	Person indicated
[+back, -round]	a, ɔ̄	1 st person
[+back, +round]	ɔ, u	2 nd person
[-back, -round]	ɛ, i	3 rd person

The abbreviations used for pronouns are as follows in order of appearance: 1, 2, or 3 refers to person; s or p refers to singular or plural person number; P, N, A, D, R, O refers to possessive, subject (or nominative), object (or accusative), dative, reflexive, or prepositional case (object of a preposition); and in possessive pronouns, final s or p refers to singular or plural noun agreement. For example, the pronoun *máá éðn(è)* ‘my (1sPs) house’ indicates the first person singular possessive pronoun agreeing

with a singular noun, and the pronoun *máàgg ònàgg(à)* ‘my (1sPp) houses’ indicates the first person singular possessive pronoun agreeing with a plural noun. For reference, the list of table 7 presents the most basic pronoun forms of this chapter.

Table 7: Basic pronoun forms

Infinitive	Possessive (body parts) (P)	Long subject (N)	Short Subject (N)	Subject future (N)	Object (A)	Dative (D)	Reflexive (R)	Prepositional (O)	
ā	ā	āān	á	ā	a	-ān -ān	āān	-āán(á)	1s
ō	ō	ōōn	ó ó=	ō ō=	-O	-ūn -ūn	ūūn	-óón(ó)	2s
ē	ē	ēēn	ē	ē	-E -E	-īn -īn	īīn	-ēēn(á)	3s
à(gg)	āgg	āggá	āgg	āggá	aaggá āāggá	-āggón -āggōn	ààn-g	-āggá	1p
ò(gg)	ōgg ūgg	ōggó	ōgg ōgg=	ōggó ōggó=	-OOggÓ -ÓÓggÓ	-ūggún -ūggūn	òòn-g	-ōggó	2p
è(gg)	ēgg	ēggà	(ēgg)	ēggà	-EEggÀ -ÉÉggÀ	-īggàn -īggàn	ììn-g	-ēggè	3p

5.2 Possessive pronouns

There are two sets of possessive pronouns, one used with inalienable nouns—body parts and kinship terms—the other with alienable nouns. The two sets have different syntax. The inalienable set precedes the noun, the alienable set follows it. The examples of (2-4) demonstrate the order of possessors and possessed nouns.

(2) Pre-nominal possessive pronouns: body parts

- (a) *nām* **ūgg** **nàlg**
 break 2pPp necks
 ‘They will break your necks.’ (Thng23)

- (b) ānēndá T̄él ē kúnd=ú¹⁸ ē áḍ ē wáēḍá
 then God 3sPs heart=DEF 3sN becomes with joy
 ‘Then, God will be pleased (lit. Then God’s his heart, it becomes with joy).’
 (Womn17)
- (3) **Pre-nominal possessive pronouns: kinship terms**
- (a) ò **ś** **yāā** nāā néé lèèn-án ḍūmùùn ḍ-ūūḡ ṭà
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘Your mother’s sister (lit. your girl mother) was coming to you there.’
 (Assa3-4)
- (b) òḍḍḍgg, àḍḍà é kōr ḍ-ḡḡḍ **ḡḍ-ḡḡ=ḡ**
 women live GP word **PP-2pPp** **husband-PL=DEF**
 ‘Women, if you live only by your husbands’ orders.’ (Womn21)
- (4) **Post-nominal possessive pronouns**
- (a) **mōsōr** **īnī** bēl àsūūr.
 horse 3sPs named Asuur
 ‘His horse was called Asuur.’ (Minj10)
- (b) bì fīḡḍḍ **kōr** **ḡḡn** ní mā māḡ!
 let hear word 1sPs this very carefully
 ‘Listen to my words very carefully!’ (Womn3)

5.2.1 Possession of alienable nouns

Possessive pronouns of alienable nouns are given in (5). Alienable possessive pronouns agree with the noun they follow in both singular and plural number. The singular marker *-n-* is only found in alienable possessive pronouns and in long subject pronouns (see 5.3), whereas the plural marker *-gg-* is used in all plural pronouns. The plural person pronouns are distinguished from the singular person

(5) **Possessive paradigm for alienable noun *māā* / *māāgg* ‘house’**

	Singular person pronouns			Plural person pronouns		
Noun SG	māā	ḡḡn(=è)	1sPs	māā	ḡyḡn(=è)	1pPs
	māā	ūùn(=ù)	2sPs	māā	ūyùn(=ù)	2pPs
	māā	īnī(=n)	3sPs	māā	īyḡnī(=n)	3pPs
Noun PL	māā-gg	ḡnḡgg(=è) ¹⁹	1sPp	māā-gg	ḡyḡgg(=è)	1pPp
	māā-gg	ūḡḡ(=ù)	2sPp	māā-gg	ūyḡgg(=ù)	2pPp
	māā-gg	īnīḡ(=n)	3sPp	māā-gg	īyḡḡḡ(=n)	3pPp

¹⁸ The construction of (2b) has both a noun (*T̄él* ‘God’) and pronoun (*ē* ‘his’) possessor of the body part *kúndú* ‘heart’. See 14.9.3 for nominal possession of body parts.

¹⁹ Or *ḡḡḡ*

pronouns with the segment *y*, and initial tone of singular person possessives is High, whereas initial tone of plural person possessives is Mid. Third person possessives have a final vowel with Mid tone. Vowels and consonants in parentheses are copular clitics, attached when the possessive pronouns are comments of a stative clause ('The cow is mine'). They are discussed further in section 14.6.1.

5.2.2 Possession of inalienable nouns: body parts

Possessive pronouns for body parts are given in (6). In Gaahmg, body parts are inalienable nouns with possession formed by an independent possessor pronoun preceding the possessed noun. In (6), the body part 'cheek' is listed in singular and plural forms with all possible possessive pronouns. The dashed line represents constructions that do not exist. The [+ATR] value of the plural suffix *-əgg* spreads leftward onto the noun root in accordance with {M3} of 3.2, but not onto the independent possessive pronoun preceding the noun. The plural person pronouns are distinguished from the singular person pronouns by the plural marker *gg*. Second person possessives of plural body parts can be [+ or -ATR]. The tone of all possessive pronouns of body part nouns is Mid.

(6) **Possessive paradigm for inalienable body part *fānɗ* / *fānɗəgg* 'cheek'**

	Singular person pronouns			Plural person pronouns		
Noun SG	<i>ā</i>	<i>fānɗ</i>	1sPs	---		1pPs
	<i>ɔ̄</i>	<i>fānɗ</i>	2sPs	---		2pPs
	<i>ē</i>	<i>fānɗ</i>	3sPs	---		3pPs
Noun PL	<i>ā</i>	<i>fānɗ-əgg</i>	1sPp	<i>āgg</i>	<i>fānɗ-əgg</i>	1pPp
	<i>ɔ̄, ū</i>	<i>fānɗ-əgg</i>	2sPp	<i>ɔ̄gg, ūgg</i>	<i>fānɗ-əgg</i>	2pPp
	<i>ē</i>	<i>fānɗ-əgg</i>	3sPp	<i>ēgg</i>	<i>fānɗ-əgg</i>	3pPp

In addition, the nouns possessed by plural persons take a different tone pattern than that of nouns possessed by singular persons. As is discussed further in 6.4, the plural person morpheme requires LM tone pattern to surface for possessed body part nouns.

5.2.3 Possession of inalienable nouns: kinship terms

The possessive pronouns of kinship terms are identical to those of body part nouns, except for tone. Whereas all possessive pronouns of body part nouns have Mid tone, first and second singular person pronouns of kinship terms have High tone. And in contrast to body parts, the tone of kinship terms possessed by plural persons is the same as those possessed by singular persons.

(7) **Possessive paradigm for inalienable kinship term*****ṭááðà / ṭááðàḍ* ‘grandmother’**

	Singular person pronouns			Plural person pronouns		
Noun SG	á	ṭááðà	1sPs	āgg	ṭááðà	1pPs
	ó	ṭááðà	2sPs	ōgg	ṭááðà	2pPs
	ē	ṭááðà	3sPs	ēgg	ṭááðà	3pPs
Noun PL	á	ṭááðàḍ	1sPp	āgg	ṭááðàḍ	1pPp
	ó, ú	ṭááðàḍ	2sPp	ōgg, ūgg	ṭááðàḍ	2pPp
	ē	ṭááðàḍ	3sPp	ēgg	ṭááðàḍ	3pPp

5.2.4 Inherently possessed body part nouns

For most inalienable nouns, possessive pronouns are separate from the nouns they precede, evidenced by a lack of [+ATR] spreading from roots to the preceding pronoun {M3}. However, there is a special set of body parts in which the possessive pronoun is attached to the noun. These body part nouns do not occur without being possessed by someone, and can be referred to as ‘inherently possessed’ body parts (Payne 1997:105-106). Unlike other body part nouns, speakers cannot say ‘eye’, ‘hand’, ‘head’, etc. without also including the possessor along with the noun (i.e. ‘his eye’, ‘my eye’, ‘your eye’, etc.).

An exhaustive list of inherently possessed body parts is shown in (8). Those that are used as locatives, as described in chapter 11, have asterisks next to them. The root contains only a consonant, except for (g) which has no root segment. A possessive person marker long vowel *VV-* is prefixed to the root in all singular forms as well as in plural forms of all but the body part nouns of (a-b). In the plural forms of (a-b), a person marker short vowel *V-* is prefixed to the root. All vowels of each possessed body part noun refer to the person possessing it, corresponding with the three vowel pairs of the language: *a* or *ə* for first person, *o* or *u* for second person, and *e* or *i* for third person. The [+ATR] quality of the plural suffixes *-⁺gg* or *-^Vgg* spreads leftward onto the noun root {M3}. Further, the vowel of the suffix is underlyingly unspecified for any other feature, and takes the features of the person morpheme—*a*, *u*, or *i*, depending on the person possessing the body part. The body parts of (f-g) have both a singular and plural suffix.

(8) **Possessive paradigms of ‘inherently possessed’ body part nouns**

	Root	N SG, SG person	N PL, SG person	N PL, PL person				
(a)	/ḍ/	āā-ḍ	1sPs	ó-ḍ-ōgg	1sPp	ò-ḍ-ōgg	1pPp	‘eye’
		ōō-ḍ	2sPs	ú-ḍ-ūgg	2sPp	ù-ḍ-ūgg	2pPp	
		ēē-ḍ	3sPs	í-ḍ-īgg	3sPp	ì-ḍ-īgg	3pPp	
(b)	/s/	áá-s	1sPs	ó-s-ōgg	1sPp	ò-s-ōgg	1pPp	‘hand’
		óó-s	2sPs	ú-s-ūgg	2sPp	ù-s-ūgg	2pPp	
		ēē-s	3sPs	í-s-īgg	3sPp	ì-s-īgg	3pPp	

(c)	/l/	āā-l	1sPs	àà-l-g	1pPp	'head'*
		ṣṣ-l	2sPs	ùù-l-g	2pPp	
		ēē-l	3sPs	ìì-l-g	3pPp	
(d)	/ɲ/	āā-ɲ	1sPs	àà-ɲ-g	1pPp	'back'*
		ṣṣ-ɲ	2sPs	ùù-ɲ-g	2pPp	
		ēē-ɲ	3sPs	ìì-ɲ-g	3pPp	
(e)	/ŋ/	āā-ŋ	1sPs	àà-ŋ-g	1pPp	'body'*
		ṣṣ-ŋ	2sPs	ùù-ŋ-g	2pPp	
		ēē-ŋ	3sPs	ìì-ŋ-g	3pPp	
(f)	/l/	āā-l-g	1sPs	àà-l-g	1pPp	'stomach'*
		ṣṣ-l-g	2sPs	ùù-l-g	2pPp	
		ēē-l-g	3sPs	ìì-l-g	3pPp	
(g)	//	āā-gg	1sPs	àà-gg	1pPp	'mouth'
		ṣṣ-gg	2sPs	ùù-gg	2pPp	
		ēē-gg	3sPs	ìì-gg	3pPp	

Although all the body part nouns of (8) have an initial vowel, they are not considered a special set of nouns because of the initial vowel, but because of the possessive pronoun being a part of the noun and because of the vowel harmony changes for the entire possessive construction. There are two attested body part nouns which have a vowel-initial root but for which the possessive pronoun is not a part of the noun and for which there is no change in vowel harmony: *ā ààmāṣ* 'my liver', *āgg ààmāṣ-gg* 'our livers'; *ā il* 'my horn', *ā il-ààgg* 'my horns', *āgg il-āāgg* 'our horns'.

The root tone of the nouns in (8) is Mid with the exception of (b) which has HL tone. The nouns possessed by plural persons all have L(M) tone. The plural nouns 'eyes' and 'hands' (a-b), possessed by singular persons, have HM tone melody.

5.3 Subject pronouns

Subject pronouns precede the verb and have the semantic roles of agent or experiencer, except in passive clauses when they have the roles of patient or theme. They are independent of the verb and are most often realized in short form. Long, short, future and infinitive subject pronouns for each of three persons, singular and plural, are listed in (9). Future tense is marked on the subject pronoun by tone difference from non-future subject pronouns. A separate set of pronouns with differing tone precedes non-clause-initial infinitive verbs. As will be discussed shortly, second person pronouns of finite verbs are optionally clitics which attach to verbs.

(9) **Subject pronouns**

Long	Short (non-future)	Future	Infinitive	
āān	á	ā	ā	1sN
āān	ó, ó=	ō, ō=	ō	2sN
ēēn	(ē)	é	ē	3sN
āggá	āgg	āggá	à(gg)	1pN
ōggó	ōgg, ōgg=	ōggó, ōggó=	ò(gg)	2pN
ēggà	(ēgg)	ēggà	è(gg)	3pN

Long subject pronouns are most common in nominal clauses such as in (10). They are rare otherwise.

(10) **Long subject pronouns**

(a) á bēè “wá, **āān** ūḡúūr = ú wá.”
 1sN said no 1sN Arab=DEF not
 ‘I replied, “No, I am not an Arab.”’ (Jooj6)

(b) mān ná ón = í **ēēn** t̄ù wá
 one which bad = REL it.is true not
 ‘Nothing bad will happen
 (lit. the one thing which is bad is not there).’ (Fand23)

Sometimes, the short subject pronouns co-occur with a long subject pronoun as in (11) for added emphasis to the subject.

(11) **āān** á bīn d̄í, “ò **ōōn** ú = ḡs-sò ḡí d̄í t̄è = ā?”
 1sN 1sN said also and 2sN 2sN = did what also here = DEF
 ‘I myself also asked him, “And you, what are you doing here?”’ (Jooj8)

Third person short subject pronouns occur along with noun subjects such as in (12) to indicate a switch in reference or to give emphasis to the subject.

(12) ḡēn **ē** bīl = ì d̄-ē kúnd̄
 person 3sN shot = him PP-3sP chest
 ‘A person shot him in his chest.’ (Fand30)

In narratives, the short pronouns are commonly used alone to reference the same subject as in the previous clause. Sometimes third singular person subject pronouns are used to reference third plural person with the same subject as the previous clause. Although not that frequent, third person subject pronouns can be dropped. In such instances, the zero pronoun reference is normally recoverable from context. The tone of the verb form distinguishes third singular and plural persons, as described in section 9.8.

In (13), short subject pronouns precede a [-ATR] verb root, and in (14) precede a [+ATR] verb root. First and third subject pronouns are always [-ATR] regardless of the vowel quality of the verb root.

(13) **Paradigm of short subject pronouns**

on continuous non-past verb *kóm-ân* ‘cut, chop’

á	kóm-ân	1sN	āgg	kóm-ân	1pN
ó	kúm-ân, ú = kúm-ân	2sN	ōgg	kúm-ân, ūg = kúm-ân	2pN
ē	kóm-ân	3sN	ēgg	kóm-ân ²⁰	3pN

In second person forms of finite verbs, the (root) vowel is always [+ATR] regardless of the vowel quality of the verb root. Verb roots as in (13) that are otherwise [-ATR] become [+ATR] in the second person verb forms. In the verb of (13), the vowel that surfaces as *ɔ* in other persons becomes *u* in the second person; the vowel that surfaces as *a* in other persons becomes *ə* in the second person.

Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel. Those which surface as [-ATR] are analyzed as separate from the verb. Those which surface as [+ATR] are analyzed as clitics attached to the verb, becoming [+ATR] through leftward spreading from the [+ATR] second person verb form {M3}.

(14) **Paradigm of short subject pronouns on completive verb *bilḍə* ‘hit’**

á	bilḍə	1sN	āgg	bilḍə	1pN
ó	bilḍə, ú = bilḍə	2sN	ōgg	bilḍə, ūg = bilḍə	2pN
ē	bilḍə	3sN	ēgg	bilḍə	3pN

First and third subject pronouns are independent, even though they are short, evidenced by the fact that [+ATR] quality does not spread leftward to the pronouns from the [+ATR] verb form in the paradigm of (14) as it does in second person forms {M3}. Example (6) demonstrated how [+ATR] quality does not spread onto independent possessive pronouns, either.

Other support for the short first and third subject pronouns not being prefixes or clitics is seen in (15), where leftward [+ATR] spreading from the suffixed dative pronoun in (b) does not spread onto the subject pronoun. Since [+ATR] quality spreads without limit within the word {M3}, the preceding pronoun is analyzed as being separate. This example of a dative clitic will be discussed further in section

²⁰ As discussed in 9.1, singular and plural third person subjects are distinguished by tone on the verb itself as seen in (13) of this section where first and second person verb forms have final Mid tone, the third singular form has final High tone, and the third plural form has final Low tone. In (14), the final Mid tone on first and second verb forms assimilates to the root Low tone {M9} and the final High tone on the third singular form is lowered to Mid following Low root tone {M9}.

5.5.

- (15a) á gàðsà ũnũ míí (b) á gàùs=ũ míí
 1sN gave 2sD chicken 1sN gave=2sD chicken
 ‘I gave you a chicken.’ ‘I gave you a chicken.’

As will be shown in 9.2, infinitive verb forms do not inflect for person, neither in tone nor in [ATR] quality, and subject pronouns are never attached to such verbs. Third person agents (or experiencers) can also follow the verb in prepositional phrases and in genitive case, and are discussed in 10.2 and 14.5.1.

5.4 Object pronouns

Second and third person object pronouns are suffixed to verbs as shown by the examples of (16). They have the roles of patient, theme, or experiencer.

(16) Object pronoun clitics

- (a) ē lā gǎf=ì wá
 3sN UNC /gǎf/give.INCP=3sAM not
 ‘He would not give it.’ (Fand3)
- (b) é dǎj-j āaggá é mīīd-ág fǒrǒj wá bə=ī
 3sN /dǎj/stone-INF 1pA by stone-PL few not oh=SBO
 ‘When it pelted us with a lot of stones, . . .’ (Thng20)
- (c) ē mār-ən=īggə dūmùùn é gǒr
 3pN /mār/sold.CAUS-CONT=3pAM towards to clan.name
 ‘. . . to sell to them far away past the Goor clan.’ (Minj3)

Unlike dative pronouns, second and third object pronouns never occur independently, but only as bound morphemes to verb stems. Further, a noun object cannot occur along with an object pronoun. Examples (17b) and (d) are ungrammatical.

(17) Object pronoun examples

- (a) jēn gàð-sā mīī=n (b) *jēn gàð-sā ē(ēn)
 person give-COMP goat=DEF person give-COMP 3sA
 ‘The person gave the goat.’ ‘The person gave it (goat).’
- (c) jēn gǎū-s=ì (d) *jēn gǎū-s=ì mīī=n
 person give-COMP= 3sAM person give-COMP= goat=DEF
 3sAM 3sAM
 ‘The person gave it (goat).’ ‘The person gave it (goat).’

Second and third person unmarked object pronouns take the [ATR] quality of the stem. First person object pronouns are analyzed as separate morphemes since they remain [-ATR] regardless of the quality of the root to which they follow. Most objects have more than one tonal allomorph for different subject person verbs to which they attach. Tone of object pronouns is discussed further in 10.4.2.

(18) **Unmarked object pronouns**

Singular person pronouns		Plural person pronouns	
a	1sA	aaggá, āāggá	1pA
=O	2sA	=OOggÓ, =ÓŌggÓ	2pA
=E, =Ē	3sA	=EEggÀ, =ÉĒggÀ	3pA

There are two types of third person object pronouns, although the exact distinction in function is not clear. For lack of better terms, they are called ‘marked (AM)’ and ‘unmarked (A)’ object pronouns in this thesis in accordance with their distinction in vowel quality. The unmarked third person pronouns of (18) are unspecified for [ATR], the same as first and second person object pronouns, and the marked third person pronouns of (19) are [+ATR]. As with unmarked object pronouns, the marked pronouns have more than one tonal allomorph for different subject person verbs to which they attach. These are also further discussed in 10.4.2.

(19) **Marked third person object pronouns**

Singular person pronouns		Plural person pronouns	
=i, =ì, =îggì	3sAM	=iiggò, =ìiggò, =îggò	3pAM

The marked and unmarked object pronouns are both used to indicate patients, as shown in (20).

(20) **Unmarked object**

(b)	jēn	bèl-ḍ = ē
	person	beat-COMP = 3SA
	‘The person beat it (goat).’	

Marked object

(c)	jēn	bīl-ḍ = ì
	person	beat-COMP = 3SAM
	‘The person beat it (goat).’	

However, the marked and unmarked third person object pronouns can be used to distinguish types of subordinate clauses introducing the referent to which the third object pronoun refers. In (20a), the unmarked [-ATR] object pronoun attached to *wár-s = ē* ‘take-COMP=3sA’ refers to the noun *páré = n* ‘bag=DEF’ introduced in the subordinate ‘if’ clause, whereas in (b) the marked [+ATR] object pronoun refers to a noun introduced by the subordinate conjunction *é gārā* ‘when’. In 10.7, the verbs of these subordinate clauses will be shown to take different subordinate clitics and are grammatically distinct.

(20) **Third singular marked and unmarked object pronouns**

- (a) $j\ddot{a}\ddot{a} = n$ $\bar{\epsilon}$ $\eta\ddot{a}\eta\text{-s} = \bar{\epsilon}$ $p\acute{a}r\acute{e} = n = \acute{e}$, \acute{a} $l\acute{e}\bar{\epsilon}$ $w\acute{a}r\text{-s} = \bar{\epsilon}$
 person 3sN file-COMP bag = DEF 1sN come. take-COMP
 = DEF = SBO2 = SBO INCP = 3sA
 ‘If the person filed the leather bag, I will come take it.’
- (b) \acute{e} $g\acute{a}r\acute{a}$ $j\ddot{a}\ddot{a} = n$ $\eta\ddot{a}\eta\text{-s} = \bar{i}$ $p\acute{a}r\acute{e} = n = \acute{e}$, \acute{a} $l\acute{e}\bar{\epsilon}$ $w\acute{a}r = \bar{i}$
 (GP) person / $\eta\ddot{a}\eta$ /file-COMP bag = DEF 1sN come. take.INCP
 when = DEF = SBO1 = SBO INCP = 3sAM
 ‘When the person has filed/sanded the bag, I will come take it.’

5.5 Dative pronouns

The dative pronouns have the semantic roles of beneficiary or recipient as seen in the examples of (21)

(21) **Dative pronoun clitics**

- (a) \acute{a} $b\bar{i} = \mathbf{\bar{i}gg\bar{a}n}$ “wá!”
 1sN / $b\bar{e}\bar{e}$ /tell.INF = 3pD no
 ‘I told them “No!”’ (Thng21-22)
- (b) $\bar{i}gg = \acute{o}$ $\bar{\epsilon}$ $m\bar{a}l = \mathbf{\bar{i}n\bar{o}}$ $f\bar{a}n$ $\bar{t}\acute{a}d$
 milk = DEF 3sN / $m\bar{a}l$ /gather.INCP = 3sD on down
 ‘Milk accumulated for him underneath.’ (Fand24)
- (c) $j\bar{o}gg$ $g\bar{o}\bar{o}r = \acute{o}$ $b\bar{a}$ $\acute{a}s\text{-s} = \mathbf{\bar{a}gg\bar{a}n}$ $j\bar{e}gg$ $\acute{a}n\text{-g} = \bar{i}$
 people Goor = DEF oh / $\acute{a}\bar{d}$ /become-COMP = 1pD things bad-PL = RDM
 ‘The Goor tribe became our enemies (lit. to us bad things).’ (Minj6)

Dative pronouns are normally suffixed to verbs, but in slow speech are separate and immediately follow the verb. As will be discussed in 10.5.2, there are tonal allomorphs for different subject person verbs to which the dative pronouns are attached.

(22) **Dative pronouns**

Singular person pronouns		Plural person pronouns	
Separate	Attached	Separate	Attached
$\acute{a}n\bar{o}$	= $\acute{a}n$, = $\bar{a}n$	1sD $\bar{a}gg\bar{a}n$	= $\bar{a}gg\bar{a}n$, = $\bar{a}gg\bar{a}n$ 1pD
$\acute{u}n\bar{u}$	= $\acute{u}n$, = $\bar{u}n$	2sD $\bar{u}gg\bar{u}n$	= $\bar{u}gg\bar{u}n$, = $\bar{u}gg\bar{u}n$ 2pD
$\acute{i}n\bar{o}$	= $\acute{i}n$, = $\bar{i}n$	3sD $\bar{i}gg\bar{a}n$	= $\bar{i}gg\bar{a}n$, = $\bar{i}gg\bar{a}n$ 3pD

As previously mentioned and as seen in (23b), the [+ATR] value assigned to the dative pronoun spreads leftward onto the root {M3}. There is no such harmony with independent dative pronouns as seen in (23a).

referent as the subject. However in (c), the reflexive meaning is extended and the reflexive is used as a repeated object for emphasis. Instead of referring back to the subject, it refers back to the object. In (29c), the plural noun *ʃɔgg* ‘people/officials’ and the third plural reflexive *ìṅg* are objects of the verb *máð* ‘refuse’. The noun *ʃɔgg* represents the government and is emphasized with the reflexive, possibly because of previous bad encounters with them. Reflexives are not found to be used as repeated subjects.

(29) **Reflexive pronoun examples**

- (a) “sàlàð = ā”, ē bèè, “ū = wór **ūūṅ** cābb ánēén”
 Hyena = DEF 3sN say 2sN = carry 2sR up like.this
 ‘ “Hyena”, he said, “Make yourself upright.” ’ (Nyee32)
- (b) ē máà **īṅ** ē àn mōsòr ɔ̀l
 3sN prides 3sR 3sN stay horse up
 ‘He takes pride in himself as he sits up on the horse.’ (Minj14)
- (c) ē máð ē²¹ ʃɔgg **ìṅg** é dāfā
 3sN refuse 3sN people 3pR by fighting
 ‘He refused (to give money to) the officials by fighting.’ (Fand4)

Reflexive pronouns are based on the inherently possessed word for ‘body’, which is *VVṅ*, where V is the person marker vowel. As discussed in 5.2.4, the word for body and a few other nouns cannot occur without possession using one of the person marker vowels. With such words the norm is for [-ATR] vowels to indicate singular persons, and for [+ATR] vowels as well as the plural suffix -gg to indicate plural persons. However, all reflexive pronouns are [+ATR], and the suffix -gg as well as Low tone indicate plural agreement.

(30) **Reflexive pronouns**

Singular person pronouns		Plural person pronouns	
ɔ̀ṅ	1sR	ə̀ṅ-g	1pR
ūūṅ	2sR	ùùṅ-g	2pR
īṅ	3sR	ìṅ-g	3pR

5.7 Prepositional pronouns

Prepositional pronouns are objects of prepositions, or for another reason are prefixed by the preposition marker *ɕ*. The prepositional prefix takes the place of the general preposition *é, í* (GP) as in (31a-b) when introducing prepositional pronoun objects

²¹ The second pronoun *ē* ‘he’ in (c) is the only occurrence found of a post-verbal subject pronoun. Perhaps it is repeated for emphasis or there is an implied unstated verb ‘to give’ of which *ē* ‘he’ is the subject pronoun.

(see 11.4). However, the prepositional prefix is used in addition to an adverb functioning as a directional preposition such as *dūmùùn* ‘towards’ in (c). It is also used in addition to the animate accompaniment preposition *ε* ‘with’ and accompaniment clitic =*E* on the pronoun as shown in (d). The marker is also used to introduce verb objects when separated from the verb by a bound dative pronoun as in (e) or by other verbal suffixes.

(31) **Prepositional pronoun examples**

- (a) jāām kòòm-s-ī d-**één** wá
 someone bother-COMP-PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)
- (b) jōgg ēgg sói bà, ēgg wár jègg = ā d-**aggá** kākē
 people 3pN come oh 3pN take things = DEF PP-1pO all
 ‘When these people come, they take all (our) things from us.’ (Minj7)
- (c) ò ó yāā nāā néé lèénán dūmùùn d-**ūūŋ** t̄à
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘. . . and your mother’s sister was coming to you there.’ (Assa3-4)
- (d) ò kár t̄āđán è d-**égg** = ē
 and wildcow was with PP-3pO = ACM
 ‘. . . and a wild buffalo was with them.’ (Nyee4)
- (e) ē gòl-d = ìn d-**één** ná t̄ád d̄í
 3sN /gàl/ram-SBJV.3sN = 3sD²² PP-3sO REL.SG down also
 ‘. . . in order to break it down for them.’ (Nyee12)

Prepositional pronouns have the same segmental form as the long subject pronouns. However, in addition to taking the prefix *d-*, prepositional pronouns are post-verbal and differ in tone from long subject pronouns.

(32) **Prepositional pronouns**

Singular person pronouns		Plural person pronouns	
-áán(á)	1sO	-āggá	1pO
-óón(ó)	2sO	-ōggó	2pO
-één(á)	3sO	-êggè	3pO

Occasionally, the third singular prepositional pronoun is attached to a preposition or other word category without the prefix *d-*. In (33), the pronoun *-één* is shortened to *-ē* on the preposition *t̄ád-ē* ‘down’ and literally means ‘down of it (egg’s head)’.

²² As with subject pronouns, third singular dative pronouns are sometimes used for third plural referents.

- (33) ð kólóḍ = ḍ ðùr-s = ðnó ēēl ɬáḍ-ē bà bèl-ḍā wá
 and egg = DEF bury-COMP = head. down- oh burst not
 PAS 3sPs 3sO
 ‘And the egg put in the ground with its top side down did not burst.’
 (Fand21)

In chapter 12, it is discussed how body part locatives can be used with nouns of reference as in (34a) or with pronouns of reference as in (b). The latter is a special kind of prepositional pronoun called a ‘locative prepositional pronoun’.

- (34a) **Body part locative *ééŋ* ‘behind’ with noun reference *ũfú* ‘tree’**
 ālḍ = á ē pârḍḍ ũfú ééŋ²³
 fox = DEF 3sN jump tree behind
 ‘Fox jumped behind the tree.’
- (b) **Body part locative *ḍ-ééŋ* ‘behind’ with third singular pronoun reference; also called a locative prepositional pronoun**
 ālḍ = á ē pârḍ = ì ḍ-ééŋ
 fox = DEF 3sN jump = 3sAM PP-behind.3sO
 ‘Fox jumped behind him (lit. jumped him behind him).’ (Goat12)
- (c) **Third singular possessed singular body part noun *ēēŋ* ‘back’**
 ālḍ = á ē pârḍḍ ēēŋ ḥól
 fox = DEF 3sN jump back.3sPs up
 ‘Fox jumped on his back.’

Locative prepositional pronouns are often close in form to inherently possessed body part nouns which do not occur without being possessed by someone (Payne 1997:105-106). As discussed in 5.2.4, speakers cannot say ‘back’, ‘hand’, ‘head’, etc. without also including the possessor along with the noun (i.e. *āāŋ* ‘my.back’, *ḥḥŋ* ‘your.back’, *ēēŋ* ‘his.back’, etc.). Although their vowels distinguish person as in locative prepositional pronouns (*ḍ-ááŋ* ‘behind-me’, *ḍ-ḥḥŋ* ‘behind-you’, *ḍ-ééŋ* ‘behind-him’), inherently possessed body parts such as *ēēŋ* in (34c) have no prepositional prefix *ḍ-* and differ in tone than when used as locative prepositional pronouns as in (34b). In chapter 12, it will be shown that body part locatives with noun references such as (34a) of this section do not distinguish person and are thus a distinct lexical category from possessed body part nouns. Since locative prepositional pronouns have different tone than the respective body part nouns from which they are taken, they are analyzed categorically as locatives rather than as nouns with locative meaning through metaphorical extension. Further, since they

²³ The body part locative *ááŋ* ‘behind’ can also be used to reference the third singular noun *ũfú* ‘tree’, indicating that the vowel *aa*, which refers to first person in pronouns, no longer refers to person in this phrase.

attach the same prepositional prefix *ɔ-* as other prepositional pronouns, they are also analyzed as prepositional pronouns rather than as mere locatives.

In (35a), the locative prepositional pronoun *ɔ-éél* ‘on-it’ is close in form to the inherently possessed body part noun *éél* ‘his.head’. If the meaning were ‘on its head’, the word *éél*, followed by the locative *ɔɔl* ‘up’, would be used. In (b), the locative prepositional pronoun *ɔ-ŋ-mùù-gg* ‘in.front.of-them’ is used. In both of these examples, as well as in (34b), the third singular marked object pronoun *=i* is attached to the verb preceding the prepositional pronoun. In (35c), the third singular object pronoun represents a third plural referent.

(35) **Locative prepositional pronoun examples**

(a) *bél Mɪŋjɪbb ʔāéén ē dɔ̀s̄s̄ ē àbb=i ɔ-éél*
 named Minjib then 3sN starts 3sN rides = 3sAM PP-on.3sO
 ‘. . . called Minyjib rode his horse proudly (lit. rides it on it).’ (Minj13)

(b) *ná ón=i ē pəl=i táɖ ɔ-ŋ-mùù-gg*
 REL.SG bad=RDM 3sN fall = 3sAM down PP-3pO-front-PL
 ‘(thing) which is bad fell down in front of them
 (lit. falls to them down in front of them).’ (Thng8)

Just as the inherently possessed body part noun *VVŋ* ‘body’ is used as a reflexive pronoun, other inherently possessed body part nouns of 5.2.4 are used as locative prepositional pronouns, including the word *VVŋ* ‘body’ (for the meaning ‘under’)

(36) **Body part nouns and locative prepositional pronouns**

Person	Body part nouns			Locative prepositional pronouns		
	N SG	N PL		PREP PRON SG	PREP PRON PL	
1	<i>āāŋ</i>	<i>ààŋg</i>	‘body’	<i>-ááŋ</i>	<i>-ààŋg</i>	‘under’
2	<i>ɔɔŋ</i>	<i>ùùŋg</i>		<i>-úúŋ</i>	<i>-ùùŋg</i>	
3	<i>ēēŋ</i>	<i>ììŋg</i>		<i>-ííŋ</i>	<i>-ììŋg</i>	
1	<i>āālg</i>	<i>ààlg</i>	‘stomach’	<i>-áálg</i>	<i>-ààlg</i>	‘inside’
2	<i>ɔɔlg</i>	<i>ùùlg</i>		<i>-úúlg</i>	<i>-ùùlg</i>	
3	<i>ēēlg</i>	<i>ììlg</i>		<i>-éélg</i>	<i>-íílg</i>	
1	<i>āāl</i>	<i>ààlg</i>	‘head’	<i>-áálg</i>	<i>-ààlg</i>	‘above’
2	<i>ɔɔl</i>	<i>ùùlg</i>		<i>-úúlg</i>	<i>-ùùlg</i>	
3	<i>ēēl</i>	<i>ììlg</i>		<i>-éélg</i>	<i>-íílg</i>	
1	<i>āāŋ</i>	<i>ààŋg</i>	‘back’	<i>-ááŋ</i>	<i>-ààŋg</i>	‘behind’
2	<i>ɔɔŋ</i>	<i>ùùŋg</i>		<i>-úúŋ</i>	<i>-ùùŋg</i>	
3	<i>ēēŋ</i>	<i>ììŋg</i>		<i>-ííŋ</i>	<i>-ììŋg</i>	
1	<i>mūū</i>	<i>mùùgg</i>	‘face’	<i>-áámū</i>	<i>-ààmùgg</i>	‘in front of’
2				<i>-úúmū</i>	<i>-ùùmùgg</i>	
3				<i>-éēmū</i>	<i>-íìmùgg</i>	

with different tone than for reflexive pronouns. In (36), *mūū* 'face' is the only body part used as a prepositional pronoun that is not an inherently possessed body part.

6 Noun stem

6.1 Introduction

The noun word structure can be ordered according to the schemes of (1). The noun stem consists of the root and optional singular or plural suffixes. The noun word consists of the stem, and optional slots for copula (COP), definite (DEF), locative (LCM), dative (DAT), accompaniment (ACM), subordinate (SBO), and relative definite clause marker (RDM) clitics.

- (1) Noun stem = root + ({SG, PL})
 Noun word = [Noun stem] + ({COP, DEF, LCM, DAT, ACM, SBO, RDM})

Noun stem morphology (suffixes) is discussed in this chapter and noun word morphology (clitics) is discussed in the next. All noun suffixes are inflectional number markers that have referential meaning, whereas the noun clitics indicate the role of the noun phrase within the syntactic context. Whereas inflectional suffixes cannot combine with each other (*SG-PL), all noun clitics can combine with the inflectional suffixes.

A primary distinction between suffixes and clitics is whether the element attaches to underlying-final segments or to surface-final segments. Stem suffixes attaching to noun roots attach to underlying-final segments, whereas word clitics attaching to noun stems attach to surface-final segments. Vowel length of root-final vowels is the primary indicator of whether the form is an underlying or surface representation. In (2), the plural suffix *-gg* attaches to the underlying short vowel in *ʈɔ-gg* ‘cow-PL’, whereas the accompaniment clitic attaches to the surface long vowel of the singular form (*ʈɔɔ = nɛ̃*).

(2) **Roots and stems compared**

Underlying	Surface	Noun stem	Noun word	
root	root	suffix	clitic	
UR	N.SG	N-PL	N.SG=ACC	
/ʈɔ/	ʈɔɔ	ʈɔ-gg	ʈɔɔ = nɛ̃	‘cow’

The same tone rules apply to most noun stem and noun word morphology. However, the starting point for noun stem tone assignment is the root tone, whereas the starting point of noun word tone assignment is the stem tone.

As discussed in 2.4.3, two-tone melodies on trisyllabic noun roots are assigned right-to-left. Thus, in the monomorphemic root *mɔggɔlɛ̃ɛ̃* ‘maize’ of (3a), the Low tone of the HL melody surfaces on the final syllable, and the High tone of the melody surfaces on the first two syllables. Tone assignment for noun stems such as *ʃlɔbb-ɔgg* ‘water.spring-PL’ in (b) begins with the tone assigned to the root in the singular

form *jílàbb* and spreads to the plural suffix *-Agg* having no underlying tone. If the root tone were not the starting point, right-to-left tone assignment would render the surface tone as **jílàbb-àgg* instead of *jílàbb-àgg*.

(3) **Roots, stem, and word tone assignment compared**

	N.SG	N-PL	N.PL=COP	
(a) HL root tone	móggólèè			‘maize’
(b) HL stem tone	jílàbb	jílàbb-àgg		‘water spring’
(c) HL word tone	íl	íl-ààgg	íl-ààgg=à	‘horn’

Similarly, tone assignment for noun words such as *íl-ààgg=à* ‘horn-PL=COP’ in (3c) begins with the tone assigned to the stem in the plural form *íl-ààgg* and continues by attaching the copular suffix *=À* with Low tone. The noun stem tone assignment *íl-ààgg* has the root tone *íl* as its point of departure where the second tone of the HL root melody is delinked and reassigned to the tone-less suffix *-ÀAgg* {M2}. If the stem tone were not the starting point, the word tone would be different. For instance, if the root tone *íl* were the starting point, right-to-left tone assignment would render the surface tone as **íl-ààgg=à* instead of *íl-ààgg=à*. Or, if the HL underlying tones of the copular word form were assigned right-to-left, the surface tone would be **íl-ààgg=à* instead of *íl-ààgg=à*.

In summary, we can say there are four criteria for determining which noun bound morphemes are suffixes and thus a part of the stem, and which noun bound morphemes are clitics and thus outside of the stem, but a part of the word. In chapter 4, each of the morphemes listed in (4) below is shown to attach to more than one word category. As will be shown in the respective sections of chapter 7, all noun clitics attach to the inflectional suffixes. Also shown in the respective sections, the clitics attach to the surface-final segments. Finally, the stem tone assignment is the point of departure in tone assignment for the clitics. These criteria are not valid for the inflectional number suffixes. Thus, the clitics are analyzed as being a different kind of morpheme than the suffixes.

(4) **Criteria for determining that COP, DEF, LCM, DAT, ACM, SBO, RDM bound morphemes are clitics (stem morphemes) and not suffixes (root morphemes)**

- (a) Attaches to more than one word category
- (b) Attaches to inflectional morphemes
- (c) Attaches to surface-final segments
- (d) Stem tone assignment is the point of departure

Inflectional number marking with the suffix *-gg* occurs on both nouns and adjectives and is one possible exception of a suffix attaching to more than one word category, as do clitics. However, there are many other plural suffixes attaching to

nouns which do not attach to adjectives. In contrast, all allophonic clitics (with different forms and the same function) attach to each word category.

First, the segmental suffixes in plural formation are discussed in 6.2. Then the tonal allomorphs of various suffixes and tone assignment are discussed in 6.3. Body parts, a class of nouns which take special plural formation, are discussed in 6.4. Finally, the genitive case, which only involves a tonal change, will be presented in 6.5.

6.2 Segmental noun plural formation

In Gaahmg, there are singular and plural suffixes on nouns. While the vast majority of singular nouns do not have suffixes, plural marking is obligatory with plural referents. There are also a significant number of nouns that only have singular forms or only have plural forms. In addition, there are some nouns with variance between one or more suffixes on the nouns. However, there are no singular nouns with suffixes where the corresponding plural nouns are without suffixes.

Table 8: Noun Plural Formation

	N SG	N PL		Percentage
SG suffix/PL suffix	mōréé-ǰ	mōréē-gg	‘vegetable type’	5%
-/PL suffix	rīmóó	rīmóō-gg	‘star’	70%
Noun SG only	būil	---	‘moisture’	15%
Noun PL only	---	īigg	‘milk’	10%

First we discuss singular suffixes in 6.2.1 and plural suffixes in 6.2.2-6.2.3. Irregular plural formation is shown in 6.2.4. Nouns with only singular forms and only plural forms are presented in 6.2.5. Finally, noun with varying suffixes are presented in 6.2.6.

6.2.1 Singular suffixes

Less than 5% of noun lexemes in the language²⁴ have singular suffixes. Although there are five attested singular suffixes, only -ǰ is not rare. All singular suffixes attach to root-final sonorants, and the suffix -ǰ also attaches to root-final vowels. The choice of the singular suffix has no semantic correlation with the noun to which it is attached. Virtually all nouns with singular suffixes also have plural suffixes. The plural suffixes attached to nouns presented in this section are the same as those presented in the following sections.

²⁴ Here and in following sections, percent of nouns means out all the noun lexemes in our data set.

Table 9: Singular Suffixes

Suffix	Final segment of root	N SG	N PL		# of nouns
-ḍ	vowel	rúnúú-ḍ	rúnúú-gg	‘bird type’	36
	sonorant	bàr-ḍ	bàr-ḍḍgg	‘lion’	6
-gg	sonorant	àr-g	àr-ēēgg	‘priest, chief’	7
-Aḍ	sonorant	níl-ḍ	nìl-g	‘intestine’	3
-AAḍ	sonorant	cāl-āāḍ	càl-g	‘testicle’	1
-Eḍ	sonorant	ḵín-íḍ	ḵín-g	‘louse’	1

The most common singular suffix is *-ḍ*, which attaches to root-final vowels and sonorant consonants. There are 36 nouns attested with this suffix. In (5), the suffix is attached to root-final long and short vowels.

(5) **Singular suffix *-ḍ* attached to root-final long and short vowels**

UR-final	suffixes	N SG	N PL	
/aa/	-ḍ/-gg	wéráá-ḍ	wéráá-gg	‘tribe member’
/a/	-ḍ/-gg	bàsà-ḍ	bàsà-gg	‘large intestine’
/ə/	-ḍ/-gg	ə̀rḵə̀-ḍ	ə̀rḵə̀-gg	‘insect type’
/εε/	-ḍ/-gg	mōréé-ḍ	mōréé-gg	‘vegetable type’
/ε/	-ḍ/-gg	bórē-ḍ	bórē-gg	‘eye matter’
/ii/	-ḍ/-gg	mōmíí-ḍ	mōmíí-gg	‘root type’
/i/	-ḍ/-AAḍ	mōī-ḍ	mōy-ḍḍ	‘ancestor’
/ɔɔ/	-ḍ/- ⁺ gg	gòḍ-ḍ	gùù-gg	‘excrement’
/uu/	-ḍ/-gg	rúnúú-ḍ	rúnúú-gg	‘bird type’
/u/	-ḍ/-gg	gə̀rmù-ḍ	gə̀rmù-gg	‘insect type’

It is less common for the singular suffix *-ḍ* to attach to root-final sonorant consonants. Only the nouns of (6) have been attested.

(6) **Singular suffix *-ḍ* attached to root-final sonorants**

UR-final	suffixes	N SG	N PL	
/n/	-ḍ/-gg	nān-ḍ	nān-g	‘demon’
/r/	-ḍ/-EEgg	mḍggḍr-ḍ	mḍggḍr-ēēgg	‘cane’
/r/	-ḍ/-EEgg	bāār-ḍ	bāār-ēēgg	‘abdomen, waist’
/r/	-ḍ/-EEgg	gə̀ūr-ḍ	gə̀ūr-īīgg	‘stomach pouch’
/r/	-ḍ/-AAgg	bàr-ḍ	bàr-ḍḍgg	‘lion’
/r/	-ḍ/-AAgg	kōr-ḍ	kōr-ḍḍgg	‘bird type’

The singular noun suffix *-gg* is attached to the inherently possessed body part noun *āā-gg* ‘my mouth’, *ḍḍ-gg* ‘your mouth’, *ēē-gg* ‘his/her mouth’ discussed in 5.2.4 where the suffix attaches to the person marker vowel. Otherwise, only the nouns of (7-8) are attested with the singular suffix *-gg*, and in all of these, the suffix is attached to root-final sonorants.

(7) **Singular suffix *-gg* attached to root-final sonorants**

UR-final	Suffixes	N SG	N PL	
/r/	-gg/-EEgg	àðr-g	àðr-ēēgg	‘priest, chief’
/n/	-gg/-EEgg	ún-g	ún-ígg	‘tear’
/ð/	-gg/-AAgg	gəðð-g [gəðəg.]	gəðð-əəgg	‘thief’
/l/	-gg/- ⁺ gg	ŋāl-g	ŋəl-g	‘neck’
/l/	-gg/- ⁺ gg	éél-g	ìil-g	‘my stomach/ our stomachs’

In the nouns of (8), the singular suffix *-gg* becomes *-ɟ* when attached to root-final palatals through an assimilation process. However, the plural suffix *-gg* attached to the same root is not assimilated. Thus, the process only applies to this singular suffix *-gg*.

(8) **Singular suffix *-gg* attached to root-final palatals becomes *-ɟ***

UR-final	Suffixes	N SG	N PL	
/ɲ/	-gg/-AAgg	bɛɲ-ɟ	bɛɲ-āāgg	‘side of something’
/y/	-gg/-Aagg	máāy-ɟ	máāy-g	‘cucumber’

A handful of nouns have the singular suffixes *-Aɟ*, *-AAɟ* or *-Eɟ*, where *A* is a back vowel taking the [round] feature of the root {M4}, *A* is a non-rounded back vowel, and *E* is a front vowel. All of these singular suffixes attach to root-final sonorants.

(9) **Singular suffixes *-Aɟ*, *-AAɟ* and *-Eɟ* attached to root-final sonorants**

UR-final	Suffixes	N SG	N PL	
/l/	-Aɟ/-gg	ɲíl-əɟ	ɲìl-g	‘intestine’
/l/	-Aɟ/-gg	kól-əɟ	kól-g	‘egg’
/ŋ/	-Aɟ/-gg	túŋ-əɟ	túŋ-g	‘tribe member’
/l/	-AAɟ/-gg	cāl-āāɟ	càl-g	‘testicle’
/ŋ/	-Eɟ/-gg	ɟíŋ-íɟ	ɟíŋ-g	‘louse’

6.2.2 Plural suffixes

Nearly all plural marking involves the segment *gg*. Plural suffixes may also have an initial short or long vowel, where a short vowel only occurs following root-final obstruents, and a long vowel only occurs following root-final sonorants or geminate velar plosive *gg*. Most plural suffixes have no semantic correlation with the nouns to which they attach. However, there are five suffixes which attach to a few nouns in the semantic sets of relational nouns or body parts. Most plural suffixes are unspecified for ATR, but there are two suffixes that are underlyingly specified as [+ATR] which spread their quality leftward to the root {M3}. Further, plural suffixes may have up to three tone patterns: no tone, M or H/HM. Plural suffixes with no semantic correlation to the root are presented in this section and plural suffixes correlated to semantic sets of nouns are presented in the following section.

Table 10: Plural suffixes with no semantic correlation

Suffix	Final segment	N SG	N PL		Percentage or number ²⁵
-gg	sonorant	ḍáár	ḍáár-g	‘throne’	37%
	vowel	fṵēḍá	fṵēḍá-gg	‘seed’	
-Agg	obstruent	célḍ	célḍ-āgg	‘local broom’	17%
-EEgg	sonorant	póón	póón-ēēgg	‘knife sheath’	17%
-AAgg	sonorant	bón	bón-āāgg	‘heart’	9
-AAgg	sonorant	kōr-ḍ	kōr-ṵōgg	‘bird type’	1

Plural suffix *-gg*

The plural suffix *-gg* attaches to nouns with root-final sonorants or vowels. About 37% of nouns take this suffix. In (10), the suffix is attached to root-final sonorants. In section 6.2.6 it will be shown that several root-final sonorant nouns take both the plural suffix *-gg* and the plural suffix *-EEgg* (*téér/téér-g*, *téér-ēēgg* ‘carving tool’). Nouns with other root-final segments sometimes have variance between other suffixes.

(10) Plural suffixes *-gg* (with Mid tone), *-gg* on root-final sonorants

UR-final	N SG	N PL	
/m/	jēém	jēém-g	‘sorghum sieve’
/n/	gḍēn	gḍēn-g	‘metal worker’
/ɲ/	wèlèɲ	wèlèɲ-g	‘sour/bitter taste’
/ŋ/	sāmán	sāmán-g	‘sorghum storehouse’
/r/	ḍáár	ḍáár-g	‘throne’
/l/	sēwéél	sēwéél-g	‘tree type’
/ð/	mēēð	mēēð-g [mēēg,]	‘tree type’
/w/	káð	kâw-g	‘hyena’
/y/	ááé	ááy-g	‘honey’
/y/	ɲūù	ɲūy-g	‘leopard’

Nouns with root-final approximants *w* or *y* surface with a root-final vowel in the singular form (*káð* ‘hyena’, *ɲūù* ‘leopard’), in accordance with {P1b} in 2.1.3. As discussed in 2.3.5, there is no strong evidence for the root-final segments in the plural forms of such nouns surfacing as approximants (*kâw-g* ‘hyena-PL’, *ɲūy-g* ‘leopard-PL’) or vowels (*káð-g*, *ɲūù-g*).

In (11), the suffix *-gg* attaches to nouns with root-final vowels, including short and long final vowels in monosyllabic and polysyllabic roots.

²⁵ The percentages of nouns in the first three rows are out of all noun lexemes in the language; the number of nouns in the last two rows is the exact number of nouns attested.

(11) **Plural suffixes -*gg*, -*gg* on root-final vowels**

UR-final	N SG	N PL	
/aa/	wāā	wāā-gg	‘water, lake’
/əə/	wāē	wāē-gg	‘shade, help’
/oo/	póó	póó-gg	‘tree type’
/uu/	bùù	bùù-gg	‘chicken coop roof’
/εε/	rēē	rēē-gg	‘cotton, thread’
/ii/	mīí	mīí-gg	‘chicken’
/uə/	būè	būè-gg	‘tree type’
/a/	fṵyḍá	fṵyḍá-gg	‘planting seed’
/ə/	cífṵ	cífṵ-gg	‘Tabaldi leaf’
/ɔ/	mṵḍṵ	mṵḍṵ-gg	‘locust’
/u/	kúúfú	kúúfú-gg	‘ground sesame’
/aa/	wááyáá	wááyáá-gg	‘bird type’
/əə/	rímṵṵ	rímṵṵ-gg	‘star’
/εε/	káálḍéé	káálḍéé-gg	‘brother-in-law’
/ii/	kūsūmíí	kūsūmíí-gg	‘knee’
/oo/	páḥḥṵṵ	páḥḥṵṵ-gg	‘star’
/uu/	əyúú	əyúú-gg	‘local toothbrush’

In addition, there are four monosyllabic, open-syllable nouns with short vowels in the underlying representation. As discussed in 2.3.3, the vowels of all monosyllabic, open-syllable nouns are realized as long. The four nouns in (12) have short root vowels, which are realized as long in the singular form. However, when the plural suffix *-gg* with final consonant is attached to the underlying form, the vowel remains short. Since the final consonant *s* of (12d) does not surface in the singular form, the short vowel is realized as long.

(12) **Plural formation with monosyllabic, open-syllable nouns having underlying short vowels**

	Root	N SG	N PL	
(a)	/sá/	sáá	sá-gg	‘wine’
(b)	/ṵṵ/	ṵṵ	ṵṵ-gg	‘cow’
(c)	/gḍ/	gḍḍ	gḍ-gg	‘clothing type’
(d)	/wés/	wéé	wís-əgg	‘house’

Plural suffix -*Agg*

The plural suffix *-Agg* attaches to underlying root-final obstruents, including various root-final consonant sequences and geminate plosives. About 17% of nouns take this suffix. The suffix vowel *A* is unspecified for roundness and takes the [round] quality of the root, in accordance with {M4} in 3.3. It is also unspecified for [ATR] and takes this feature from the root {M3}.

(13) **Plural suffixes -Ágg, -Āgg, -Agg**

UR-final	N SG	N PL	
/bb/	ʃílàbb	ʃílàbb-àgg	‘water spring’
/ḍ/	mīḍ	mīḍ-ógg	‘stone’
/d/	dḍd	dḍd-ḵgg	‘bird type’
/ʃʃ/	síʃʃ	síʃʃ-ḵgg	‘tree type’
/s/	tēndás	tēndás-āgg	‘bird type’
/nd/	órónḍ	órónḍ-ḵgg	‘fermented milk’
/ḥḍ/	lèḥḍ	lèḥḍ-àgg	‘tree type’
/ḍ/	cúḍ	cúḍ-ūgg	‘birth sack’
/rd/	ṫīrd	ṫīrd-ḵgg	‘farm’
/ḥʃ/	bàḥʃ	bàḥʃ-ḵgg	‘sorghum pulp’
/lʃ/	ílʃ	ílʃ-àgg	‘beeswax’
/ms/	nāms	nāms-āgg	‘food’
/rs/	bāgdàrs	bāgdàrs-àgg	‘lizard’

The suffix also attaches to two words with root-final approximant *ḍ*: *kūūḍ/kūūḍ-ḵgg* ‘shadow’ and *ēēḍ/ēēḍ-āgg* ‘water-carrying net’. All other nouns with root-final approximant take the suffixes *-gg*, *-EEgg*, or *-AAgg* (see next two sections) which attach to sonorants.

Although *-ḍ* is a singular suffix, some roots have *ḍ* as the final root segment. As shown in the nouns of (14) with root-final *ḍ*, the dental surfaces in the plural form.

(14) **Root-final ḍ surfacing in plural nouns**

N SG	N PL	
ḍàḍ	ḍàḍ-àgg	‘scorpion’
káēḍ	káēḍ-āgg	‘cup, spoon’
lāāḍ	lāāḍ-āgg	‘gum mastic’
lúlíḍ	lúlíḍ-ḵgg	‘snake type’
māāḍ	māāḍ-āgg	‘snake type’
rúḍ	rúḍ-ḵgg	‘dirt’
ēēḍ	īḍ-ógg	‘his eye/his eyes’
yāāḍ	yāāḍ-āgg	‘broken plate’
mīḍ	mīḍ-ógg	‘stone’

However, in the eleven plural nouns of (15) with root-final *ḍ*, the segment *ḍ* is either weakened to the approximant *ḍ* or elided. Several of these nouns have more than one plural form. The noun of (a) has one plural form where *ḍ* surfaces and one where it is weakened to *ḍ*. The noun of (15d) has one plural form where *ḍ* surfaces and one where it is elided. The nouns of (15e-i) have one plural form where *ḍ* is weakened to *ḍ* and one where it is elided.

(15) **Root-final *ɖ* weakened to approximant *ð* or elided in plural nouns**

	N SG	N PL with <i>ɖ</i>	N PL with <i>ð</i>	N PL with elision	
(a)	ɖāðɖ	ɖāðɖ-àgg	ɖāðð-àgg		‘fertile soil’
(b)	fīīɖ		fīīð-əgg		‘feather’
(c)	lōggóóɖ		lōggóóð-ēgg		‘locust’
(d)	àbbāɖ	àbbāɖ-āgg		àbbā-āgg	‘tree type’
(e)	áfáɖ		áfáð-āgg	áfá-āgg	‘blood’
(f)	ōɖ		ōð-ōgg	ō-ōgg	‘wife’
(g)	ɟìɖ		ɟìð-əgg	ɟì-ìgg	‘husband’
(h)	áfáɖ		áfáð-āgg	áfá-āgg	‘blood’
(i)	rēbbéɖ		rēbbéð-ēgg	rēbbé-ēgg	‘reed type’
(j)	lúɖ			lú-ùgg	‘leg’
(k)	kólíɖ			kólí-ìgg	‘bird type’

Similarly, there are several nouns with root-final palatal geminate *ʃ* in which the geminate surfaces in the plural form.

(16) **Root-final *ʃ* surfacing in plural nouns**

	N SG	N PL	
	sííʃ	sííʃ-əgg	‘tree type’
	ʃálhèʃ	ʃálhèʃ-àgg	‘tree type’
	sūrmùʃ	sūrmùʃ-ùgg	‘tree type’
	pēbbēēʃ	pēbbēēʃ-āgg	‘tree type’

There are also nouns with root-final palatal geminate *ʃ* in which the geminate is elided in the plural form. The noun of (17a) has one plural form where *ʃ* surfaces and one where it is elided.

(17) **Root-final *ʃ* elided in plural nouns**

	N SG	N PL with <i>ʃ</i>	N PL with elision	
(a)	bìmiríʃ	bìmiríʃ-əgg	bìmirí-ìgg	‘bird type’
(b)	búlíʃ		búlí-ìgg	‘worm’
(c)	gàfāʃ		gàfē-ēgg ²⁶	‘lung’

The suffix vowel of *-Agg* is assimilated to the preceding vowel when it directly follows the last root vowel. In addition to roundness and [ATR] spreading, the suffix vowel also takes on the [-back] feature of the root. For example, in (15g) *ɟìɖ/ɟì-ìgg* ‘husband’, (15i) *rēbbéɖ/rēbbé-ēgg* ‘reed type’, and (17a) *bìmiríʃ/bìmirí-ìgg* ‘bird type’, the vowel of the suffix *-Agg* becomes *i* or *ε* to match the last root vowel.

The nouns of (15) and (17) are analyzed as exceptions in that intervocalic *ɖ* and *ʃ*

²⁶ This noun is irregular in that it has the suffix *-Egg* and the root vowel assimilates to the suffix vowel rather than vice versa.

are not weakened in other morpheme boundaries of the language. In (4) of section 2.1.3, we saw that *ɖ* of the root verb /*cūɖ*/ ‘climb’ is not weakened in the intervocalic environment of the continuous form *cūɖ-ón*. Similarly, the *ʃ* of the root verb /*káʃ*/ ‘bring’ surfaces as a palatal plosive when the deictic completive suffix *-Cagga* is attached (*káʃ-ʃággā*).

Alternatively, one might analyze the nouns of (15) and (17) as having suffixes in the singular and plural forms and the roots ending in vowels, such as *ɖā̀-ɖ/ ɖā̀-ɖágg* ‘fertile soil’, *àbbā-ɖ/ àbbā-ágg* ‘tree type’, *bimiri-ʃ/ bimiri-igg* ‘bird type’, etc. However, this analysis requires an additional singular suffix *-ʃ* and plural suffix *-ɖágg*, the latter being unusual in that there are no other -CVC suffixes on nouns. Further, when the vowel-initial past continuous suffix *-An* is attached to the vowel-final verb root /*pa*/ ‘guard’, the suffix becomes a second syllable, juxtaposed to the root (*pā-án*), in accordance with {M2} of 3.1. However, the plural suffix on the nouns in (15) and (17) does not become an additional syllable (*bimiri-igg*), and reflects a different underlying form. Thus, the alternative analysis is not taken and the nouns of (15) and (17) are analyzed as having only plural suffixes.

In (13), the suffix *-Agg* was shown to attach to the root-final plosives *-bb*, *-ɖ*, *-d*, and *-ʃ*. It is posited that the velar plosive is included in the list of root-final segments to which the suffix attaches. The velar plosive elision rule of {P2} in 2.1.3 predicts that word-final velar plosives are elided. It also predicts that when a vowel-initial suffix is attached to a root-final velar plosive *g*, the plosive will be elided in the resulting intervocalic environment. This is the case for the incomplete and past continuous forms of (18) with suffix *-An*. The deictic completive form is given to make clear the root-final segment.

(18) **Incomplete and continuous verb forms which elide *g***

Root	3sN	3sN	3sN		
	INCP	CONT.P	D.COMP		
/bag/ L	bàā	bà-án	bàg-gāggā	[bàgāgā]	‘take’
/cig/ M	cī	cī-ón	cīg-góggō	[cīgógō]	‘wear’
/gug/ L	gū	gū-ón	gùg-gōggō	[gùgōgō]	‘vomit’

It is posited that the same process occurs in nouns with the plural suffix *-Agg*. The nouns of (19) are believed to have root-final velar plosives which are elided word-finally in the singular form and intervocalically in the plural form. After the velar plosive is elided, the vowel of the suffix takes on the same features as that of the last root vowel, just as in the nouns of (15) and (17) when *ɖ* and *ʃ* are weakened to elision.

There are no noun suffixes with initial consonant which attach to both underlying-final consonants and underlying-final vowels. Therefore, the root-final velar

(19) **Plural suffixes -*Ágg*, -*Āgg*, -*Agg* with root-final *g***

UR-final	N SG	N PL	
/ɛg/	áŋɛ́	áŋɛ́-ēgg	‘elephant’
/ag/	cáffá	cáffá-āgg	‘side of body’
/ɔg/	tálɔ̀	tálɔ̀-ògg	‘tax’
/ig/	būlɔ́í	būlɔ́í-īgg	‘finger’
/əg/	tílŋɔ́	tílŋɔ́-əgg	‘sorghum type’
/ug/	kúlmú	kúlmú-úgg	‘buttock’

plosive *g* never surfaces in nouns as it does in verbs. Thus, there is no way to verify the root-final *g* in the nouns of (19).

Alternatively, the nouns of (19) could have root-final vowels. But as with the nouns of (15) and (17), the plural suffix on the nouns of (19) does not become an additional syllable, juxtaposed to the root (*áŋɛ́-ēgg* ‘elephant’) as does the past continuous suffix on verbs with root-final vowels (*pā.-án* ‘guard-CONT.P’) {M2}. Thus, the alternative analysis is not taken.

Plural suffix -*EEgg*

The plural suffix *-EEgg* attaches to root-final sonorants. About 17% of nouns have this suffix. There is no difference in phonological distribution between nouns with *-EEgg*, *-gg*, or *-A*Agg** (next section), which are all suffixed to final sonorants.

(20) **Plural suffixes -*ÉĒgg*, -*ĒĒgg*, -*EEgg***

UR-final	N SG	N PL	
/m/	bààm	bààm-èègg	‘bird type’
/n/	kūn	kūn-īigg	‘hunger’
/ɲ/	lúɲ	lúɲ-íigg	‘boomerang’
/ŋ/	póóŋ	póóŋ-ēēgg	‘knife sheath’
/r/	téèr	téèr-èègg	‘carving tool’
/l/	ààl	ààl-ēēgg	‘brother’
/ð/	āāð	āāð-íigg	‘tree type’
/w/	ɖāɖ	ɖāw-èègg	‘monkey’
/y/	rāāē	rāāy-éēgg	‘quarrel, war’

The suffix *-EEgg* also attaches to one noun with root-final velar geminate *gg*: *ógg/ógg-éēgg* ‘place’. All other nouns with root-final velar geminate take the suffix *-A*Ad** (5.6.3) which attaches to obstruents and sonorants. The suffix *-EEgg* also attaches to three words with root-final dental plosive *d* in which *d* is weakened to the approximate *ð* or elided: *rēbbéð/rēbbéð-ēēgg* ‘reed type’, *ŋāāŋāāð/ŋāāŋāā.-éēgg* ‘thigh’, *əbbùùð/əbbùù.-īigg*. In *ŋāāŋāā.-éēgg* and *əbbùù.-īigg*, three syllables remain despite the deleted plosive. All other nouns with root-final dental plosives take the suffix *-Agg*.

In (1) of 3.2.1, the suffix *-EEgg* was attached to nouns with each of the six root vowels.

Plural suffix *-AAgg*

The plural suffix *-AAgg* attaches to root-final sonorants. Only the nine nouns of (21) have been attested with this suffix. Since the suffix vowel is underlyingly specified as [-round], it is not affected by the [round] quality of the root such as in *kùùl/ kùùl-ḡḡgg* ‘clan member’ and *bón/bón-āāgg* ‘heart’. Thus, the [round] rule {M4} does not apply to this suffix.

(21) Plural suffixes *-ÁAgg*, *-ĀĀgg*, *-AAgg*

UR-final	N SG	N PL	
/l/	íl	íl-ḡḡgg	‘horn’
	téèl	téél-ààgg	‘anchor’
	kùùl	kùùl-ḡḡgg	‘clan member’
	láál	láál-áāgg	‘pumpkin type’
/n/	kásán	kásán-áāgg	‘friend’
	bón	bón-āāgg	‘heart’
/m/	yāàm	yààm-ààgg	‘bride’
/w/	cééḡ	cééw-āāgg	‘lame person’
/ð/	jááḡ	jááḡ-āāgg	‘old clothes’

There is no difference in phonological distribution between nouns with suffixes *-gg*, *-EEgg*, or *-AAgg*, which are all suffixed to final sonorants; nor is there any way to predict which noun takes which of the three suffixes, as shown by the contrasts of (22).

(22) Contrast of plural segmental suffixes *-gg*, *-EEgg*, *-AAgg*

UR-final	N SG	N PL	
/εɛl/	ḡèèl	ḡèèl-g	‘storage shelf’
	ḡēèl	ḡèèl-èègg	‘sea, town’
	téèl	téél-ààgg	‘anchor’
/aam/	kààm	kààm-g	‘nyala’
	fáàm	fáám-èègg	‘opinion’
	yāàm	yààm-ààgg	‘bride’

About 10% of nouns with root-final sonorants have more than one plural form, taking the suffixes *-EEg* and *-gg* (see examples in section 6.2.6).

6.2.3 Plural suffixes on semantically defined sets of nouns

The remaining segmental plural suffixes are listed in table 11 and are attached to

less than 5% of nouns, most of which belong to certain semantically defined sets of nouns. In these sets, the semantic correlation of the nouns with the suffix is clear, although there are many exceptions. The suffixes *-AAɖ* and *-ɖ* are commonly attached to kinship terms, and the suffixes *-əgg*, *-V⁺g* and *-⁺g*, are commonly attached to body parts. The suffix *-AAɖ* is underlyingly specified as [-round], the suffixes *-V⁺g* and *-⁺g* are specified as [+ATR], and *V* is a person marker vowel.

Table 11: Plural Suffixes on semantic sets of nouns

Suffix	Semantic set	N SG	N PL		# of nouns
<i>-AAɖ</i>	kinship nouns	mə̃ə̃ð	mə̃ə̃ð-ə̃ə̃ɖ	‘grandfather’	5
	root-final <i>-gg</i>	gàágg	gàágg-āāɖ	‘bird type’	5
<i>-ɖ</i>	kinship nouns	ābéé	ābéé-ɖ	‘maternal uncle’	5
<i>-əgg</i>	body part	fānd	fānd-ə̃gg	‘cheek’	5
<i>-⁺g</i>	body part	āāl	ə̃ə̃l-g	‘my head/our heads’	8
<i>-V⁺g</i>	body part	ə̃ə̃ɖ	ùɖ-ūgg	‘your eye/our eyes’	2

The suffix *-AAɖ* is partly conditioned by phonology and partly correlated to semantics. As for phonological conditioning, *-AAɖ* attaches to nouns whose stem ends in *gg*. The plural suffix *-Agg* in (13) which attaches to root-final *bb*, *ɖ*, *d*, *#* and *g*, cannot be used with such nouns. In addition, there are five nouns not ending in *gg* which take *-AAɖ*, four of which are kinship terms. There are many other kinship terms which do not have the suffix *-AAɖ*. Only the ten nouns of (23) have been attested with this suffix. Since the suffix vowel is underlyingly specified as [-round], it is not affected by the [round] quality of the root.

(23) Plural suffixes *-ĀĀɖ*, *-ĀĀɖ*, *-AAɖ*

UR-final	N SG	N PL	
/g/	gàágg	gàágg-āāɖ	‘bird type’
	kàmàlògg	kàmàlògg-ààɖ	‘mature woman’
	kə̃ggə̃lìgg	kə̃ggə̃lìgg-ə̃ə̃ɖ	‘cock’
	kúūrúúgg	kúūrúúgg-ə̃ə̃ɖ	‘rodent type’
	ə̃ðə̃gg	ə̃ðə̃gg-ə̃ə̃ɖ	‘greed’
/m/	máám	máám-ààɖ	‘paternal aunt’
/n/	bèèn	bèèn-āāɖ	‘gossip’
/ð/	mə̃ə̃ð	mə̃ə̃ð-ə̃ə̃ɖ	‘grandfather’
	yààð	yààð-āāɖ	‘sister’
/w/	bààð	bààw-āāɖ	‘father’

The segmental suffix *-ɖ* attaches to five nouns with root-final vowels, which are kinship terms or insects, two of which are compound nouns with the morpheme *maa* ‘mother’²⁷.

²⁷ Because of limited data collection, it was not determined if the word for ‘mother’ attaches

(24) **Plural suffix -ḍ, -ḍ̄**

UR-final	N SG	N PL	
/a/	ṭááðà	ṭááðà-ḍ	‘grandmother’
	bððḡmà	bððḡmà-ḍ	‘insect type’
/aa/	fùùlmàà	fùùlmàà-ḍ	‘insect type (compound noun)’
	wîilmāā	wîilmāā-ḍ	‘ant name (compound noun)’
/εε/	ābéé	ābéé-ḍ	‘maternal uncle’

Although most plural suffixes are underlyingly unspecified for [ATR], the suffix *-agg* is underlyingly [+ATR] and spreads its [ATR] quality to the noun root {M3}. Similar to its unspecified equivalent *-Agg*, the suffix *-agg* attaches to root-final obstruents. Only the five nouns of (25) have been attested with this suffix, three of which are body parts.

(25) **Plural suffixes -agg, -āgg, -ágg**

Vowel of UR	N SG	N PL	
/ε/	tēēḡ	tīīḡ-āgg	‘riddle’
	wéé(s)	wís-āgg	‘house’
	bēḡḍ	birḍ-āgg	‘anus’
/a/	fāḡḍ	fōḡḡ-ágg	‘cheek’
	sārāḡḡ	sòḡḡḡ-āgg	‘crotch line’

The segmental plural suffix *-⁺gg* is underlying [+ATR] and spreads its [ATR] quality to the noun root {M3}. Similar to its unspecified equivalent *-gg*, the suffix *-⁺gg* attaches to final sonorants and to final vowels. Only the nine nouns of (26) have been attested with this suffix, four of which are inherently possessed body part nouns. Inherently possessed body part nouns are a subset of inalienable nouns and are discussed in section 5.2.4.

(26) **Plural suffixes -⁺gg, -⁺gḡ**

Vowel of UR	UR-final	N SG	N PL	
/ɔ/	/l/	fɔl	fūl-g	‘hole’
/ɔ/	/l/	ḍòl	ḍùl-g	‘penis’
/ɔ/	/ɔ/	gðà-ḍ ²⁸	gù- ⁺ gg	‘excrement’
/a/	/a/	kālāā-ḍ	kālāā- ⁺ gg	‘tongue’
	/l/	āāl	àəl-g	‘my head/our heads’
	/ɲ/	āāɲ	àəɲ-g	‘my back/our backs’
	/ŋ/	āāŋ	àəŋ-g	‘my body/our bodies’
	/l/	āāl-g	àəl-g	‘my stomach/our stomachs’

In nouns with [+ATR] root vowel quality and root-final sonorant, it cannot be

the suffix *-ḍ* other than in insect nouns.

²⁸ Irregular vowel change from *a* to *ɔ*.

determined whether the suffix is *-g* or *-⁺g*. In nouns such as *ʃiŋʃil / ʃiŋʃil-g* ‘bird type’, *lɔ̀ɔ̀ð / lɔ̀ɔ̀ð-g* ‘male singing voice’, and *lɔ̀ŋ / lɔ̀ŋ-g* ‘boomerang’, the [+ATR] quality could be underlyingly present in the suffix as well as in the root, or only present in the root. In the nouns of (26), [+ATR] quality spreads to the root of the plural noun {M3}, giving evidence of the underlyingly [+ATR] quality of the suffix.

There is also a suffix that is underlyingly specified as [+ATR], but unspecified for any other vowel features. There are seven inherently possessed body part nouns discussed in 5.2.4 for which the root is only a consonant. A possessive person marker long vowel *VV-* is prefixed to the root in singular forms. In the plural form, two of these nouns take the plural suffix *-V⁺gg*, where *V* is the person marker vowel, along with a short person marker prefix vowel *V-*. In (27), the possessive paradigms of these two body parts are shown. There are many body part nouns which do not take the suffixes *-əgg*, *-⁺g*, or *-V⁺gg*.

(27) **Plural suffix *-V⁺gg***

	N SG, SG person	N PL, SG person	N PL, PL person	
(a)	<i>āā-d</i> 1sPs	<i>á-d-əgg</i> 1sPp	<i>à-d-əgg</i> 1pPp	‘eye’
	<i>ōō-d</i> 2sPs	<i>ú-d-ūgg</i> 2sPp	<i>ù-d-ūgg</i> 2pPp	
	<i>ēē-d</i> 3sPs	<i>í-d-īgg</i> 3sPp	<i>ì-d-īgg</i> 3pPp	
(b)	<i>ââ-s</i> 1sPs	<i>á-s-əgg</i> 1sPp	<i>à-s-əgg</i> 1pPp	‘hand’
	<i>ôô-s</i> 2sPs	<i>ú-s-ūgg</i> 2sPp	<i>ù-s-ūgg</i> 2pPp	
	<i>êê-s</i> 3sPs	<i>í-s-īgg</i> 3sPp	<i>ì-s-īgg</i> 3pPp	

6.2.4 Irregular plural formation

There are also a handful of nouns with various other plural formations, as shown in the exhaustive list of (28). In (a-b), the root-final vowel is elided; in (c), the last root vowel is assimilated to the vowel of the suffix; in (d), the underlying final consonant is not realized in the singular form; in (e), the plural form has the

(28) **Irregular plural formation**

	N SG	N PL	
(a)	<i>cɪ̄j̄j̄í</i>	<i>cɪ̄j̄j̄-ɔ̀ɔ̀gg</i>	‘diarrhea’
(b)	<i>əŋə</i>	<i>əŋ-g</i>	‘young girl’
(c)	<i>gàfāj̄j̄</i>	<i>gàfē-ēgg</i>	‘lung’
(d)	<i>wéé</i>	<i>wís-əgg</i>	‘house’
(e)	<i>kɔ̀r-d</i>	<i>kɔ̀r-ɔ̀ɔ̀gg</i>	‘bird type’
(f)	<i>nāā</i>	<i>nālg</i>	‘girl’
(g)	<i>ʃāā</i>	<i>ʃāālgé</i>	‘son, boy, person’
(h)	<i>gɔ̀à-d</i>	<i>gùù-gg</i>	‘excrement’
(i)	<i>ʃɪ̄n</i>	<i>ʃɔ̀gg</i>	‘man, person’
(j)	<i>ʃèèm</i>	<i>ʃègg</i>	‘thing, something’
(k)	<i>cél</i>	<i>cáāl-g</i>	‘dancing group member’

suffix *-AAgg* where the vowel *AA* takes the round feature of the root; and in (f-k), various other things take place.

6.2.5 One-form lexemes

There are both singular nouns without plural forms and plural nouns without singular forms. These nouns are morphologically similar to other singular and plural nouns, and adjectives agree in number with them.

The singular nouns of (29) do not have corresponding plural forms and can be modified by singular adjectives. They are referents found as single items, things found in quantities, abstract ideas, or items difficult to count. The list is not exhaustive but representative of the approximately 15% of nouns without plural forms in the language.

(29) Singular nouns

N SG		N SG	
k̄r̄ḁ	<i>hill name</i>	rúùm	‘fog’
m̄ḁggḁr	<i>area name</i>	múū	‘mosquito’
múùm	<i>village name</i>	k̄ḁḁḁ	‘a quantity of milk’
k̄ḁḁm̄	‘good luck stone’	lúúsúḁ	‘sweat’
púúf̄ḁ	‘leprosy’	m̄álḁḁḁ	‘nose mucus’
s̄ḁn	‘skin disease’	ḁḁḁḁ	‘yeasted sorghum’
c̄ḁḁḁḁ	‘disease type’	b̄āāl̄ḁḁ	‘stripe’
ḁḁḁḁ	‘poverty’	ùù	‘air’
r̄ḁḁḁ	‘mud’	íȳḁḁ	‘animal fat’
ḡḁḁḁḁ	‘dung’	k̄āār̄ḁ	‘bacteria’
ḁḁḁḁḁḁ	‘dust’	s̄ḁḁḁ	‘hunting’
b̄ùil	‘moisture’	f̄ḁȳḁḁ	‘beneficiary’
ḡḁḁm̄ḁl	‘forest, woods’	s̄ḁḁḁḁḁ	‘wealth, pride’
m̄ál̄ḁ	‘bee wax’	l̄ḁf̄ḁ	‘magic’
m̄ḁḁḁḁḁḁ	‘leafy vegetable’	l̄ḁḁḁḁ	‘singing voice’

The plural nouns of (30) do not have corresponding singular forms and can be modified by plural adjectives. They are representative of the approximately 10% of nouns without singular forms in the language. Since all plural nouns end in a velar plosive, these also can be analyzed as having the noun plural suffix *-gg* or the common verb nominalizer clitic *=gg*. Verbal nouns are discussed in 10.10.

(30) Plural nouns

N PL		N PL	
t̄ḁḁḁḁḁ	‘comb’	īḁḁḁ	‘milk’
b̄ḁḁḁḁḁḁ	‘skin disease’	ḁḁḁḁḁḁ	‘ash’

Plural nouns (continued)

bilḍḍgg	‘worms (disease)’	fēgg	‘water’
íyáágg	‘oil’	márḥsēēgg	‘disease type’
ḵūgg	‘urin’	ḍùrsìgg	‘bad smell’
cḥḥgg	‘holy place’	kāḵēēgg	‘group’

6.2.6 Multiple forms

About 5% of nouns have two plural forms or two singular forms. Whereas the segmental suffixes differ between the multiple forms, the tone pattern remains the same as far as allowed by the tone rules described in section 6.3.2. This section gives all attested nouns with multiple forms as spoken by the main language resource person. Other speakers sometimes list multiple forms for other nouns, although the multiple suffixes which attach to nouns do not change as much from speaker to speaker.

The most common noun type taking multiple forms has the plural suffix *-gg* or *-EEgg*.

(31) **Variation between plural suffixes *-gg* and *-EEgg***

	N SG	N PL 1	N PL 2	
(b)	bààm	bààm-g	bààm-èègg	‘bird type’
(d)	cēyám	cēyám-g	cēyám-ēēgg	‘aged tobacco’
(h)	fḥḍḍr	fḥḍḍr-g	fḥḍḍr-ēēgg	‘nose’
(i)	jíl	jíl-g	jíl-īgg	‘cricket’
(j)	kāāē	kāāē-gg	kāāy-ēēgg	‘witch doctor’
(k)	kābbàr	kābbàr-g	kābbàr-ēēgg ²⁹	‘wing, armpit’
(l)	kàḍḍēl	kàḍḍēl-g	kàḍḍēl-éégg	‘leader’
(p)	lēēḍ	lēēḍ-g ³⁰ [lēēg,]	lēēḍ-éégg	‘drill for planting’
(q)	lúḵ	lúḵ-g	lúḵ-īgg	‘boomerang’
(r)	lúúḵ	lúúḵ-g	lúúḵ-īgg	‘water pot’
(s)	ḵḥḥm	ḵḥḥm-g	ḵḥḥm-īgg	‘chin’
(t)	ḵéēḵ	ḵéēḵ-g	ḵéēḵ-èègg	‘spear type’
(u)	rāāē	rāāē-gg	rāāy-éégg	‘quarrel, war’
(v)	ḵéér	ḵéér-g	ḵéér-èègg	‘carving tool’
(w)	màḵḵil	màḵḵil-g	màḵḵil-īgg	‘rainbow, spirit’
(x)	bḥḥḍ	bḥḥḍ-g [bḥḥg,]	bḥḥḍ-īgg	‘salt’
(y)	lḥḥr	lḥḥr-g	lḥḥr-èègg	‘cervix, womb’

²⁹ As discussed in 6.4, the tone pattern in plural body parts is prescribed by a plural possessive L(M) tone morpheme and therefore can differ from the underlying form.

³⁰ As discussed in 6.3.2, Mid tone on vowel-less suffixes is not assigned following root-final Low tone.

There are two nouns attested to take either the plural suffix *-gg* or *-AAgg*.

(32) **Variation between plural suffixes *-gg* and *-AAgg***

N SG	N PL	N PL	
láál	láál-g	láál-áāgg	‘pumpkin type’
cééḏ	cééḏ-g	cééw-āāgg	‘lame person’

There is one noun attested to take either the plural suffix *-gg* or *-Agg*.

(33) **Variation between plural suffixes *-gg* or *-Agg***

N SG	N PL	N PL	
ēēḏ	ēēḏ-g [ēēg.]	ēēḏ-āgg	‘net’

There are two nouns attested to take either the plural suffix *-gg* or *-ḡ*.

(34) **Variation between plural suffixes *-gg* and *-ḡ***

N SG	N PL	N PL	
fùlmaà	fùlmaà-gg	fùlmaà-ḡ	‘insect type’
bòḡmà	bòḡmà-gg	bòḡmà-ḡ	‘insect type’

There is one noun attested to take the singular suffix *-ḡ* with plural suffix *-gg* or *-EEgg*.

(35) **Singular suffix *-ḡ* with variation between plural suffixes *-gg* and *-EEgg***

N SG	N PL 1	N PL 2	
gèūr-ḡ	gèūr-g	gèūr-īgg	‘stomach, pouch’

In some nouns, the status of the final *ḡ* is varying. Either it functions as part of the stem and is retained in the plural, or it functions as the singular marker and is not present in the plural. There are four nouns attested to take the plural suffix *-Agg* or have a singular and plural suffix. In (36), the *ḡ* of *nḡnḡ* ‘demon’ can either be a root-final segment or a singular suffix; similarly for the other forms of (36).

(36) **Plural suffix *-Agg* or Singular suffixes *-ḡ* with Plural suffixes *-gg***

N SG	N PL 1	N SG	N PL 2	
nḡnḡ	nḡnḡ-ḡgg	nḡn-ḡ	nḡn-g	‘demon’
kāḡnāāḡ	kāḡnāāḡ-ḡgg	kāḡnāā-ḡ	kāḡnāā-gg	‘bowl’
bḡrḡ	bḡrḡ-ḡgg	bḡr-ḡ	bḡr-ḡḡgg	‘lion’
kḡrḡ	kḡrḡ-ḡgg	kḡr-ḡ	kḡr-ḡḡgg	‘bird type’

There are two nouns attested to take the plural suffix *-EEgg* or have a singular and plural suffix.

(37) **Plural suffix *-EEgg* or Singular suffix *-ɔ̄* with Plural suffix *-gg***

N SG	N PL 1	N SG	N PL 2	
l̄ggɔ̄ɔ̄ɔ̄	l̄ggɔ̄ɔ̄ɔ̄-ēēgg	l̄ggɔ̄ɔ̄-ɔ̄	l̄ggɔ̄ɔ̄-gg	‘locust’
àbbùùɔ̄	àbbùùɔ̄-ìgg	àbbùù-ɔ̄	àbbùù-gg	‘butterfly’

Finally, there are four nouns attested to have two singular forms. The first three nouns of (38) take the same plural form for both singular forms. However, the fourth noun also has two plural forms corresponding to the two singular forms.

(38) **Two Singular forms**

N SG 1	N SG 2	N PL 1	N PL 2	
à̀r	à̀r-g	à̀r-ēēg		‘priest, chief’
jíŋ-ɔ̄	jíŋ-íɔ̄	jíŋ-g		‘louse’
gàfā-ɰ	gɔ̄fɔ̄	gàfē-ēgg		‘lung’
búli-ɰ	búli-ɔ̄	búli-ìgg	búli-gg	‘worm’

6.3 Tone in noun plural formation

Thus far we have merely described the segments of noun plural formation. Now we turn to a description of tone in noun plural formation. In 6.3.1, we list the underlying tonal allomorphs of noun suffixes; in 6.3.2, we discuss tone assignment in plural formation; and in 6.3.3, a few plural nouns with irregular tone assignment are presented.

6.3.1 Tonal allomorphs of suffixes

Five out of six singular suffixes have no underlying tone and therefore have no effect on the singular noun tone. However, the suffix *-Aɔ̄* may have no underlying tone as in *kɔ̄l-ɔ̄ɔ̄/ kɔ̄l-g* ‘egg’ or Mid tone as in *níl-ɔ̄ɔ̄/níl-g* ‘intestine’. Singular suffixes with vowels having no underlying tone (*-Aɔ̄*, *-AAɔ̄*, *-Eɔ̄*) are assigned the root-final tone {M5}.

(39) **Singular suffixes *-Aɔ̄*, *-AAɔ̄* and *-Eɔ̄* attached to root-final sonorants**

Suffixes	N SG	N PL	
-ɔ̄	wéráá-ɔ̄	wéráá-gg	‘tribe member’
-g	à̀r-g	à̀r-ēēg	‘priest, chief’
-ɰ	pēbbēē-ɰ	pēbbēē-gg	‘tree type’
-Aɔ̄	níl-ɔ̄	níl-g	‘intestine’
-Aɔ̄	kɔ̄l-ɔ̄	kɔ̄l-g	‘egg’
-AAɔ̄	cāl-āāɔ̄	cāl-g	‘testicle’
-Eɔ̄	jíŋ-íɔ̄	jíŋ-g	‘louse’

Segmental plural suffixes have up to three tonal allomorphs. Suffixes without

vowels have a form with no underlying tone as well as a form with underlying Mid tone. Suffixes with short vowels have a form with no underlying tone, a form with Mid tone, and a form with High tone. Suffixes with long vowels have a form with no underlying tone, a form with Mid tone, and a form with High-Mid tone. There is only one form of the suffix $-V^+g$, which has underlying Mid tone, and only one form of the suffix $-OOgg$, which has no underlying tone. The tonal allomorphs of plural suffixes are listed in table 12 and examples follow.

Table 12: Tonal allomorphs of noun plural suffixes

No underlying tone	Mid tone	High or High-Mid tone
-gg	- $\bar{g}g$	- $\acute{A}gg$
-Agg	- $\bar{A}gg$	- $\acute{E}\bar{E}gg$
-EEgg	- $\bar{E}\bar{E}gg$	- $\acute{A}\bar{A}gg$
-AAgg	- $\bar{A}\bar{A}gg$	- $\acute{A}\bar{A}d$
-AAD	- $\bar{A}\bar{A}d$	- $\acute{A}\bar{A}d$
-d	- \bar{d}	
-əgg	- $\bar{ə}gg$	- $\acute{ə}gg$
- ^+g	- ^+g	
-OOgg	- V^+g	

In (40), examples of nouns with each of the tonal allomorphs are given. The plural suffix $-gg$ can have no underlying tone as in (a,c), where the plural form surfaces with final High tone, the same as in the singular form. Or the plural suffix $-gg$ can have underlying Mid tone as in (b,d) which causes the plural form to have final High-Mid tone. Similarly, other nouns of (40) show contrastive underlying tone in the other segmental suffixes.

(40) Tonal allomorphs of noun plural suffixes with examples

Suffix	Tone	N SG	N PL	
(a)	-gg	léél	léél-g	'grass'
(b)	- $\bar{g}g$	káál	káál-g	'house fence'
(c)	- $\bar{g}g$	mōdō	mōdō-gg	'locust'
(d)	- $\bar{g}g$	fōédá	fōédá-gg	'seed'
(e)	-Agg	lèṅḍ	lèṅḍ-əgg	'tree type'
(f)	- $\bar{A}gg$	bàṅḍ	bàṅḍ-āgg	'tree type'
(g)	- $\acute{A}gg$	mīīḍ	mīīḍ-ágg	'stone'
(h)	-EEgg	ḍààr	ḍààr-èègg	'eagle'
(i)	- $\bar{E}\bar{E}gg$	cèèr	cèèr-ēēgg	'singer'
(j)	- $\acute{E}\bar{E}gg$	rāāē	rāāy-éēgg	'quarrel, war'
(k)	- $\bar{A}\bar{A}gg$	téèl	téél-ààgg	'anchor'
(l)	- $\acute{A}\bar{A}gg$	jàáḍ	jàáḍ-āagg	'old clothes'
(m)	- $\acute{A}\bar{A}gg$	láál	láál-áagg	'pumpkin type'

(41) **Rightward tone spreading to unassigned suffix vowel**

	Root tone	Suffix	N SG	N PL	
(a)	H	-Agg	kás	kás-ógg	‘sorghum type’
(b)		-gg/-EEgg	ún-g	ún-ígg	‘tear’
(c)	M	-Agg	māāḍ	māāḍ-āgg	‘snake type’
(d)		-EEgg	kōr	kōr-ēēgg	‘word, speech’
(e)		-ḍ/-EEgg	bāār-ḍ	bāār-ēēgg	‘abdomen, waist’
(f)		-aaḍ/-gg	cāl-āāḍ	cāl-g	‘testicle’
(g)		-əgg	tēēnḍ	tīīnḍ-əgg	‘riddle’
(h)		-ḍ/-OOgg	kōr-ḍ	kōr-ōōgg	‘bird type’
(i)	L	-Agg	jèèrs	jèèrs-əgg	‘hippopotamus’
(j)		-EEgg	bàām	bàām-ēēgg	‘bird type’
(k)		-ḍ/-AAgg	bàr-ḍ	bàr-ààgg	‘lion’
(l)		-AAḍ	kàmàlògg	kàmàlògg-ààḍ	‘mature woman’
(m)	HL	-Agg	jílèbb	jílèbb-əgg	‘water spring’
(n)	HM	-Agg	búlūūrs	búlūūrs-əgg	‘bird type’
(o)	ML	-Agg	bāgdàrs	bāgdàrs-əgg	‘lizard’
(p)	LM	-Agg	àbbāḍ	àbbāḍ-āgg	‘tree type’
(q)	MHL	-AAḍ	kəggóliigg	kəggóliigg-ààḍ	‘cock’

However, there are a few nouns where the tone of the root is changed in the plural form. When a suffix with a vowel does not have underlying tone, and when there are two tones assigned to the root-final syllable, the second tone of the root-final syllable is delinked and reassigned to the suffix vowel, in accordance with {M6} in 3.4.1.

The nouns of (42) each have two tones assigned to the root-final syllable, and each

(42) **Second of two root-final tones reassigned to suffix vowel with no underlying tone**

	Root tone	Suffix	N SG	N PL	
	HL	-Agg	ílj	ílj-əgg	‘beeswax’
		-EEgg	fáām	fáám-èègg	‘opinion’
		-AAgg	téél	téél-ààgg	‘anchor’
		-AAḍ	máām	máám-ààḍ	‘paternal aunt’
	HM	-Agg	sííjj	sííjj-əgg	‘tree type’
		-AAgg	cééw	cééw-āāgg	‘lame person’
	ML	-Agg	kāpnāāḍ	kāpnāāḍ-āgg	‘bowel for hot foot’
		-EEgg	gōmūūr	gōmūūr-ììgg	‘dove’
		-EEgg	lōōr	lōōr-èègg	‘cervix’
	LM	-Agg	gōn	gōn-ōōgg	‘responsibility’
		-ḍ/-EEgg	gòūr-ḍ	gòūr-ììgg	‘stomach pouch’
	LHL	-EEgg	bàsáār	bàsáár-èègg	‘lie’
		-EEgg	jòfóōr	jòfóōr-èègg	‘desire’

can be analyzed as having no underlying tone in the suffix(es). The second tone of the root-final syllable is delinked and reassigned to the suffix vowel.

The nouns *ḍāḍḍ/ḍāḍḍ-àgg* ‘fertile soil’ and *ṭáḍr/ṭáḍr-èègg* ‘lizard’ contrast with the nouns of (42) in that the root-final tone is not delinked and thus {M6} does not apply. The nouns *káēḍ/káēḍ-āgg*, *káéḍ-āgg* ‘cup, spoon’ and *gḍmūūr/gḍmūūr-ìgg*, *gḍmūūr-ìgg* ‘dove’ have two plural forms with differing tone. The plural form *káēḍ-āgg* is analyzed as having Mid tone in the suffix which makes it unnecessary for the root-final Mid tone to delink and reattach. Similarly, the plural forms *ḍāḍḍ-àgg*, *ṭáḍr-èègg*, and *gḍmūūr-ìgg* are analyzed as having Mid tone in the suffix which makes it unnecessary for the root-final Low tone to delink and reattach. As discussed below, the suffix Mid tone is analyzed to assimilate to root-final Low tone, in accordance with the tone lowering rule {M9} of 3.4.3.

Noun suffixes having vowels with Mid tone

In (43), noun suffixes with vowels having Mid tone are attached to nouns with various root tone melodies. Mid tone surfacing on suffixes attached to nouns with root-final Mid tone as in *māāḍ/māāḍ-āgg* ‘snake type’ is ambiguous since the suffix could have underlying Mid tone or no underlying tone. In nouns with only Low tone assigned to the root-final syllable as in *jèèrs/jèèrs-àgg* ‘hippopotamus’, *ḵílàbb/ḵílàbb-àgg* ‘water spring’, and *bāgdàrs/bāgdàrs-àgg* ‘lizard’, the suffix could have no underlying tone or Mid tone which assimilates to the root-final Low tone, in accordance with the tone lowering rule {M9}.

(43) Mid tone on suffix vowel of various suffixes

Root tone	Suffix	N SG	N PL	
H	-Āgg	órónḍ	órónḍ-ōgg	‘fermented milk’
	-ĒĒgg	póóḵ	póóḵ-ēēgg	‘knife sheath’
	-ĀĀgg	jááḍ	jááḍ-āāgg	‘old clothes’
	-ōgg	wéé(s)	wís-ōgg	‘house’
	-Āḍ/-gg	ḵíl-ḍ	ḵíl-g	‘intestine’
M	-Āgg	māāḍ	māāḍ-āgg	‘snake type’
	-ĒĒgg	kūn	kūn-īgg	‘hunger’
	-ĀĀḍ	ḍḍōgg	ḍḍōgg-ḍḍ	‘greed’
	-ōgg	tēēḍ	tīīḍ-ōgg	‘riddle’
	-ĀĀḍ/-gg	cāl-āāḍ	cāl-g	‘testicle’
L	-Agg	jèèrs	jèèrs-àgg	‘hippopotamus’
	-EEgg	bààm	bààm-èègg	‘bird type’
	-ḍ/-ĀAgg	bàr-ḍ	bàr-ḍḍgg	‘lion’
	-ĀĀḍ	kàmàlògg	kàmàlògg-àḍ	‘mature woman’
HM	-Agg	káēḍ	káēḍ-āgg	‘cup, spoon’
HL	-ĒĒgg	ṭáḍr	ṭáḍr-èègg	‘lizard’
	-Agg	ḵílàbb	ḵílàbb-àgg	‘water spring’

Root tone	Suffix	N SG	N PL	
MH	- <u>Āgg</u>	dɔd	dɔd-ɔgg	'bird type'
ML	- <u>Agg</u>	ɖā̀ɖ	ɖā̀ɖ-àgg	'fertile soil'
	- <u>Agg</u>	bāgdàrs	bāgdàrs-àgg	'lizard'
LH	- <u>EEgg</u>	gɔmùr	gɔmùr-ìgg	'dove'
	- <u>Āgg</u>	bìmiríj	bìmiríj-ɔgg	'bird type'
HMH	- <u>ĀĀɖ</u>	gàágg	gàágg-āāɖ	'bird type'
	- <u>Āgg</u>	lúliɖ	lúliɖ-ɔgg	'snake type'
HLH	- <u>ĀĀɖ</u>	kúuríúúgg	kúuríúúgg-āāɖ	'rodent type'
	- <u>ɖ/-gg</u>	rúnjú-ɖ	rúnjú-gg	'bird type'

However, in nouns with two tones on the root-final syllable such as *táɖr/táɖr-èègg* 'lizard', *káēɖ/káēɖ-āgg* 'cup, spoon', *ɖā̀ɖ/ɖā̀ɖ-àgg* 'fertile soil', the suffix must have underlying tone. If it had no underlying tone, the second of the two root-final tones would delink and reassign to the suffix {M6} as in the nouns *ilj/ilj-àgg* 'beeswax', *síj/síj-ɔgg* 'tree type', and *kānāāɖ/kānāāɖ-āgg* 'bowel' of (42). There are no plural nouns surfacing with Mid suffix tone following either ML or HL tone on the root-final syllable. Therefore, the nouns *táɖr/táɖr-èègg* 'lizard' and *ɖā̀ɖ/ɖā̀ɖ-àgg* 'fertile soil' are analyzed to have Mid tone in the suffix which assimilates to preceding Low tone {M9}.

Mid tone does surface when attached to nouns with Low root tone melodies such as *bənj/bənj-ɔgg* 'pulp'. However, as discussed below, this suffix tone is analyzed as underlying High tone which lowers to Mid following root-final Low tone, also in accordance with rule {M9}.

Noun suffixes having vowels with High or High-Mid tone

High tone in noun suffixes is less frequent than Mid tone and follows fewer root

(44) High and High-Mid tone on suffix vowel of various suffixes

Root tone	Suffix	N SG	N PL	
H	- <u>Āgg</u>	kás	kás-ɔgg	'sorghum type'
	- <u>ÉĒgg</u>	lún	lún-ígg	'boomerang'
	- <u>ĀĀgg</u>	lál	lál-āāgg	'pumpkin type'
M	- <u>Āgg</u>	fānɖ	fānɖ-ɔgg	'cheek'
	- <u>ÉĒgg</u>	múfúr	múfúr-ígg	'gazelle type'
	- <u>ĀĀɖ</u>	māāɖ	māāɖ-āāɖ	'grandfather'
L	- <u>Āgg</u>	bənj	bənj-ɔgg	'pulp'
	- <u>ɖ/-ÉĒgg</u>	mòggòr-ɖ	mòggòr-ēēgg	'stirring stick'
LM	- <u>ĀĀgg</u>	kùl	kùl-āāgg	'clan member'
	- <u>ĀĀɖ</u>	bèèn	bèèn-āāɖ	'gossip'
	- <u>Āgg</u>	ɖiwɪnɖ	ɖiwɪnɖ-ɔgg	'grass type (comp)'

tone melodies than Mid tone. In (44), noun suffixes with vowels having High or High-Mid tone are attached to nouns with four different root tone melodies.

In accordance with the suffix tone lowering rule {M9}, suffix-initial High tone becomes Mid when attached to a root such as *bàŋŋ/bàŋŋ-àgg* ‘pulp’ with Low tone, or in the other nouns in (44) with Low tone melody.

The root tone melodies HL and ML are missing from the examples of (43-44). For unknown reasons, nouns with these root-tone melodies do not attach suffixes with initial High tone which would surface as Mid tone {M9}. The only noun with a High tone suffix which attaches to a noun with more than one tone in the root tone melody is *dìwīnd/dìwīnd-ógg* ‘grass type (lit. rat’s ear)’ which is a compound noun.

Example (45) shows the resulting combinations of suffix tone and root-final tone for nouns attaching suffixes with vowels. The noun *kós/kós-ógg* ‘sorghum type’ of (a) and (c) could have High tone or no underlying tone in the suffix; either analysis results in the same surface tone. The noun *māāḍ/māāḍ-āgg* ‘snake type’ of (e) and (f) could have Mid tone or no underlying tone in the suffix. The noun *jàèrs/jàèrs-àgg* ‘hippopotamus’ of (h) and (i) could have Mid tone or no underlying tone in the suffix, as suffix Mid tone assimilates to preceding Low tone {M9}.

(45) **Resulting combinations of vowel suffix tone and root-final tone**

	Root tone	Suffix tone	N SG	N PL	
(a)	H	H	kós	kós-ógg	‘sorghum type’
(b)		M	órónḍ	órónḍ-ògg	‘fermented milk’
(c)		none	kós	kós-ógg	‘sorghum type’
(d)	M	H	mīīḍ	mīīḍ-ógg	‘stone’
(e)		M	māāḍ	māāḍ-āgg	‘snake type’
(f)		none	māāḍ	māāḍ-āgg	‘snake type’
(g)	L	H	bàŋŋ	bàŋŋ-ògg	‘pulp’
(h)		M	jàèrs	jàèrs-àgg	‘hippopotamus’
(i)		none	jàèrs	jàèrs-àgg	‘hippopotamus’

Vowel-less noun suffixes having no underlying tone

The nouns of (46) can be analyzed as having no underlying tone in the suffixes, as the tone of the root is the same in singular and plural forms.

(46) **No underlying tone on suffixes without vowels**

Root tone	Suffix	N SG	N PL	
H	-gg	ám	ám-g	‘bone’
	-gg	ṭééfá	ṭééfá-gg	‘leaf, illness type’
	-gg	sáá	sáá-gg	‘wine’

Root tone	Suffix	N SG	N PL	
M	-gg	bāāl	bāāl-g	'cave'
	-gg	wāā	wāā-gg	'shade, help'
	-ʃ/-gg	pēbbēē-ʃ	pēbbēē-gg	'tree type'
L	-gg	wèlèɲ	wèlèɲ-g	'sour/bitter taste'
	-gg	bùù	bùù-gg	'chicken coop roof'
	-ɖ	bòðŋmà	bòðŋmà-ɖ	'insect type'
HL	-gg	séèn	séèn-g	'ruler'
	-gg	órɖàà	órɖàà-gg	'army leader'
	-ɖ	ʃááðà	ʃááðà-ɖ	'grandmother'
HM	-gg	ʃórgāāl	ʃórgāāl-g	'bird type'
	-gg	páʃʃōō	páʃʃōō-gg	'star'
	-ɖ/-gg	bórē-ɖ	bórē-gg	'eye matter'
ML	-gg	bāāl	bāāl-g	'instrument type'
	-gg	būù	būù-gg	'tree type'
	-ɖ/-gg	bāsà-ɖ	bāsà-gg	'large intestine'
LM	-gg	gòèn	gòèn-g	'metal worker'
	-gg	gùlɖū	gùlɖū-gg	'tree trunk, wood'
MH	-gg	bāár	bāár-g	'tribe member'
	-gg	lēōɖá	lēōɖá-gg	'animal'
	-ʃ/-gg	māāy-ʃ [māāʃ.ʃ]	māāē-g	'cucumber'
HLM	-gg	áàrēē	áàrēē-gg	'grass type'
	-ɖ	wîlmāā	wîlmāā-ɖ	'ant name (comp)'
MHM	-gg	cēggélūū	cēggélūū-gg	'root type'
MHL	-gg	ūŋúràð	ūŋúràð-gg	'pumpkin'
LHL	-gg	ɖùùl	ɖùùl-g	'instrument type'
	-gg	gàɖáàè	gàɖáàè-gg	'basket'

Vowel-less noun suffixes having Mid tone

In (47), noun suffixes having Mid tone are attached to nouns with four different root tone melodies, all of which end in High tone. Since the suffix has no vowel, the Mid tone of the suffix is assigned to the root-final syllable.

(47) Mid tone on suffixes without vowels

Root tone	Suffix	N SG	N PL	
H	-gg	ɖáár	ɖáár-g	'throne'
	-gg	kúúfú	kúúfú-gg	'ground sesame'
	-gg	wááyáá	wááyáá-gg	'bird type'
	- ⁺ gg	fól	fūl-g	'hole'
	-ɖ/-gg	wéráá-ɖ	wéráá-gg	'tribe member'

Root tone	Suffix	N SG	N PL	
MH	-gg	sāmán	sāmán-g	‘sorghum storehouse’
	-gg	fōyḍá	fōyḍá-gg	‘planting seed’
	-ḍ	ābéé	ābéé-ḍ	‘maternal uncle’
	-ḍ/-gg	mōréé-ḍ	mōréé-gg	‘vegetable type’
LH	-gg	àggáár	àggáár-g	‘rider, hunter’
HLH	-ḍ/-gg	rúḡùú-ḍ	rúḡùú-gg	‘bird type’

Mid tone in vowel-less suffixes does not surface following root-final Low tone, and Mid tone is ambiguous with no underlying tone in suffixes when following root-final Mid tone. However, Mid tone in vowel-less suffixes does surface following root-final High tone.

High tone in vowel-less suffixes does not surface following root-final Mid or Low tone, and High tone is ambiguous with no underlying tone in suffixes when following root-final High tone. Based on these limitations, there is no reason to posit underlying High tone on vowel-less suffixes.

Example (48) shows the resulting combinations of suffix tone and root-final tone for nouns attaching vowel-less suffixes. The noun *bāāl/ bāāl-g* ‘cave’ of (c-d) could have Mid tone or no underlying tone in the suffix. The noun *wèlèḡ/ wèlèḡ-g* ‘sour taste’ of (e-f) could have Mid tone or no underlying tone in the suffix, as suffix Mid tone assimilates to preceding Low tone or is not assigned {M9}.

(48) **Resulting combinations of suffix tone and root-final tone for vowel-less suffixes**

	Root tone	Suffix tone	N SG	N PL	
(a)	H	M	ḍáár	ḍáár-g	‘throne’
(b)		none	ám	ám-g	‘bone’
(c)	M	M	bāāl	bāāl-g	‘cave’
(d)		none	bāāl	bāāl-g	‘cave’
(e)	L	M	wèlèḡ	wèlèḡ-g	‘sour/bitter taste’
(f)		none	wèlèḡ	wèlèḡ-g	‘sour/bitter taste’

6.3.3 Nouns with irregular tone assignment

Outside regular tone assignment which is about 95% of nouns, there is a set of nouns changing to Low tone in the plural form, as well as a scattering of other nouns with unpredictable tone.

The nouns of (49) have Mid-Low root tone and vowel suffixes. In the plural form these nouns surface with Low tone in both the root and suffix syllables.

(49) **Nouns with ML root tone becoming L**

Suffix	Noun SG	Noun PL		
-EEgg	ḍāḍ	ḍāw-èègg	‘monkey’	
	ḍēḍl	ḍēḍl-èègg	‘lake’	
	ḍḍḍr	ḍḍḍr-ìigg	‘snake type’	
	gāàl	gāàl-èègg	‘falcon’	
	gāàr	gāàr-èègg	‘hog’	
	māàr	māàr-èègg	‘unmarried woman’	
	māàw	māàw-èègg	‘gazelle’	
	mḍl	mḍl-ìigg	‘bamboo drinking straw’	
	nāḅ	nāḅ-èègg	‘crocodile’	
	mḍsḍr	mḍsḍr-èègg	‘horse’	
	āḅàr	āḅàr-èègg	‘rope bed’	
	-Agg	sīndḍ	sīnd-ḍgg	‘guest’
		kāàndḍ	kāànd-ḍgg	‘water-carrying stick’
-AAgg	yāàm	yāàm-àagg	‘bride’	

In previous sections, we have seen several nouns with ML root tone melody that contrast with the nouns of (49). The noun *bāgdārs/bāgdārs-agg* ‘lizard’ of (41) and the nouns *lḍḍr/lḍḍr-èèg* ‘cervix’ and *kāḅnāḍḍ/kāḅnāḍḍ-agg* ‘bowel’ of (42) have no underlying tone in the suffix, so root-final Low tone is delinked from the root and/or is assigned to the suffix {M5-6}. The nouns *gḍmūḍr/gḍmūḍr-ìigg* ‘dove’ and *ḍāḍḍḍ/ḍāḍḍḍ-agg* ‘fertile soil’ have Mid underlying tone in the suffix which assimilates to the preceding Low tone {M9}, so the root-final tone is not delinked from the root nor assigned to the suffix. The nouns of (49) are similar to the ML nouns of (42) in that they also have suffixes with Mid tone assimilating to preceding Low tone {M9}. However, it is not understood why the root-initial Mid tone of the nouns of (49) also assimilates to Low tone, and this alternation could be analyzed as tone replacement.

In 6.4 it will be shown that possessed body part nouns also have a tone change in the plural form. However, this is a different tone change—LM replacement—than with the nouns of (49)—Low replacement.

There are a handful of other nouns with unpredictable tone in the plural form. In (50a-d), the root-final High tone is not assigned in the plural form. In (e), the suffix tone is Low. In (f-h), other tone changes take place between singular and plural forms.

(50) **Nouns with irregular tone in the plural form**

	N SG	N PL	
(a)	ūfú	ūfū-gg	‘tree type’
(b)	cēldá	cēldā-gg	‘charcoal’
(c)	kāsá	kāsā-gg	‘boy’

	N SG	N PL	
(d)	ṭāēḍá(g)	ṭāēḍā-āgg	‘wine strainer’
(e)	lúḍ	lú-ùgg	‘leg’
(f)	búlí-ḥ	búlí-igg	‘worm’
(g)	ḵḍ	ḵḍ-əgg, ḵḵgg	‘husband’
(h)	gḗəḍg [gḗəg,']	gḗəḍ-ḗəgg	‘thief’

6.4 Body part nouns

Since all body part nouns possessed by plural persons take an alternate tone pattern, a separate section is included for their description. All body part nouns possessed by plural persons have L(M) tone. Although the common tone pattern of *bḥḥrà/bḥḥrà-gg* ‘shoulder’ in the paradigm of (51) is Mid, Low, the plural forms possessed by plural persons surface as Low, Mid.

(51) Possessive paradigm for inalienable body part *bḥḥrà / bḥḥrà-gg* ‘shoulder’

		Singular person pronouns		Plural person pronouns		
Noun SG	ā	bḥḥràà	1sPs	---		1pPs
	ḥ	bḥḥràà	2sPs	---		2pPs
	ē	bḥḥràà	3sPs	---		3pPs
Noun PL	ā	bḥḥràà-gg	1sPp	āgg	bḥḥràā-gg	1pPp
	ḥ	bḥḥràà-gg	2sPp	ūgg	bḥḥràā-gg	2pPp
	ē	bḥḥràà-gg	3sPp	ēgg	bḥḥràā-gg	3pPp

The tone assignment of the plural person possessive morpheme is described in (52).

(52) Plural person possessive L(M) tone assignment

Plural possessed body part nouns have LM pattern in that Mid tone surfaces on the final syllable and Low tone surfaces on the others. However, monosyllabic body part nouns have Low tone.

This rule causes three-syllable body part nouns to be Low, Low, Mid; two-syllable body parts to be Low, Mid; and monosyllabic body parts to be Low. The nouns in (53) are exemplary of possession of body parts. Regardless of the root tone of nouns possessed by singular persons, the tone of plural body parts possessed by plural persons is governed by the possessive morpheme. Only the first person has been included since the other persons follow the pattern of (51) for their respective vowel pairs.

(53) Low-Mid tone alternation in plural person possession of body part nouns

Root tone	N SG, SG person	N PL, SG person	N PL, PL person	
H	ā cíl	ā cíl	āgg cíl-g	‘spine’
	ā sísíḵ	ā sísíḵ-éēgg	āgg sísíḵ-ēēgg	‘gum’
	ā cáffá(g)	ā cáffá-āgg	āgg càffā-āgg	‘side’

Root tone	N SG, SG person	N PL, SG person	N PL, PL person	
M	ā fīi-ɖ	ā fīi-gg	āgg fīi-gg	‘feather’
	ā kālāā-ɖ		āgg kəlɔ̄ɔ̄-gg	‘tongue’
	ā pēbbār	ā pēbbār-g	āgg pēbbār-ēēgg	‘rib’
L	ā ɖɔl		āgg ɖul-g	‘penis’
	ā fɔɖɔr		āgg fɔɖɔr-ēēgg	‘nose’
	ā bə̀lɛ̀màà	ā bə̀lɛ̀màà-gg	āgg bə̀lɛ̀màà-gg	‘knee cap’
HL	ā il	ā il-ə̀ə̀gg	āgg il-ə̀ə̀gg	‘horn’
	ā lááɖà(g)		āgg lààɖà-gg	‘brain’
	ā tɔ̀ndɔ̀li(g)	ā tɔ̀ndɔ̀li-igg	āgg tɔ̀ndɔ̀li-igg	‘elbow’
HM	ā ɲí-ɖ	ā ɲí-gg	āgg ɲí-gg	‘tooth’
ML	ā sù-ɖ		āgg sù-gg	‘hair’
	ā bə̀ssà-ɖ	ā bə̀ssà-gg	āgg bə̀ssà-gg	‘intestine’
MH	ā búlɖí(g)	ā búlɖí-igg	āgg búlɖí-igg	‘finger’
	ā kūsūmíí	ā kūsūmíí-gg	āgg kūsūmíí-gg	‘knee’
LM	ā ə̀mɔ̄		āgg ə̀mɔ̄-gg	‘liver’
	ā cə̀ŋàlɖā	ā cə̀ŋàlɖā-gg	āgg cə̀ŋàlɖā-gg	‘triceps’
HLM	ā kəlɔ̄		āgg kəlɔ̄-gg	‘jaw’
	ā ɖɔ̀ggɖə̀lɖā	ā ɖɔ̀ggɖə̀lɖā-gg	āgg ɖɔ̀ggɖə̀lɖā-gg	‘ankle’

6.5 Genitive

Genitive nouns are used as agents or experiencers following a verb or as the possessor in a phrase with the general preposition *é*. A tone change marks the genitive case. In (54), the noun *ə̀ggáár* ‘hunter’ with LH root tone melody has ML tone melody when used as an experiencer following the verb *ɲáɔ̄-s=é* ‘need-COMP=PAS.A’. In (55), the noun *tɔ̄ɔ̄=n* ‘cow=DEF’ with H root tone melody has ML tone melody when used as the possessor in the phrase with general preposition.

- (54) *nāms* ɲáɔ̄-s=é **ə̀ggáár**
 food /ɲaw/need-COMP=PAS.A /ə̀ggáár/hunter.GEN
 ‘Food is needed by the hunter.’

- (55) ɔ̄ɲ é **tɔ̄ɔ̄=n** wēɖán
 meat of /tɔ̄ɔ̄/cow.GEN=DEF good
 ‘Meat of the cow is good.’

The genitive function is not marked with a suffix, but only by a tone change. Nouns with M or MH root tone melodies have HL tone melody in the genitive case. Nouns with all other root tone melodies have ML tone melody in the genitive case.

Table 13: Genitive noun tone changes

Root tone melody	Genitive tone melody
M, MH	HL
All other melodies	ML

In (56), singular nouns with various root tone melody are compared in genitive and non-genitive forms. Nouns with M and MH root tone melody have HL melody in genitive forms. Nouns with all other root tone melody have ML tone melody in genitive forms. The two tones of the genitive melodies both assign to the stem-final syllable and the first tone spreads leftward to all preceding syllables as in *kūḍūūrī-gg* ‘bird’. If there is a clitic following the stem such as the definite clitic =*Á* in *téṅḍás = à* ‘bird=DEF’, the genitive stem-final tone is delinked and reassigned to the clitic.

(56) **Genitive singular and plural nouns with various root tone melodies**

Root tone	GEN tone	N SG	GEN N SG	GEN DEF N SG	
H	ML	ṭṣ́	ṭṣ̀	ṭṣ̀ = n	‘cow’
M	HL	mīī	mîî	mîî = n	‘goat’
L	ML	ḍìì	ḍîî	ḍîî = n	‘rat’
HL	ML	wírî	wîrî	wîrî = n	‘bird’
HM	ML	súlṣ	sūlṣ	sūlṣ = n	‘clan member’
ML	ML	ṅūūī	ṅūūî	ṅūūî = n	‘leopard’
LH	ML	àggáár	àggāàr	àggāàr = à	‘hunter’
LM	ML	mṵrāā	mṵrāà	mṵrāà = n	‘governor’
MH	HL	téṅḍás	téṅḍàs	téṅḍàs = à	‘bird type’
MHM	ML	kūḍúúrī	kūḍūūrî	kūḍūūrî = n	‘bird type’

The same tone changes take place for plural genitive nouns.

(57) **Genitive singular and plural nouns with various root tone melodies**

Root tone	GEN tone	N PL	GEN N PL	GEN DEF N PL	
H	ML	ṭṣ́-gg	ṭṣ̀-gg	ṭṣ̀- <i>gg</i> = ṵ	‘cow’
M	HL	mīī-gg	mîî-gg	mîî- <i>gg</i> = ṵ	‘goat’
L	ML	ḍìì-gg	ḍîî-gg	ḍîî- <i>gg</i> = ṵ	‘rat’
HL	ML	wírî-ìgg	wîrî-ìgg	wîrî-ìgg = ṵ	‘bird’
HM	ML	súlṣ-ṵgg	sūlṣ-ṵgg	sūlṣ-ṵgg = ṵ	‘clan member’
ML	ML	ṅūūy-g	ṅūūy-g	ṅūūy-g = ṵ	‘leopard’
LH	ML	àggáár-g	àggāàr-g	àggāàr-g = à	‘hunter’
LM	ML	mṵrāā-gg	mṵrāà-gg	mṵrāà-gg = à	‘governor’
MH	HL	téṅḍás-ṵgg	téṅḍàs-ṵgg	téṅḍàs-ṵgg = à	‘bird type’
MHM	ML	kūḍúúrī-gg	kūḍūūrî-gg	kūḍūūrî-gg = ṵ	‘bird type’

There is some variation in the tone of genitive forms. Sometimes with the same speaker with the same words, the genitive Low tone is not delinked even though it is reassigned to a plural clitic (*mî-gg = ð* ‘goat.GEN = DEF’, *āggāâr-g = à* ‘hunter.GEN = DEF’). Sometimes genitive nouns have Low tone melody instead of ML tone melody (*kùḍùrîî* ‘bird type’). There are other variations besides these, but with the exception of ML root tone melodies, genitive forms differ in tone from non-genitive forms.

7 Noun word

7.1 Introduction

In this chapter we present a morphological description of the noun word, including clitics for copular (COP), definite (DEF), locative copular (LCM), dative (DAT), accompaniment (ACM), relative clause definite (RDM), and clause-final subordinate (SBO) markers. In chapter 4, these clitics were shown to attach to two or more word categories.

Noun word morphology involves clitics attached to noun stems, rather than to noun roots. Whereas suffixes attached to noun roots attach to underlying segments, clitics attached to noun stems attach to surface segments. The accompaniment morpheme attaches a different clitic for vowel-final stems (= *nE*) as in (1a) than for consonant-final stems (= *E*) as in (d). Because the accompaniment clitic =*nE* attaches to a surface-final segment in (1a), it is also analyzed to attach to surface-final segments in (1b-c). Thus, the singular surface forms of (1b-c) are *káḏ = nē* ‘hyena’, *ḡūūì = nē* ‘leopard’ with stem-final surface vowels, whereas the root underlying forms are */kaw/* or */kab/*, */ḡuuy/* or */ḡuuj/*³¹.

(1) Roots and stems compared

	Underlying root	Surface root	Noun stem suffix	Noun word clitic	
	UR	N.SG	N-PL	N.SG=ACC	
(a)	/ṭɔ/	ṭóó	ṭó-gg	ṭóó = nē	‘cow’
(b)	/kaw/	káḏ	kâw-g	káḏ = nē	‘hyena’
(c)	/ḡuuy/	ḡūūì	ḡūūy-g	ḡūūì = nē	‘leopard’
(d)	/kaam/	kààm	kààm-g	kààm = ē	‘cow type’

Suffixes are attached to the underlying-final segments of roots, whereas clitics are attached to the surface-final segments of stems. However, in the case of copular and definite clitics, the underlying-final stem segment can determine which clitic allomorph attaches.

Just as noun roots attach different suffixes depending on the root-final segment, noun stems attach different clitics depending on the stem-final segment. Each grammatical noun clitic has different segmental or tonal allomorphs, sometimes differing according to the following stem-final segments: underlying

³¹ As discussed in 2.3.6, although there is no way to distinguish whether the underlying-final segments are plosives or approximants, the definite clitic =*An* attaches to stems with underlying-final approximants and the definite clitic =*Vn* attaches to stems with underlying-final vowels.

approximants δ , y or w in monosyllabic stems, long surface vowels in monosyllabic stems, surface vowels in polysyllabic stems, surface consonants, and surface consonants of plural stems. Table 14 lists the various clitics on stem-final segments and (2) gives example nouns with the same order. Those that have not been attested are left blank.

Table 14: Noun word clitics and their allomorphs

Stem-final segment	COP	DEF	LCM/DAT	ACM	RDM	SBO
(Monosyllabic) underlying approximant δ , w , y	= $\bar{A}n$	= An	= $\bar{A}n$	= $n\bar{E}$		= $n\bar{E}$
(Monosyllabic) long vowel	= $\bar{V}n$	= Vn	= $\bar{V}n$	= $n\bar{E}$		= $n\bar{E}$
(Polysyllabic) vowel	= \bar{n}	= n	= \bar{n}	= $n\bar{E}$	= \bar{E}	= $n\bar{E}$
Consonant	= \bar{A}	= \bar{A}	= $\bar{A}n$	= \bar{E}	= \bar{E}	= \bar{E}
Consonant N PL	= \bar{A}	= \bar{A}	= $\bar{A}n$	= \bar{E}	= \bar{E}	= \bar{E}

(2a) Noun word clitic allomorphs on various stem-final nouns

N	COP	DEF	LCM/DAT	
mēēð	mēēð = ān	mēēð = ān	mēēð = ān	‘tree type’
sāð	sā.ð = n/sāw = ān	sā.ð = n/sāw = ān	sā.ð = n/sāw = ān	‘shoe’
rēē	rēē. = ēn	rēē. = ēn	rēē. = ēn	‘cotton’
ābbéé	ābbéē = n	ābbéé = n	ābbéē = n	‘uncle’
ḍām	ḍām = ð	ḍām = ó	ḍām = ðn	‘Arab’
ḍām-g	ḍām-g = ð	ḍām-g = ó	ḍām-g = ðn	‘Arabs’

(b) Noun word clitic allomorphs on various stem-final nouns

N	ACM	RDM	SBO	
mēēð	mēēð = nē		mēēð = né	‘tree type’
sāð	sāð = nē		sāð = né	‘shoe’
rēē	rēē = nē		rēē = né	‘cotton’
ābbéé	ābbéé = nē	ābbéé. = é	ābbéé = né	‘uncle’
ḍām	ḍām = ē	ḍām = é	ḍām = é	‘Arab’
ḍām-g	ḍām-g = ē	ḍām-g = è	ḍām-g = é	‘Arabs’

The tone lowering rule of {M9} in 3.4.3 states that suffix-initial High and Mid tone are lowered following stem-final Low tone. Most of the noun clitics are in accordance with this rule, but the following are not: the copular clitics = $\bar{A}n$, = $\bar{V}n$ and accompaniment clitic = $n\bar{E}$ attached to underlying approximants and long vowel-final stems. In all noun words, tone assignment takes the stem tone as its point of departure.

7.2 Copular clitic

7.2.1 Copular segmental morphology

In answer to questions such as *ɲɪn nɛɛ* ‘What is this?’ and various other non-verbal clauses described in 14.6, a copular clitic can be attached to noun stems.

- (3a) $f\check{e}\check{e}\check{t}\check{f}\check{a} = n$ $\grave{a}gg\acute{a}r = \bar{a}$ (b) $j\check{o}gg = \check{o}$ $\grave{a}gg\acute{a}r-g = \grave{a}$
 Feetfa =DEF hunter =COP people = DEF hunter-PL-COP
 ‘Feetfa is a hunter.’ ‘The people are hunters.’

The clitic $=\bar{A}n$ is attached to monosyllabic stems with underlying final approximant, the clitic $=\bar{V}n$ is attached to monosyllabic stems with long vowel, the clitic $=n$ is attached to polysyllabic vowel-final stems, and the clitic $=\bar{A}$ is attached to consonant-final singular stems. The clitic $=\grave{A}$ is attached to plural nouns, which are always consonant-final.

Table 15: Copular clitics

Stem-final segment	COP N SG	COP N PL
(Monosyllabic) underlying approximant	$=\bar{A}n$	
(Monosyllabic) long vowel	$=\bar{V}n$	
(Polysyllabic) vowel	$=n$	
Consonant	$=\bar{A}$	$=\grave{A}$

Monosyllabic underlying approximant-final singular stems

In (4), the copular clitic $=\bar{A}n$ is attached to singular nouns with stem-final dental approximant \check{o} . The clitic vowel takes the [ATR] and [round] features of the stem {M3-4}.

(4) Copular clitic $=\bar{A}n$ on singular nouns with stem-final \check{o}

N SG	COP N SG	
$j\acute{a}\acute{a}\check{o}$	$j\acute{a}\acute{a}\check{o} = \bar{a}n$	‘old clothes’
$m\check{o}\check{o}\check{o}$	$m\check{o}\check{o}\check{o} = \bar{o}n$	‘grandfather’
$m\check{e}\check{e}\check{o}$	$m\check{e}\check{e}\check{o} = \bar{e}n$	‘tree type’
$k\check{u}\check{u}\check{o}$	$k\check{u}\check{u}\check{o} = \bar{u}n$	‘shadow’
$y\grave{a}\grave{a}\check{o}$	$y\grave{a}\grave{a}\check{o} = \bar{a}n$	‘sister’

As shown in (5), monosyllabic stems with underlying final approximants w, y sometimes elide the vowel of the singular copular clitic $=\bar{A}n$ and sometimes retain it, depending on the underlying-final segment and the speed of the utterance. When the underlying approximant surfaces as a vowel, it becomes the onset to a second syllable. When the copular clitic vowel is retained, the stem-final vowel surfaces as

an approximant.

(5) **Copular clitic = $\bar{A}n$ on monosyllabic underlying approximant final stems**

Stem-final	N SG	COP N SG		
(a) aɔ /aw/	káɔ̃	ká.ɔ̃ = n	ká.w = àn	'hyena'
(b) aaɔ /aaw/	bààɔ̃	bàà.ɔ̃ = n	bàà.w = àn	'father'
(c) ɛɔ /ɛw/	bĕɔ̃	bĕ.ɔ̃ = n	bĕ.w = àn	'tree type'
(d) aɛ /ay/	ṭāĕ	ṭā.ĕ = n	ṭā.y = àn	'giraffe'
(e) aaɛ /aay/	gááĕ	gáá.ĕ = n	gáá.y = àn	'tree type'
(f) əi /əy/	màðì	màð.ì = n	màð.y = ðn	'farm fence'
(g) ui /uy/	mūī	mū.ī = n	mū.y = ðn	'wildebeest'
(h) uui /uuy/	ɲūūì	ɲūū.ì = n	ɲūū.y = ðn	'leopard'

Most monosyllabic stems with underlying-final approximant *w* and *y* are phonetically somewhere in-between the two utterances of (5). In stems with underlying-final velar approximant *w* as in (a-c), the surface form is usually close to having the velar approximant. In [-ATR] stems with underlying final palatal approximant *y* as in (d-e), the surface form is usually half way between the approximant *y* and vowel *ɛ*. In [+ATR] stems with underlying final *y* as in (f-h), the surface form is usually close to the vowel *i*. Also, the faster the utterance, the closer the surface form is to the shorter form with a stem-final vowel, regardless of the underlying stem-final segment.

Monosyllabic long vowel-final singular stems

When the singular copular clitic = $\bar{V}n$ attaches to monosyllabic long vowel-final stems, the clitic becomes a second syllable, in accordance with {M2} of 3.1. The clitic vowel takes on all the features of the stem-final vowel to which it is juxtaposed.

(6) **Copular clitic = $\bar{V}n$ on monosyllabic long vowel final stems**

Stem-final	N SG	COP N SG	
ɛ	rĕĕ	rĕĕ. = ĕn	'cotton'
a	máá	máá. = àn	'house'
ɔ	ṭóó	ṭóó. = ón	'cow'
i	ɟīī	ɟīī. = ìn	'turkey'
ə	wāā	wāā. = ān	'shade'
u	būū	būū. = ūn	'chicken coop roof'

Polysyllabic vowel-final singular stems

The copular clitic = \bar{n} is attached to polysyllabic singular nouns with various stem-final long and short vowels in (7a-j). The clitic also attaches to nouns with underlying-final vowel sequence such as *būū* 'tree type' in (k) and to nouns with

underlying-final velar plosives *g* such as *áŋé(g)* ‘elephant’ in (l). The language treats these singular nouns as vowel-final stems, attaching the vowel-final clitic = \bar{n} instead of the consonant-final clitic = \bar{A} .

(7) **Copular clitic = \bar{n} on singular nouns with stem-final vowels**

	Stem-final	N SG	COP N SG	
(a)	$\epsilon\epsilon$	$\bar{a}bb\acute{e}\acute{e}$	$\bar{a}bb\acute{e}\acute{\epsilon} = n$	‘uncle’
(b)	ii	$\bar{u}r\bar{i}\bar{i}$	$\bar{u}r\bar{i}\bar{i} = n$	‘ostrich’
(c)	aa	$w\acute{a}y\acute{a}y\acute{a}$	$w\acute{a}y\acute{a}y\acute{a} = n$	‘bird type’
(d)	$\text{ə}\text{ə}$	$g\bar{a}\bar{u}l\bar{d}\bar{a}\bar{d}$	$g\bar{a}\bar{u}l\bar{d}\bar{a}\bar{d} = n$	‘fish’
(e)	$\text{ɔ}\text{ɔ}$	$m\acute{e}l\bar{ɔ}\bar{ɔ}$	$m\acute{e}l\bar{ɔ}\bar{ɔ} = n$	‘sugar cane’
(f)	uu	$\bar{a}y\bar{u}\bar{u}$	$\bar{a}y\bar{u}\bar{u} = n$	‘tooth brush’
(g)	a	$\bar{t}\acute{a}\acute{a}\bar{d}\bar{a}$	$\bar{t}\acute{a}\acute{a}\bar{d}\bar{a} = n$	‘grandmother’
(h)	ə	$\bar{a}\bar{n}\bar{d}$	$\bar{a}\bar{n}\bar{d} = n$	‘little girl’
(i)	ɔ	$\bar{d}ns\bar{d}$	$\bar{d}ns\bar{d} = n$	‘cooking plate’
(j)	u	$k\acute{u}f\acute{u}$	$k\acute{u}f\acute{u} = n$	‘crushed beans’
(k)	$u\text{ə}$	$b\bar{u}\bar{d}$	$b\bar{u}.\bar{d} = n$	‘tree type’
(l)	(g)	$\bar{a}\bar{n}\bar{e}(g)$	$\bar{a}\bar{n}\bar{e} = n$	‘elephant’

Consonant-final singular stems

In (8), the copular clitic = \bar{A} is attached to singular nouns with various stem-final consonants.

(8) **Copular clitic = \bar{A} on singular nouns with stem-final consonants**

	Stem-final	N SG	COP N SG	
	bb	$\bar{t}\bar{i}l\bar{a}bb$	$\bar{t}\bar{i}l\bar{a}bb = \bar{a}$	‘water spring’
	\bar{d}	$m\bar{a}\bar{a}\bar{d}$	$m\bar{a}\bar{a}\bar{d} = \bar{a}$	‘snake type’
	d	$\bar{d}\bar{s}\bar{d}$	$\bar{d}\bar{s}\bar{d} = \bar{a}$	‘bird type’
	\bar{t}	$b\bar{i}m\bar{i}r\bar{i}\bar{t}$	$b\bar{i}m\bar{i}r\bar{i}\bar{t} = \bar{a}$	‘bird type’
	gg	$k\bar{a}m\bar{a}l\bar{l}g$	$k\bar{a}m\bar{a}l\bar{l}g = \bar{a}$	‘woman’
	s	$m\bar{a}r\bar{s}\bar{s}$	$m\bar{a}r\bar{s}\bar{s} = \bar{a}$	‘spider’
	m	$\bar{d}\bar{a}m$	$\bar{d}\bar{a}m = \bar{a}$	‘Arab’
	n	$s\bar{e}\bar{n}$	$s\bar{e}\bar{n} = \bar{a}$	‘ruler’
	\bar{n}	$\bar{n}\bar{e}\bar{n}$	$\bar{n}\bar{e}\bar{n} = \bar{a}$	‘spear type’
	\bar{n}	$m\bar{a}\bar{n}$	$m\bar{a}\bar{n} = \bar{a}$	‘wild cat type’
	r	$\bar{p}\bar{u}r$	$\bar{p}\bar{u}r = \bar{u}$	‘flower’
	l	$\bar{d}\bar{d}\bar{n}\bar{l}$	$\bar{d}\bar{d}\bar{n}\bar{l} = \bar{a}$	‘millipede’

Plural stems

With plural nouns, the copular clitic is = \bar{A} . In (9), the singular nouns and singular copular forms are given for comparison.

(9) Copular clitic = \bar{A} on plural nouns

Suffix	N SG	N PL	COP N SG	COP N PL	
- $\bar{g}g$	wáár	wáár-g	wáár = ā	wáár-g = à	‘insect’
- $\underline{g}g$	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = à	‘bird’
- $\underline{g}g$	kúúfú	kúúfú-gg	kúúfú = n	kúúfú-gg = ù	‘beans’
- $\bar{A}gg$	céld	céld-āgg	céld = ā	céld-āgg = à	‘broom’
- $\bar{E}gg$	púr	púr-īgg	púr = ū	púr-īgg = ò	‘flower’
- $\underline{A}gg$	íl	íl-ə̀gg	íl = ə̀n	íl-ə̀gg = ò	‘horn’
- $\underline{A}d$	kàmàlògg	kàmàlògg-à̀d	kàmàlògg = ò	kàmàlògg-à̀d = à	‘woman’
- \underline{d}	ābbéé	ābbéé- \underline{d}	ābbéé = n	ābbéé- \underline{d} = à	‘uncle’
- $\underline{d}/-gg$	gə̀rmù- \underline{d}	gə̀rmù-gg	gə̀rmù = \underline{d} = ù	gə̀rmù-gg = ù	‘insect’
- $\underline{E}d/-gg$	jíŋ-íd	jíŋ-g	jíŋ-íd = ə̀	jíŋ-g = ò	‘louse’

7.2.2 Tonal morphology of the copular clitic

The singular copular clitics = $\bar{A}n$, = $\bar{V}n$, = \bar{n} , have underlying Mid tone and the plural copular clitic = \bar{A} has underlying Low tone. The singular copular clitics = $\bar{A}n$, = $\bar{V}n$ attached to approximants and long vowel-final stems are an exception to the tone lowering rule of {M9} in 3.4.3 in that clitic Mid tone does not assimilate to stem-final Low tone.

Monosyllabic underlying approximant-final stems

In the noun $yàà\delta = \bar{a}n$ ‘sister=COP’ of (10) with stem-final dental approximant δ , the Mid clitic tone does not assimilate to the preceding stem-final Low tone.

(10) Copular clitic = $\bar{A}n$ on stem-final δ nouns with three tone melodies

Tone	N SG	N PL	COP N SG	COP N PL	
H	jáád	jáád-āagg	jáád = ān	jáád-āagg = à	‘old clothes’
M	mə̀ə̀	mə̀ə̀-ə̀ə̀	mə̀ə̀ = ə̀n	mə̀ə̀-ə̀ə̀ = ò	‘grandfather’
L	yàà	yàà-āā	yàà = ān	yàà-āā = à	‘sister’

Similarly, Mid tone of the copular clitic = $\bar{A}n$ does not assimilate to preceding Low tone in monosyllabic stems with underlying-final approximants w and y . However, the Low tone of HL and ML stem tone melodies delinks and reassigns to the clitic syllable in $ká.w = \bar{a}n$ ‘hyena=COP’ and $nū.y = \bar{a}n$ ‘leopard=COP’, even though the clitic has underlying Mid tone, in contradiction of {M6}. In these forms, the reassigned Low tone replaces the clitic Mid tone. The same tone melodies surface on the noun words regardless of whether the underlying stem-final approximant surfaces as a vowel or approximant.

(11) **Copular clitic = $\bar{A}n$**
on monosyllabic approximant final stems with various tone melodies

Tone	N SG	N PL	COP N SG		COP N PL	
H	ááé	ááy-g	áá.ɛ = n	áá.y = $\bar{a}n$	ááy-g = à	'honey'
M	mūī	mūy-g	mū.ī = n	mū.y = $\bar{e}n$	mūy-g = ò	'wildebeest'
L	bààð	bààw-āāð	bàà.ɔ = n	bàà.w = $\bar{a}n$	bààw-āāð = à	'father'
HL	káð	kâw-g	ká.ð = n	ká.w = $\bar{a}n$	kâw-g = à	'hyena'
ML	ɲūūì	ɲūy-g	ɲūū.ì = n	ɲūū.y = $\bar{e}n$	ɲūy-g = ò	'leopard'

Monosyllabic long vowel final stems

In monosyllabic long vowel-final stems, Mid tone of the copular clitic = $\bar{V}n$ also does not assimilate to preceding Low stem tone. Stem-final High tone spreads onto the copular clitic, juxtaposed to the stem. The final Low tone of HL and ML melodies is delinked from the stem and reassigns to the clitic, replacing the Mid clitic tone, in contradiction of {M6}.

(12) **Copular clitic = $\bar{V}n$**
on monosyllabic long vowel final stems with various tone melodies

Tone	N SG	N PL	COP N SG		COP N PL	
H	cáá	cáá-gg	cáá. = $\bar{a}n$	cáá-gg = à		'wild cat'
M	mīī	mīī-gg	mīī. = $\bar{i}n$	mīī-gg = ò		'goat'
L	ɖīì	ɖīì-gg	ɖīì. = $\bar{i}n$	ɖīì-gg = ò		'rat'
HL	máà	máà-gg	máá. = $\bar{a}n$	máà-gg = à		'house'
ML	ɟīì	ɟīì-gg	ɟīī. = $\bar{i}n$	ɟīì-gg = ò		'turkey'
MH	mīí	mīí-gg	mīī. = $\bar{i}n$	mīí-gg = ò		'chicken'

Polysyllabic vowel final stems

In (13), the copular clitic = \bar{n} is attached to singular polysyllabic nouns with various tone melodies and stem-final vowels. The Mid clitic tone is assigned to stems with

(13) **Copular clitic = \bar{n}**
on vowel-final singular nouns with various tone melodies

Tone	N SG	N PL	COP N SG		COP N PL	
H	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = à		'bird type'
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ò		'ostrich'
L	ðnsð	ðnsð-gg	ðnsð = n	ðnsð-gg = ò		'cooking plate'
HL	órɖàà	órɖàà-gg	órɖàà = n	órɖàà-gg = à		'army'
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = à		'rat'
ML	gōūlɖàð	gōūlɖàð-gg	gōūlɖàð = n	gōūlɖàð-gg = ò		'fish'
LM	mòràā	mòràā-gg	mòràā = n	mòràā-gg = à		'governor'
MH	pēēɖáá	pēēɖáá-gg	pēēɖáá = n	pēēɖáá-gg = à		'crack'

final High tone, but is not assigned to stems with final Low tone in accordance with {M9}.

Consonant-final stems

In (14), the copular clitic = \bar{A} attaches to nouns with stem-final consonants and various tone melodies. The Mid tone of the clitic = \bar{A} assimilates to stem-final Low tone in accordance with {M9}.

(14) **Copular clitic = \bar{A}
on consonant-final singular nouns with various tone melodies**

Tone	N SG	N PL	COP N SG	COP N PL	
H	wáár	wáár-g	wáár = ā	wáàr-g = à	‘insect type’
M	ḍḍm	ḍḍm-g	ḍḍm = ɔ̄	ḍḍm-g = ɔ̄	‘Arab’
L	kààm	kààm-g	kààm = à	kààm-g = à	‘cow type’
HL	séèn	séèn-g	séèn = à	séèn-g = à	‘ruler’
HM	ǰǰrgāāl	ǰǰrgāāl-g	ǰǰrgāāl = ā	ǰǰrgāāl-g = à	‘bird type’
ML	kḍḍèl	kḍḍèl-g	kḍḍèl = à	kḍḍèl-g = à	‘baboon’
LH	àggáár	àggáár-g	àggáár = ā	àggáàr-g = à	‘hunter, rider’
LM	gḍḍèn	gḍḍèn-g	gḍḍèn = ā	gḍḍèn-g = à	‘metal worker’
MH	báár	báár-g	báár = ā	báàr-g = à	‘tribe member’

In stems such as *wáár-g* ‘insect type’ with High-Mid tone assigned to the same stem-final syllable, the Mid tone assimilates to the clitic-final Low tone (*wáàr-g = à*). This is in accordance with the stem Mid tone lowering rule of {M7} in 3.4.2.

(15) **Stem Mid tone assimilating to clitic Low**

Plural formation suffix	N PL	COP N PL	
- \bar{g}	wáár-g	wáàr-g = à	‘insect type’
- \bar{g}	àggáár-g	àggáàr-g = à	‘hunter, rider’
-gg	pēēḍáá-gg	pēēḍáá-gg = à	‘crack’
-Āgg	ḡārná-āgg	ḡārná-āgg = à	‘leach’
-ÉĒgg	púr-ígg	púr-ígg = ɔ̄	‘flower’
-ÉĒgg	rāāy-éēgg	rāāy-éēgg = à	‘quarrel’
-ḍ	ābbéē-ḍ	ābbéē-ḍ = à	‘uncle’
-ḍ/- $\bar{A}\bar{A}\bar{d}$	mōy-ḍḍḍ	mōy-ḍḍḍ = ɔ̄	‘ancestor’
-ḍ/- \bar{g}	káàn-g	káàn-g = à	‘fly’
-ḍ/-gg	lōggḍḍ-gg	lōggḍḍ-gg = ɔ̄	‘locust’

7.3 Definite clitic

The definite clitic indicates the speaker believes a word is active or known information in the mind of the hearer, as illustrated in (16a) and (b). In narratives, the first mention of a participant can be with the definite clitic if the participant is

already know in the mind of the hearers. In (17a), the participant Minjib is unknown to hearers and introduced without the definite clitic, whereas in (b) the Baggara people group are notorious in Gaahmg culture and introduced with the definite clitic.

- (16a) wáár = **á** wēḍá = n (b) wáār-g = **á** wîḍ-gg = ò
 insect=DEF good = COP insect-PL=DEF good-PL = COP
 ‘The insect is good.’ ‘The insects are good.’
- (17a) jēn fāā mān bélān mīḥjibb. ò ē mūn náán
 man old certain named Minjib and with time that
 ‘There was an old man named Minjib. At that time
- (b) bāárg = á ḡás-ǎ`n jnā-lg nà ḡn-g = ì,
 Baggara = DEF search.for girl-PL REL young-PL = RDM
 /ḡáw/-CONT.P
 the Baggara (people group) were kidnapping young girls.’ (Minj1-2)

The same definite clitic =*A* is attached to (non-approximant) consonant-final stems. This includes many singular nouns and all plural nouns. The definite clitic =*An* is attached to monosyllabic underlying approximant-final stems, the clitic =*Vn* is attached to monosyllabic long vowel-final stems, the clitic =*n* is attached to polysyllabic vowel-final stems.

Table 16: Definite clitics

Stem-final segment	DEF
(Monosyllabic) underlying approximant	= <i>An</i>
(Monosyllabic) long vowel	= <i>Vn</i>
(Polysyllabic) vowel	= <i>n</i>
Consonant	= <i>Á</i>

Definite clitics are the same segmentally as copular clitics. Therefore, the segmental behaviour of the definite clitic will not be illustrated further, and the focus of the presentation will be on its tone. The definite clitics =*An*, =*Vn*, =*n* have no underlying tone and the definite clitic =*Á* attached to stem-final consonants has underlying High tone.

Monosyllabic underlying approximant-final stems

In (18), the definite clitic =*An* is attached to nouns with the stem-final dental approximant *ð* and three tone melodies. The clitic vowel takes the stem-final tone {M5}.

(18) **Definite clitic = *An* on stem-final *o* nouns with three tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	ǰááð	ǰááð-āāgg	ǰááð = án	ǰááð-āāgg = á	'old clothes'
M	mǽǽð	mǽǽð-ǽǽǰ	mǽǽð = ǽn	mǽǽð-ǽǽǰ = ǽ	'grandfather'
L	yààð	yààð-āāǰ	yààð = àn	yààð-āāǰ = á	'sister'

The definite clitic = *An* is also attached to monosyllabic approximant-final stems in which the final underlying approximant *w* or *y* can surface as a vowel or as an approximant. In either, the noun word tone melody is the same. When the clitic vowel is not elided, it takes the stem-final tone {M5-6}.

(19) **Definite clitic = *An* on monosyllabic approximant final stems with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	ááé	ááy-g	áá.é = n	áá.y = án	ááy-g = á 'honey'
M	mūī	mūy-g	mū.ī = n	mū.y = ǽn	mūy-g = ǽ 'wildebeest'
L	bààð	bààw-āāǰ	bàà.ð = n	bàà.w = àn	bààw-āāǰ = á 'father'
HL	káð	kâw-g	ká.ð = n	ká.w = àn	kâw-g = ā 'hyena'
ML	ǰūūī	ǰūūy-g	ǰūū.ī = n	ǰūū.y = ǽn	ǰūūy-g = ǽ 'leopard'

Monosyllabic long vowel-final stems

Similarly, the definite clitic = *Vn* is juxtaposed to monosyllabic long vowel final stems {M2} and takes the stem-final tone {M5-6}.

(20) **Definite clitic = *Vn* on monosyllabic long vowel final stems with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	cáá	cáá-gg	cáá. = án	cáá-gg = á	'wild cat'
M	mīī	mīī-gg	mīī. = ín	mīī-gg = ǽ	'goat'
L	ǰīī	ǰīī-gg	ǰīī. = ìn	ǰīī-gg = ǽ	'rat'
HL	máà	máà-gg	máà. = àn	máà-gg = ā	'house'
ML	ǰīī	ǰīī-gg	ǰīī. = ìn	ǰīī-gg = ǽ	'turkey'
MH	mīí	mīí-gg	mīī. = ín	mīí-gg = ǽ	'chicken'

Polysyllabic vowel-final stems

In (21), the definite clitic = *n* with no underlying tone is attached to nouns with stem-final vowels and various tone melodies, and does not affect the stem tone.

(21) **Definite clitic = n****on vowel-final singular nouns with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = á	bird type'
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ó	'ostrich'
L	ònsò	ònsò-gg	ònsò = n	ònsò-gg = ɔ̄	'cooking plate'
HL	órḍàà	órḍàà-gg	órḍàà = n	órḍàà-gg = ā	'army'
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = á	'rat'
ML	gṵṵḍḍèè	gṵṵḍḍèè-gg	gṵṵḍḍèè = n	gṵṵḍḍèè-gg = ɔ̄	'fish'
LM	mòràā	mòràā-gg	mòràā = n	mòràā-gg = á	'governor'
MH	pēēḍáá	pēēḍáá-gg	pēēḍáá = n	pēēḍáá-gg = á	'crack'

Consonant-final stems

In (22), the definite clitic = \acute{A} with underlying High tone is attached to nouns with stem-final consonants and various stem tone melodies. Clitic High tone becomes Mid when the clitic is attached to stem-final Low tone, in accordance with {M9}.

(22) **Definite clitic = \acute{A}** **on consonant-final singular nouns with various tone melodies**

Tone	N SG	N PL	DEF N SG	DEF N PL	
H	wáár	wáār-g	wáár = á	wáār-g = á	'insect type'
M	ḍṵm	ḍṵm-g	ḍṵm = ó	ḍṵm-g = ó	'Arab'
L	kààm	kààm-g	kààm = ā	kààm-g = ā	'cow type'
HL	séèn	séèn-g	séèn = ā	séèn-g = ā	'ruler'
HM	ʃórgāāl	ʃórgāāl-g	ʃórgāāl = á	ʃórgāāl-g = á	'bird type'
ML	kṵḍèl	kṵḍèl-g	kṵḍèl = ā	kṵḍèl-g = ā	'baboon'
LH	àggáár	àggáár-g	àggáár = á	àggáár-g = á	'hunter, rider'
LM	gḍèn	gḍèn-g	gḍèn = á	gḍèn-g = á	'metal worker'
MH	bāár	bāár-g	bāár = á	bāár-g = á	'tribe member'

7.4 Relative clause definite clitic

Relative clauses are marked or unmarked for definiteness just as noun phrases. When the head of the relative clause is known information, the relative clause definite clitic = $\acute{E}/= \acute{E}$ attaches to the clause-final word. Relative clause definite clitics agree in number with the noun modified. In (a), the singular clitic with High tone on $fáá-gg = \acute{E}$ 'lines' agrees with the singular noun $kásón-gí$ 'friendship'. In (b), the plural clitic with Low tone on $léél-éégg = \acute{E}$ 'grasses' agrees with the plural noun $ʃégg$ 'things'.

- (23a) $kásón-gí$ ná àḍ ná é fáá-gg é fáá-gg = \acute{E}
 friendship REL.SG sits REL.SG in line-PL by line-PL = RDM
 'The friendship which sits in lines by lines.' (Tifal 1)

7.5.1 Locative and dative segmental morphology

Locative copula clitic

In non-verbal locative clauses, the singular or plural locative copula *îñ/ĕggàn* separates the subject from the predicate. However in fast speech, both singular and plural copulas attach to the subject noun phrase in the form of the clitic =*Āñ*. The singular locative copula *îñ/ĕĕñ* of (26a) is replaced by the clitic =*Āñ* attached to the subject noun in (b). The plural locative copula *ĕggàn* of (c) is replaced by the same clitic in (d).

(26) **Locative copular clauses**

- (a) àggáár **îñ** wéé bèñɲ (b) àggáár = **āñ** wéé bèñɲ
 hunter LCM house beside hunter=LCM house beside
 ‘A hunter is beside a house.’
- (c) àggáár-g **ĕggàn** wéé bèñɲ (d) àggáár-g = **āñ** wéé bèñɲ
 hunter-PL LCM house beside hunter-PL=LCM house beside
 ‘Hunters are beside a house.’

Dative clitic

The dative has the semantic roles of beneficiary and recipient as seen in the examples of (27). In general, dative constructions are not used with inanimate nouns.

(27) **Dative nouns in clauses**

- (a) ē bēē càðr = **āñ**
 he says rabbit-DAT
 ‘He said to the rabbit . . .’
- (b) á gáf jèèm càðr-ēĕgg = **āñ**
 I give something rabbit-PL=DAT
 ‘I give something to the rabbits.’
- (c) tíssò ìñĕgg bīigg sáfāđđín = **āñ**
 asked questions some.PL Sayfadin-DAT
 ‘They asked Sayfadin some questions.’

The locative copular and dative clitic =*Āñ* is attached to monosyllabic underlying approximant-final stems, the clitic =*Vñ* is attached to monosyllabic long vowel-final stems, the clitic =*n̄* is attached to polysyllabic vowel-final stems, and the clitic =*Āñ* is attached to consonant-final stems. In stems with final approximants and stems with final vowels, the locative, dative, definite, and copular forms of nouns

are segmentally identical, differing sometimes only by tone. In stems with final consonant, locative and dative forms of nouns differ from definite and copular forms by a word-final *n*.

Table 18: Locative copular and dative clitics

Stem-final segment	LCM/DAT
(Monosyllabic) underlying approximant	= $\tilde{A}n$
(Monosyllabic) long vowel	= $\tilde{V}n$
(Polysyllabic) vowel	= \bar{n}
Consonant	= $\tilde{A}n$

Monosyllabic underlying approximant-final singular stems

In (28), the locative and dative clitic = $\tilde{A}n$ is attached to singular nouns with stem-final dental approximant δ . The clitic vowel takes the [ATR] and [round] features of the root {M3-4}.

(28) Locative and dative clitic = $\tilde{A}n$ on singular nouns with stem-final δ

N SG	LCM/DAT N SG	
jááδ	jááδ = $\tilde{a}n$	‘old clothes’
mǝǝδ	mǝǝδ = δn	‘grandfather’
mēēδ	mēēδ = $\tilde{a}n$	‘tree type’
kūūδ	kūūδ = $\tilde{u}n$	‘shadow’
yààδ	yààδ = $\tilde{a}n$	‘sister’

Most monosyllabic stems with underlying-final approximants *w*, *y* are phonetically somewhere inbetween the two utterances of (29).

(29) Locative/Dative clitic = $\tilde{A}n$ on monosyllabic underlying approximant final stems

Stem-final	N SG	LCM/DAT N SG	
(a) aɔ /aw/	káδ	ká.δ = n	ká.w = $\tilde{a}n$ ‘hyena’
(b) aaw /aaw/	bààδ	bàà.ɔ = n	bàà.w = $\tilde{a}n$ ‘father’
(c) εɔ /εw/	bēδ	bē.δ = n	bē.w = $\tilde{a}n$ ‘tree type’
(d) aε /ay/	ṭāè	ṭā.è = n	ṭā.y = $\tilde{a}n$ ‘giraffe’
(e) aaε /aay/	gááè	gáá.è = n	gáá.y = $\tilde{a}n$ ‘tree type’
(f) əəi /əəy/	mǝǝì	mǝǝ.ì = n	mǝǝ.y = δn ‘farm fence’
(g) ui /uy/	mūī	mū.ī = n	mū.y = δn ‘wildebeest’
(h) uui /uuy/	ɲūūì	ɲūū.ì = n	ɲūū.y = δn ‘leopard’

Monosyllabic long vowel-final singular stems

As in copular and definite forms, when locative copula and dative clitics = $\tilde{V}n$ attach to monosyllabic long vowel-final stems, the clitic becomes a second syllable

{M2}. The clitic vowel takes on all the features of the stem-final vowel to which it is juxtaposed.

(30) **Locative/Dative clitic = $\bar{V}n$ on monosyllabic long vowel final stems**

Stem-final	N SG	LCM/DAT N SG	
ε	rēē	rēē. = ēn	'cotton'
a	māà	māá. = àn	'house'
ɔ	ʔóó	ʔóó. = ón	'cow'
i	ʃīī	ʃīī. = ín	'turkey'
ə	wǎǎ	wǎǎ. = ǎn	'shade'
u	bùù	bùù. = ùn	'chicken coop roof'

Polysyllabic vowel-final singular stems

In (31), the locative copular and dative clitic = \bar{n} is attached to singular nouns with various stem-final long and short vowels.

(31) **Locative/Dative clitic = \bar{n} on singular nouns with stem-final vowels**

	Stem-final	N SG	LCM/DAT N SG	
(a)	εε	ābbéé	ābbéē = n	'uncle'
(b)	ii	ūrīī	ūrīī = n	'ostrich'
(c)	aa	wááyáá	wááyáā = n	'bird type'
(d)	əə	gǔūlǔǔ	gǔūlǔǔ = n	'fish'
(e)	ɔɔ	mélǔǔ	mélǔǔ = n	'sugar cane'
(f)	uu	ǎyúú	ǎyúū = n	'tooth brush'
(g)	a	ʔááǔǔ	ʔááǔǔ = n	'grandmother'
(h)	ə	ǎŋǔ	ǎŋǔ = n	'little girl'
(i)	ɔ	ǔnsǔ	ǔnsǔ = n	'cooking plate'
(j)	u	kúfú	kúfú = n	'crushed beans'
(k)	uə	būǔ	būǔ = n	'tree type'
(l)	(g)	áŋé(g)	áŋé = n	'elephant'

Consonant-final singular stems

In (32), the locative copular and dative clitic = $\bar{A}n$ is attached to singular nouns with various stem-final consonants.

(32) **Locative and dative clitic = $\bar{A}n$ on singular nouns with stem-final consonants**

Stem-final	N SG	LCM/DAT N SG	
bb	ʃílǔbb	ʃílǔbb = ǔn	'water spring'
ǔ	māāǔ	māāǔ = ān	'snake type'
d	dǔd	dǔd = ǔn	'bird type'

Stem-final	N SG	LCM/DAT N SG	
ʃ	bimíríʃ	bimíríʃ = ʃn	‘bird type’
gg	kàmàlògg	kàmàlògg = ʃn	‘woman’
s	márʃs	márʃs = ʃn	‘spider’
m	ḍəm	ḍəm = ʃn	‘Arab’
n	séèn	séèn = ān	‘ruler’
ɲ	ɲéèɲ	ɲéèɲ = ān	‘spear type’
ŋ	mɔ̃ŋ	mɔ̃ŋ = ʃn	‘wild cat type’
r	púr	púr = ún	‘flower’
l	ḍòḥḍl	ḍòḥḍl = ʃn	‘millipede’

Plural stems

In (33), the locative copular and dative clitic is attached to plural nouns with various plural suffixes.

(33) Locative and dative clitics on plural nouns

Suffix	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
-gg	wáár	wáár-g	wáár = ān	wáár-g = ān	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = ān	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú = n	kúúfú-gg = ún	‘beans’
-Āgg	célḍ	célḍ-āgg	célḍ = ān	célḍ-āgg = ān	‘broom’
-ÉĒgg	púr	púr-íigg	púr = ún	púr-íigg = ʃn	‘flower’
-ĀAgg	íl	íl-ààgg	íl = ʃn	íl-ààgg = ʃn	‘horn’
-ĀAḍ	kàmàlògg	kàmàlògg-	kàmàlògg = ʃn	kàmàlògg-	‘woman’
		ààḍ		ààḍ = ān	
-ḍ	ābbéé	ābbéé-ḍ	ābbéé = n	ābbéé-ḍ = ān	‘uncle’
-ḍ/-gg	gèrmù-ḍ	gèrmù-gg	gèrmù = ḍ = ún	gèrmù-gg = ún	‘insect’
-Eḍ/-gg	jín-íḍ	jín-g	jín-íḍ = ʃn	jín-g = ʃn	‘louse’

7.5.2 Locative copular and dative tonal morphology

The locative copular and dative clitics = $\bar{A}n$, = $\bar{V}n$ have underlying High-Mid tone, and the clitic = \bar{n} on vowel-final stems has underlying Mid tone.

Monosyllabic underlying approximant-final stems

In (34), locative copular and dative clitics are attached to nouns with the stem-final dental approximant δ and three tone melodies. Clitic High tone becomes Mid when attached to stem-final Low tone {M9}.

(34) **Locative/Dative clitic = $\bar{A}n$** **on stem-final δ nouns with three tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	ǰááð	ǰááð-āāgg	ǰááð = ān	ǰááð-āāgg = ān	‘old clothes’
M	mǿǿð	mǿǿð-ǿǿq	mǿǿð = ǿn	mǿǿð-ǿǿq = ǿn	‘grandfather’
L	yààð	yààð-āāq	yààð = ān	yààð-āāq = ān	‘sister’

In (35), the locative copula and dative clitic = $\bar{A}n$ is attached to monosyllabic approximant-final stems in which the final approximant can surface as a vowel or as an approximant. In either, the noun word tone melody is the same. High clitic tone lowers to Mid following stem-final Low tone in *bàà.w = ān* ‘father=LCM’. As in the copular and definite forms of such nouns with HL and ML stem tone melodies, the Low tone delinks and reassigns to the clitic, replacing the clitic tone, in contradiction of {M6}.

(35) **Locative/Dative clitic = $\bar{A}n$** **on monosyllabic approximant final stems with various tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	ááé	ááy-g	áá.é = n	áá.y = ān	ááy-g = á ‘honey’
M	mūī	mūy-g	mū.ī = n	mū.y = ǿn	mūy-g = ǿ ‘wildebeest’
L	bààð	bààw-āāq	bàà.ð = n	bàà.w = ān	bààw-āāq = á ‘father’
HL	káð	kâw-g	ká.ð = n	ká.w = àn	kâw-g = ā ‘hyena’
ML	ǰūūì	ǰūūy-g	ǰūū.ì = n	ǰūū.y = ðn	ǰūūy-g = ǿ ‘leopard’

Monosyllabic long vowel-final stems

In (36), the locative copular and dative clitic = $\bar{V}n$ is juxtaposed to monosyllabic long vowel-final stems. Clitic High tone again becomes Mid when attached to Low stem melodies {M9}. In HL and ML stem melodies, the final Low tone delinks and reassigns to the clitic, replacing the clitic tone, in contradiction of {M6}.

(36) **Locative/Dative clitic = $\bar{V}n$** **on monosyllabic long vowel final stems with various tone melodies**

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	cáá	cáá-gg	cáá. = ān	cáá-gg = ān	‘wild cat’
M	mīī	mīī-gg	mīī. = īn	mīī-gg = ǿn	‘goat’
L	q̄ìì	q̄ìì-gg	q̄ìì. = ìn	q̄ìì-gg = ǿn	‘rat’
HL	máà	máà-gg	máá. = àn	máà-gg = ān	‘house’
ML	ǰīī	ǰīī-gg	ǰīī. = ìn	ǰīī-gg = ǿn	‘turkey’
MH	mīí	mīí-gg	mīī. = īn	mīí-gg = ǿn	‘chicken’

Polysyllabic vowel final stems

In (37), the locative copula and dative clitic = \bar{n} is attached to nouns with various

tone melodies and stem-final vowels. Clitic Mid tone assimilates to stem-final Low tone {M9}.

(37) **Locative/Dative clitic = \bar{n}**

on vowel-final singular nouns with various tone melodies

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	wááyáá	wááyáá-gg	wááyáá = n	wááyáá-gg = ān	‘bird type’
M	ūrīī	ūrīī-gg	ūrīī = n	ūrīī-gg = ɔ̄n	‘ostrich’
L	ònsò	ònsò-gg	ònsò = n	ònsò-gg = ɔ̄n	‘cooking plate’
HL	órɔ̀àà	órɔ̀àà-gg	órɔ̀àà = n	órɔ̀àà-gg = ān	‘army’
HM	sáárfāā	sáárfāā-gg	sáárfāā = n	sáárfāā-gg = ān	‘rat’
ML	gɔ̀ūlɔ̀èè	gɔ̀ūlɔ̀èè-gg	gɔ̀ūlɔ̀èè = n	gɔ̀ūlɔ̀èè-gg = ɔ̄n	‘fish’
LM	m̀ràā	m̀ràā-gg	m̀ràā = n	m̀ràā-gg = ān	‘governor’
MH	pēēɔ̀áá	pēēɔ̀áá-gg	pēēɔ̀áá = n	pēēɔ̀áá-gg = ān	‘crack’

Consonant-final stems

In (38), the locative copular and dative clitic = $\bar{A}n$ is attached to nouns with various tone melodies and stem-final consonants. Clitic High tone becomes Mid when the clitic follows stem-final Low tone {M9}.

(38) **Locative/Dative clitic = $\bar{A}n$**

on consonant-final singular nouns with various tone melodies

Tone	N SG	N PL	LCM/DAT N SG	LCM/DAT N PL	
H	wáár	wáár-g	wáár = ān	wáár-g = ān	‘insect type’
M	ɔ̀m	ɔ̀m-g	ɔ̀m = ɔ̄n	ɔ̀m-g = ɔ̄n	‘Arab’
L	kààm	kààm-g	kààm = ān	kààm-g = ān	‘cow type’
HL	séèn	séèn-g	séèn = ān	séèn-g = ān	‘ruler’
HM	jórgāāl	jórgāāl-g	jórgāāl = ān	jórgāāl-g = ān	‘bird type’
ML	kɔ̀èl	kɔ̀èl-g	kɔ̀èl = ān	kɔ̀èl-g = ān	‘baboon’
LH	àggáár	àggáár-g	àggáár = ān	àggáár-g = ān	‘hunter, rider’
LM	g̀èn	g̀èn-g	g̀èn = ān	g̀èn-g = ān	‘metal worker’
MH	báár	báár-g	báár = ān	báár-g = ān	‘tribe member’

7.6 Accompaniment

7.6.1 Accompaniment segmental morphology

As will be discussed in 11.1, the accompaniment clitic is used on nouns in adjuncts introduced by the preposition $\bar{\epsilon}$ ‘with’ if the noun has the semantic role of accompaniment.

- (39) bāárg = á áǎǎ`n ànân è jǒgg gǒǒr = ē̄
 Baggara = DEF coming staying with people Goor = ACM
 ‘The Baggara were coming with the people of Goor.’ (Minj4)

The accompaniment clitic = $n\bar{E}$ is attached to stems with underlying-final approximant or final vowel. The clitic = \bar{E} is attached to consonant-final stems.

Table 19: Accompaniment clitics

Stem-final segment	ACM
(Monosyllabic) underlying approximant	= $n\bar{E}$
(Monosyllabic) long vowel	= $n\bar{E}$
(Polysyllabic) vowel	= $n\bar{E}$
Consonant	= \bar{E}

Monosyllabic underlying approximant final singular stems

In (40), the accompaniment clitic = $n\bar{E}$ is attached to singular nouns with stem-final dental approximant δ in (a-e) and to stems with underlying-final approximants w or y in (f-g). The clitic vowel takes the [ATR] quality of the root {M3}.

- (40) **Accompaniment clitic = $n\bar{E}$ on singular nouns with stem-final δ**
- | Stem-final | N SG | ACM N SG | |
|--------------------|------|-------------------|---------------|
| (a) δ | jááǎ | jááǎ = $n\bar{e}$ | ‘old clothes’ |
| (b) | mǎǎǎ | mǎǎǎ = $n\bar{i}$ | ‘grandfather’ |
| (c) | mēēǎ | mēēǎ = $n\bar{e}$ | ‘tree type’ |
| (d) | kūūǎ | kūūǎ = $n\bar{i}$ | ‘shadow’ |
| (e) | yààǎ | yààǎ = $n\bar{e}$ | ‘sister’ |
| (f) $\text{ɔ} /w/$ | bààǎ | bààǎ = $n\bar{e}$ | ‘father’ |
| (g) $\text{ɛ} /y/$ | rāāē | rāāē = $n\bar{e}$ | ‘quarrel’ |

Vowel-final singular stems

In (41), the accompaniment clitic = $n\bar{E}$ is attached to singular nouns with various stem-final long and short vowels as in (a-j). The clitic also attaches to monosyllabic long vowel stems (k) and stems with underlying-final velar plosive g (m).

- (41) **Accompaniment clitic = $n\bar{E}$ on singular nouns with stem-final vowels**
- | Stem-final | N SG | ACM N SG | |
|-----------------|--------|---------------------|--------------|
| (a) ɛɛ | ābbéé | ābbéé = $n\bar{e}$ | ‘uncle’ |
| (b) ii | ūrīī | ūrīī = $n\bar{i}$ | ‘ostrich’ |
| (c) aa | wááyáá | wááyáá = $n\bar{e}$ | ‘bird type’ |
| (d) əə | gǒūlǎǎ | gǒūlǎǎ = $n\bar{i}$ | ‘fish’ |
| (e) ɔɔ | mélǎǎ | mélǎǎ = $n\bar{e}$ | ‘sugar cane’ |

	Stem-final	N SG	ACM N SG	
(f)	uu	ɔ́yúú	ɔ́yúú = nī	‘tooth brush’
(g)	a	ʔááðà	ʔááðà = nē	‘grandmother’
(h)	ə	əŋə	əŋə = nī	‘little girl’
(i)	ɔ	ðnsð	ðnsð = nē	‘cooking plate’
(j)	u	kúfú	kúfú = nī	‘crushed beans’
(k)	aa	cáá	cáá = nē	‘wild cat’
(l)	uə	būə	būə = nī	‘tree type’
(m)	(g)	áŋé(g)	áŋé = nē	‘elephant’

Consonant-final singular stems

In (42), the accompaniment clitic = \bar{E} is attached to singular nouns with various stem-final consonants.

(42) Accompaniment clitic = \bar{E} on singular nouns with stem-final consonants

Stem-final	N SG	ACM N SG	
bb	ʃíləbb	ʃíləbb = ī	‘water spring’
ɖ	māāɖ	māāɖ = ē	‘snake type’
d	dɔ́d	dɔ́d = ē	‘bird type’
ʃ	bìmiríʃ	bìmiríʃ = ī	‘bird type’
gg	kàmàləgg	kàmàləgg = ē	‘woman’
s	márɔ́s	márɔ́s = ē	‘spider’
m	ɖəm	ɖəm = ī	‘Arab’
n	séèn	séèn = ē	‘ruler’
ɲ	ɲéèŋ	ɲéèŋ = ē	‘spear type’
ŋ	məŋ	məŋ = ī	‘wild cat type’
r	púr	púr = ī	‘flower’
l	ɖəŋəl	ɖəŋəl = ē	‘millipede’

Plural stems

In (43), the accompaniment clitic = \bar{E} is attached to plural nouns with various plural suffixes. The singular nouns and singular accompaniment forms are given for comparison.

(43) Accompaniment clitic = \bar{E} on plural nouns

Suffix	N SG	N PL	ACM N SG	ACM N PL	
-gg	wáár	wáár-g	wáár = ē	wáár-g = ē	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá = nē	wááyáá-gg = ē	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú = nī	kúúfú-gg = ī	‘beans’
-Āgg	célɖ	célɖ-āgg	célɖ = ē	célɖ-āgg = ē	‘broom’
-ÉĒgg	púr	púr-ígg	púr = ī	púr-ígg = ī	‘flower’

Suffix	N SG	N PL	ACM N SG	ACM N PL	
- <u>AA</u> gg	íl	íl-ààgg	íl = ī	íl-ààgg = ī	‘horn’
- <u>AA</u> ḍ	kàmàlògg	kàmàlògg-ààḍ	kàmàlògg = ē	kàmàlògg-ààḍ = ē	‘woman’
-ḍ	ābbéé	ābbéé-ḍ	ābbéé = nē	ābbéé-ḍ = ē	‘uncle’
-ḍ/-gg	gèrmù-ḍ	gèrmù-gg	gèrmù-ḍ = ī	gèrmù-gg = ī	‘insect’
-Ed/-gg	jíŋ-íd	jíŋ-g	jíŋ-íd = ī	jíŋ-g = ī	‘louse’

7.6.2 Accompaniment tonal morphology

The accompaniment clitic =*nĒ* on approximant-final stems and vowel-final stems has underlying Mid tone. However, this clitic is an exception to the tone lowering rule {M9} of 3.4.3. The clitic =*Ē* on consonant-final stems has underlying HM tone and is in accordance with {M9}.

Dental approximant *ð* final stems

In (44), Mid tone of the clitic =*nĒ* is not lowered following stem-final Low tone and thus {M9} is not applied to this suffix.

(44) Accompaniment clitic =*nĒ* on stem-final *ð* nouns with three tone melodies

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	jááð	jááð-āāgg	jááð = nē	jááð-āāgg = ē	‘old clothes’
M	māðð	māðð-óóḍ	māðð = nī	māðð-óóḍ = ī	‘grandfather’
L	yààð	yààð-āāḍ	yààð = nē	yààð-āāḍ = ē	‘sister’

Vowel-final stems

In (45), the accompaniment clitic =*nĒ* is attached to nouns with stem-final vowels and various tone melodies. As in approximant-final stems, Mid tone of the clitic =*nĒ* is not lowered following stem-final Low tone.

(45) Accompaniment clitic =*nĒ* on vowel-final singular nouns with various tone melodies

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	wááyáá	wááyáá-gg	wááyáá = nē	wááyáá-gg = ē	‘bird type’
M	ūrīī	ūrīī-gg	ūrīī = nī	ūrīī-gg = ī	‘ostrich’
L	ònsò	ònsò-gg	ònsò = nē	ònsò-gg = ē	‘cooking plate’
HL	órḍàà	órḍàà-gg	órḍàà = nē	órḍàà-gg = ē	‘army’
HM	sáárfāā	sáárfāā-gg	sáárfāā = nē	sáárfāā-gg = ē	‘rat’
ML	gəũldḍə	gəũldḍə-gg	gəũldḍə = nī	gəũldḍə-gg = ī	‘fish’
LM	mòràā	mòràā-gg	mòràā = nē	mòràā-gg = ē	‘governor’
MH	pēēḍáá	pēēḍáá-gg	pēēḍáá = nē	pēēḍáá-gg = ē	‘crack’

Consonant-final stems

In (46), the accompaniment clitic = \acute{E} is attached to nouns with stem-final consonants and various tone melodies. High tone in the clitic becomes Mid when the clitic is attached to stem-final Low tone {M9}.

(46) **Accompaniment clitic = \acute{E}
on consonant-final singular nouns with various tone melodies**

Tone	N SG	N PL	ACM N SG	ACM N PL	
H	wáár	wáár-g	wáár = \acute{e}	wáár-g = \acute{e}	‘insect type’
M	ḍǝm	ḍǝm-g	ḍǝm = $\acute{ɪ}$	ḍǝm-g = $\acute{ɪ}$	‘Arab’
L	kààm	kààm-g	kààm = \acute{e}	kààm-g = \acute{e}	‘cow type’
HL	séèn	séèn-g	séèn = \acute{e}	séèn-g = \acute{e}	‘ruler’
HM	ǰǝrgāāl	ǰǝrgāāl-g	ǰǝrgāāl = \acute{e}	ǰǝrgāāl-g = \acute{e}	‘bird type’
ML	kǝḍḍèl	kǝḍḍèl-g	kǝḍḍèl = \acute{e}	kǝḍḍèl-g = \acute{e}	‘baboon’
LH	àggáár	àggáár-g	àggáár = \acute{e}	àggáár-g = \acute{e}	‘hunter, rider’
LM	gḍēn	gḍēn-g	gḍēn = \acute{e}	gḍēn-g = \acute{e}	‘metal worker’
MH	bāár	bāár-g	bāár = \acute{e}	bāár-g = \acute{e}	‘tribe member’

As discussed in section 2.4, no more than one tone is assigned on short, open syllables in roots. Although the short, open syllable clitic = \acute{E} allows two tones to be assigned, there is commonly some alternation.

When the accompaniment clitic is attached to stems with final Mid tone, the High of the High-Mid clitic = \acute{E} is lowered to a pitch half-way between High and Mid tone before falling to Mid tone. The quick ‘half’ High-Mid falling tone sounds like a strong Mid tone syllable, and is different to speakers and hearers than the regular Mid tone.

When the accompaniment clitic = \acute{E} is attached to stems with final High tone, the High of the High-Mid clitic is sometimes unassigned so that the surface tone of the clitic vowel is only Mid tone. At other times, the Mid of the High-Mid clitic is unassigned so that the surface tone of the clitic vowel is only High tone. Still, at other times, both tones surface on the clitic vowel. These alternations differ for the same nouns for the same speakers, depending on the quickness of speech, rather than because of phonological features of the stem segments. The slower the noun form is spoken, the more likely that both tones will be uttered.

7.7 Subordinate clause-final clitic

In subordinate clauses such as those beginning with the subordinate conjunction \acute{e} *gārá* ‘when’, the clitic = \acute{E} attaches to the clause-final word. The marker = \acute{E} attaches to the subordinate clause of (47a), beginning with the conjunction \acute{e} *gārá*

‘when’, and to the subordinate clause δ *gàð-sā gùrūs = í* ‘and when a person gave money,’ of (b), having the same function but without the subordinate conjunction.

(47a) \acute{e} *gārá* *kṣs-s=í* *ūfú-n=í*, \bar{e} *dṣṣ*
 GP when struck-COMP = SBO1 tree-DEF = SBO 3sN start
 ‘When she struck the tree, she began . . .’ (Nyee14)

(b) $b\bar{e}\acute{e}l$ *mān* *ṭā-án* *ṭù* δ *gàð-sā* *gùrūs = í*
 metal certain was there and give-COMP money = SBO (Ar)
 ‘There was a certain metal token, and when (a person) gave money,

\bar{e} *gḁf = ūn = ì* *ḁ-ṣṣs*.
 3sN give = 2sD = 3sAM in-hand.2sPs
 he gave it to you as certificate of payment (lit. in your hand)’ (Fand8-9)

The subordinate clause-final clitic = \acute{E} (SBO) should not be confused with the subordinate verb-final clitics (SBO1, SBO2) of 10.7. In (47a), the clitic = \acute{y} (SBO1) attaches to the verb *kṣs-s = \acute{y}* ‘struck=COMP = SBO1’ in addition to the clause-final clitic = \acute{E} (SBO) and is a different morpheme.

Subordinate clauses are further discussed in section 15.2 on conjunctions. In 15.3 it will be shown that the subordinate clause-final clitic attaches to interrogative clauses in which the interrogative pronoun is pre-verbal. As shown in (23) of 4.1.11, subordinate clauses can contain relative clauses. In 14.7 the difference between subordinate clauses and relative clauses is discussed.

The subordinate clause clitic = \acute{E} attaches to singular and plural nouns with stem-final consonants and the clitic = $n\acute{E}$ attaches to stem-final vowels.

Table 20: Subordinate clause clitic

Stem-final segment	SBO N SG	SBO N PL
Vowel	= $n\acute{E}$	
Consonant	= \acute{E}	= \acute{E}

In (48), the clitic = $n\acute{E}$ attaches to vowel-final noun stems with various root tone melodies. Subordinate clitic High tone lowers to Mid following stem-final Low tone {M9}.

(48) **Subordinate clause clitic = $n\acute{E}$ attached to vowel-final noun stems**

Tone	N SG	N PL	SBO N SG	SBO N PL	
H	<i>ṭṣṣ</i>	<i>ṭṣ-gg</i>	<i>ṭṣṣ = né</i>	<i>ṭṣ-gg = é</i>	‘cow’
M	<i>mīī</i>	<i>mīī-gg</i>	<i>mīī = ní</i>	<i>mīī-gg = í</i>	‘goat’
L	<i>ḁīī</i>	<i>ḁīī-gg</i>	<i>ḁīī = nī</i>	<i>ḁīī-gg = ī</i>	‘rat’
HL	<i>wírī</i>	<i>wírī-gg</i>	<i>wírī = nī</i>	<i>wírī-gg = ī</i>	‘bird’

HM	cééṽ	cééṽ-gg	cééṽ = né	cééṽ-gg = é	‘cripple’
ML	ṽūūi	ṽūūi-gg	ṽūūi = nī	ṽūūi-gg = ī	‘leopard’
LM	mṽrāā	mṽrāā-gg	mṽrāā = né	mṽrāā-gg = é	‘governor’
MH	kāsá	kāsá-gg	kāsá = né	kāsá-gg = é	‘boy’

In (49), the clitic =É attaches to consonant-final noun stems with various root tone melodies. Subordinate clitic High tone again lowers to Mid following stem-final Low tone {M9}.

(49) **Subordinate clause clitic =É attached to consonant-final noun stems**

Tone	N SG	N PL	SBO N SG	SBO N PL	
H	kólíḍ	kólí-īgg	kólíḍ = í	kólí-īgg = í	‘bird’
M	ṽēḍēl	ṽēḍēl-g	ṽēḍēl = é	ṽēḍēl-g = é	‘bird’
L	dàìḍ	dàìḍ-àgg	dàìḍ = ī	dàìḍ-àgg = ī	‘scorpion’
HL	ásàr	ásàr-g	ásàr = ī	ásàr-g = ī	‘army’
HM	márṽṽs	márṽṽs-ṽgg	márṽṽs = é	márṽṽs-ṽgg = é	‘spider’
ML	gṽmūūr	gṽmūūr-ìgg	gṽmūūr = ī	gṽmūūr-ìgg = ī	‘dove’
LH	àggáár	àggáár-g	àggáár = é	àggáár-g = é	‘hunter’
LM	gṽṽṽṽ-ḍ	gṽṽṽṽ-g	gṽṽṽṽ-ḍ = í	gṽṽṽṽ-g = í	‘bird’
MH	tēṽḍás	tēṽḍás-āgg	tēṽḍás = é	tēṽḍás-āgg = é	‘bird’

8 Adjectives

As discussed in 4.3, adjectives are analyzed as a distinct lexical category from either nouns or verbs since they are not used in some of the syntactic constructions of either nouns or verbs, and there are differences in the morphology from either category. Adjectives are generally not attested (NA) in use as subjects, objects, or objects of prepositions. As will be discussed in 8.3, there are three differences in the stem morphology of nouns and adjectives with final consonants. In verb paradigms, the long forms of subject pronouns precede the adjectival verb instead of short subject pronouns as in true verbs. The plural adjective suffix *-gg* and copular clitic *=A* attach to adjectival verbs of plural persons, whereas these bound morphemes are not attached to any true verb forms. These and other details specifying the difference between adjectives and nouns and verbs are found in 4.3.

Adjective types are discussed in 8.1, stem morphology of qualitative adjectives in 8.2, and word morphology of qualitative adjectives in 8.3.

8.1 Adjective types

Numerals (8.1.1), quantitative adjectives (8.1.2), demonstratives (8.1.3) and qualitative adjectives (8.1.4) immediately follow nouns in noun phrases and specify some property of the nouns they follow. Thus, all of these can be analyzed categorically as adjectives. Nevertheless, there are some differences.

Demonstratives and qualitative adjectives agree in number with the nouns they modify, whereas numerals and quantitative adjectives do not. Rather, numerals and quantitative adjectives have different lexemes depending on whether the nouns they modify are singular or plural. Only the morphology of qualitative adjectives is similar to that of nouns. For further discussion of adjectives in noun phrases, see 14.9.2.

8.1.1 Numerals

The numeral *ṭāmán* ‘one’ is used with singular nouns. All other cardinal numbers are used with plural nouns.

(1a) *ār ú = bilī jōgg kāē wá, bēl jēn ṭāmán*
 hey 2pN = hit people all not hit person one
 ‘Don’t kill all the people; just kill the one man.’ (Fand29)

(b) *jāfārì = n é mánē jō ḍàḍ-sā càḍr-ēēgg = á yōōsá*
 Jafari = DEF alone just killed rabbits-PL = DEF four
 Jafari, by himself, killed four rabbits. (Jafr7)

Gaahmg numerals draw upon words for hands, feet, and eyes. Hands and feet are representative of the number of fingers and toes that they contain. The numeral *áás-áámán* ‘five (hand-one)’ is based on the five fingers of one hand. The numeral *ídíg-dáágg* ‘seven (eyes-two)’ is based on the two eyes—apparently in addition to the five fingers of one hand which are not included in the numeral. The numeral *ásēg-dí* ‘ten (hands-also)’ is based on the ten fingers of two hands. The numeral *ǰāā dùi ǰēŋ* ‘twenty (person black body)’ is based on all the fingers and toes of a black person’s body. It is interesting that the word *dùi* ‘black’ is included in the construction of the numeral, although having nothing to do with the numeral itself. The numerals ‘forty’, ‘sixty’, and higher multiples of twenty are ‘two bodies’, ‘three bodies’ etc.

(2) **Numerals (cardinal numbers)**

<i>ǰāmán</i>	1	
<i>ǰáágg</i>	2	
<i>ǰǒǒ</i>	3	
<i>yǰǰǰǰ</i>	4	
<i>áás-áámán</i>	5	(hand.1sPs-one)
<i>ǰǰǰǰ</i>	6	
<i>ídíg-dáágg</i>	7	(eye.3sPp-two)
<i>ídíg-ǰǒǒ</i>	8	(eye.3sPp-three)
<i>ídíg-yǰǰǰǰ</i>	9	(eye.3sPp-four)
<i>ásēg-dí</i>	10	(hand.3sPp-also)
<i>ásēgdí ì ná ǰāmán</i>	11	(ten with REL one)
<i>ásēgdí ì ná ǰáágg</i>	12	(ten with REL two)
<i>ǰāā dùi ǰēŋ</i>	20	(person black body)
<i>ǰāā dùi ǰēŋ ì ná ǰāmán</i>	21	(twenty with REL one)
<i>ǰāā dùi ǰēŋ ì ná ǰáágg</i>	22	(twenty with REL two)
<i>ǰāā dùi ǰēŋ ì ná ásēgdí</i>	30	(twenty with REL ten)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ ǰáágg</i>	40	(people black body.PL-DEF two)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ ǰáágg ì ná ásēgdí</i>	50	(forty with REL ten)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ ǰǒǒ</i>	60	(people black body.PL-DEF three)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ ǰǒǒ ì ná ásēgdí</i>	70	(sixty with REL ten)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ yǰǰǰǰ</i>	80	(people black body.PL-DEF four)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ yǰǰǰǰ ì ná ásēgdí</i>	90	(eighty with REL ten)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ áásáámán</i>	100	(people black body.PL-DEF five)
<i>ǰǰǰ dùiǰǰ ìŋ-ǰ ásēgdí</i>	200	(people black body.PL-DEF ten)

Ordinal numbers are constructed with cardinal numbers in relative clauses used as modifiers of the head noun. However, the numerals *mǰǰǰǰ* and *yǰàn* are used for ‘first’ and ‘second’ instead of *ǰāmán* ‘one’ and *ǰáágg* ‘two’.

- (3a) $\text{dù-d} = \bar{u}$ ná $\text{mōdgg} = \bar{e}$ wēdán
 year-SG = DEF REL first = REL good.SG
 ‘The first year is good.’
- (b) $\text{dù-gg} = \bar{u}$ nà $\text{śō} = \bar{e}$ $\text{wíā-gg} = \bar{ə}$
 year-PL = DEF REL.PL first = RDM good-PL = COP
 ‘The third year is good.’

(4) **Ordinal numbers**

$\text{mōdgg} = \bar{e}$	‘first’
$\text{yāàn} = \bar{e}$	‘second’
$\text{śō} = \bar{e}$	‘third’
$\text{yāēs} = \bar{i}$	‘fourth’
$\text{āāsāāmān} = \bar{i}$	‘fifth’
$\text{tāldìg} = \bar{i}$	‘sixth’
$\text{ídìgdāagg} = \bar{e}$	‘seventh’
$\text{ídìggō} = \bar{e}$	‘eighth’
$\text{ídìgyāēs} = \bar{i}$	‘ninth’
$\text{āsōgō} = \bar{i}$	‘tenth’
$\text{āsōgdí} \bar{i} \text{ ná } \text{tāmān} = \bar{e}$	‘eleventh’
$\text{āsōgdí} \bar{i} \text{ ná } \text{dāagg} = \bar{e}$	‘twelfth’

8.1.2 Quantitative adjectives

Indefinite adjectives and quantitative adjectives can be grouped into the same semantic and syntactic category. There are different indefinite adjectives depending on whether the nouns they follow and modify are singular or plural.

- (5) Mīi **mān** nāmānē é $\text{ūlg} = \bar{i}$ māŋ wá .
 goat certain beaten GP thirst.GEN-3sP well not
 There was once a very thirsty goat. (Goat1)

Singular and plural referents can have differing or the same root forms. The cardinal number ‘one’ *tāmān* could be derived from *mān* ‘any, certain’.

(6) **Indefinite adjectives**

Singular		Plural	
mān	‘any, certain’	bīgg	‘certain’
dāàn, yāàn	‘different, another’	$\text{dāān} = \bar{àgg}$	‘others’

There are also different quantitative adjectives depending on whether the nouns they follow and modify are singular or plural.

- (7a) mōīd kūūđ = ū đàđ-sā jèèm **đéé** wá
 old.man person.name = DEF kill-COMP thing any not
 ‘The old man of Kuud didn’t kill anything.’ (Jafr8)
- (b) é gārā đóđ-s = ɿ īigg = ó = r **kāy** = é
 GP when milk-COMP = SBO1 milk = DEF = PF all = SBO
 ‘When all the milk was completely milked, . . .’ (Nyee25)
- (c) é đđ̣-j āāggá é mīīđ-óg **f̄róg** wá b̀̀ = ɿ
 3sN /đđ̣/stone-INF 1pA GP stone-PL few not oh = SBO
 ‘When it pelted us with a lot of stones, . . .’ (Thng20)
- (d) á bās-sā ógg **ɿ̀̀lg**
 1sN throw-COMP time many
 ‘I threw many times.’

Singular and plural referents of quantitative adjectives have differing root forms. There is no attested singular counterpart of *f̄róg* ‘few’.

(8) **Quantitative adjectives**

Singular		Plural
đéé	‘any’	kāē
bum	‘much’	ɿ̀̀lg
-----		f̄róg
		‘few’

8.1.3 Demonstratives

Demonstratives follow and agree in number with the nouns they modify. They are not used pronominally. High tone on the initial syllable marks agreement with a singular noun and Low tone marks agreement with a plural noun.

(9) **Demonstratives**

- (a) b̀̀i f̄j̄ó-đ̄ k̄r ó̄n **n̄í** mā m̄n̄
 let hear word 1sPs this very carefully
 ‘Listen carefully to what I am saying (lit. this my word)!’ (Womn3)
- (b) ágg f̄ēssā đ̀̀-gg = ū **n̄èè** k̄ē
 1pN grazed year-PL=DEF **these** all
 ‘We grazed (cows) all these years.’
- (c) ú ɿ̀̀đ̄đ̄n = ɿ ɿ̀̀-gg = ó ḡâr-g = ā **n̄ààđ̄i** k̄ē j̄íín̄đ̄
 2sN putting=them cow-PL=DEF place-PL=DEF **those** all why
 ‘Why were you putting all those cows into a certain place?’

The three-way distinction is for near a speaker, near an addressee, and away from both speaker and addressee. The singular and plural demonstratives *náá(n)* ‘that’ *nàà(n)* ‘those’ optionally have a final segment *n*.

(10) **Demonstratives**

DEM SG		DEM PL		
níí, néé	‘this’	nèè	‘these’	near speaker
náá(n)	‘that’	nàà(n)	‘those’	near addressee
nááđī	‘that’	nààđī	‘those’	away from both

The same three-way distinction is present in demonstrative locative adverbs which can be in short or long form.

- (11) gəl Fónđī bəg-s = ən = ɪn líjɪ é kərɪūm ɬɛ.
 just Fandi catch-COMP = PAS = 3pD arrived GP Khartoum here
 Fandi was captured by them (government officials),
 and brought here to Khartoum. (Fand6)

(12) **Demonstrative locative adverbs**

Long	Short		
ɬɛɛðé	ɬɛ	‘here’	near speaker
ɬààdá	ɬà	‘there’	near addressee
ɬiiðí	ɬi	‘there’	away from both

8.1.4 Qualitative adjectives

Qualitative adjectives, including adjectives of colour, also follow and agree in number with the noun they modify, as shown by the examples of (13).

- (13a) á nām jɛr bər (b) á nām jɛr-g bər-g
 1sN want sorghum yellow 1sN want sorghum-PL yellow-PL
 ‘I want yellow sorghum.’ ‘I want yellow types of sorghums.’

Gaahmg has five colour distinctions.

(14) **Colour adjectives**

ADJ SG		ADJ PL		
jāā	ɖùì	jōgg	ɖùì-gg	‘black person’
léél	nāār	léél-g	nāār-g	‘green grass’
níí-ɖ	póð	níí-gg	póð-g	‘white tooth’
áfá-ɖ	bèrà	áfá-āgg	bèrà-gg	‘red blood’
jɛr	bər	jɛr-g	bər-g	‘yellow sorghum’

The examples of (15) are representative of other qualitative adjectives.

(15) **Qualitative adjectives**

ADJ SG		ADJ PL		
gàar	cúú	gàar-èègg	cúú-gg	'sweet pork'
wéé	bér	wís-ḡg	bér-g	'clean house'
kòlèèð	ñ	kòlèèð-g	ñ-gg	'heavy sword'
jēn	bándāl	jōg	bándāl-g	'weak person'
kágðàr	áè	kágðàr-g	áy-g	'sour food'
ṭó	kóófàr	ṭó-g	kóófàr-g	'thin cow'
kàmàlògg	kāyáar	kàmàlògg-ààḡ	kāyáar-g	'beautiful girl'
ḡal	lūsú	ḡal-g	lūsú-gg	'hot cooking pot'
ḡèl	gàal	ḡèl-èègg	gàal-g	'distant lake'
ṭààð	kár	ṭààð-g	kár-g	'loose door'
sáá	ón	sá-gg	ón-g	'bad wine'
sáàð	yáá	sááw-èègg	yáá-gg	'new grass-cutter'
māàð	fūūi	māàw-èègg	fūūy-g	'male gazelle'
páré	sàmāār	páré-ḡgg	sàmāār-g	'rough leather bag'
páré	bāal	páré-ḡgg	bāal-g	'striped bag'
əṅə	ḡəmā	əṅ-g	ḡəmā-gg	'blind girl'
jēn	céé	jōgg	céé-gg	'unavailable person'
būúl	káé	būúl-g	kāy-g	'finished bread'
jāā	ḡúsú	jāālgé	ḡúsú-gg	'ignorant boy'
mḡsḡr	būr	mḡsḡr-èèg	būr-g	'remaining horse'
jāā	ḡəṅər	jōgg	ḡəṅər-g	'stuttering boy'

8.2 Qualitative adjective stem morphology

Word structure of qualitative adjectives can be ordered according to the schemes of (16). As in nouns, the adjective stem consists of the root and an optional plural suffix. The adjective word consists of the stem and optional slots for copula, definite, locative, dative, accompaniment, subordinate, and relative definite clause marker clitics.

- (16) Adjective stem = root + (PL marker)
 Adjective word = [ADJ stem] + ({COP, DEF, LCM, DAT, ACM, SBO, RDM})

Plural formation of qualitative adjectives is similar to that of nouns in that adjective roots attach the segmental suffix -gg with more than one tonal allomorph.

8.2.1 Segmental plural formation of adjectives

Plural formation of adjectives nearly always involves attaching the suffix -gg in the plural form. As in nouns, the suffix attaches to root-final sonorants and vowels.

Table 21: Adjective Plural Formation

Suffix	Root-final segment	ADJ SG	ADJ PL		Number
-gg	sonorant	dómɔ̃l	dómɔ̃l-g	‘big’	20
	vowel	yáá	yáá-gg	‘new’	10

The plural suffix *-gg* is attested to attach to root-final *r*, *l*, *n*, and *y*.

(17) **Plural adjective suffix *-gg***

UR-final	ADJ SG	ADJ PL	
/r/	kár	kár-g	‘loose’
/l/	dómɔ̃l	dómɔ̃l-g	‘big’
/n/	ón	ón-g	‘bad’
/y/	áè	ây-g	‘sour’
/y/	fũ̀ù	fũ̀ù-y-g	‘male’

The plural suffix *-gg* is also attested to attach to root-final short and long vowels.

(18) **Plural adjective suffix *-gg***

UR-final	ADJ SG	ADJ PL	
/ə/	ḍəm̃ə	ḍəm̃ə-gg	‘blind’
/u/	lūsú	lūsú-gg	‘hot’
/i/	wílí	wílí-gg	‘reflective’
/a/	yáá	yáá-gg	‘new’
/ə/	bós	bós-gg	‘acidic’
/u/	cúú	cúú-gg	‘sweet’
/ɛ/	céé	céé-gg	‘unavailable’
/i/	î	î-gg	‘heavy’

Only the adjectives of (19) have been attested with other suffixes and are analyzed as having irregular plural formation.

(19) **Irregular plural adjective formation**

ADJ SG	ADJ PL	
pārrās	pārs-ígg	‘full plate’
dā̀n	dā̀n-à̀g	‘another chicken’
kàràább	kàràá-ògg	‘troublesome boy’
wḗdà	wí-gg	‘good, beautiful’
mū̀ús	mū̀ús-ós	‘even, equal’
nā̀án	nā̀lgéégg	‘small, young’
fā̀	fā̀ng	‘old’
mā̀dā	mā̀ng	‘big’

8.2.2 Tonal plural formation of adjectives

The following tone melodies have been attested in adjectives.

(20) **Tone melodies in adjectives**

Root tone	ADJ SG	ADJ PL	
H	báár	báár-g	‘weak’
M	lōwō	lōwō-gg	‘round, circular’
L	gààl	gààl-g	‘distant, far’
HL	bûr	bûr-g	‘remaining’
HM	ɲáár	ɲáár-g	‘green’
ML	bāàl	bāàl-g	‘striped, coloured’
MH	mūús	mūús-ós	‘even, equal’
LM	sèggār	sèggār-g	‘strong’
LH	kàráább	kàráá-ōgg	‘troublesome’
HMH	wílí	wílí-gg	‘reflective mirror’

As shown by the contrasts of (21), there are two tonal allomorphs of the segmental suffix *-gg*, one with no underlying tone and one with Mid tone.

(21) **Tone melodies in adjectives**

Suffix	ADJ SG	ADJ PL	
-gg	báár	báár-g	‘weak’
-gg	kāyáár	kāyáár-g	‘beautiful’
-gg	yáá	yáá-gg	‘new’
-gg	céé	céé-gg	‘unavailable’

8.3 Qualitative adjective clitic morphology

Most clitic allomorphs attaching to nouns with various stem-final segments and number have the same form when attaching to adjectives of the same stem-final segments and number. There are three exceptions attested: the copular clitic = \bar{A} attaches to consonant-final singular nouns, whereas there is no copular marking on consonant-final singular adjectives; the definite clitic = Vn with no underlying tone attaches to monosyllabic long vowel-final nouns, whereas the definite clitic = $\acute{V}n$ with High tone attaches to monosyllabic long vowel-final adjectives; the definite clitic = \acute{A} with High tone attaches to plural nouns, whereas the definite clitic = \grave{A} with Low tone attaches to plural adjectives.

Table 22 lists the various clitics on stem-final segments and (22) gives example adjectives with the same order. Three combinations of clitics are included: the relative clause dative (RDTM)/ relative clause locative copula (RDCM), the relative clause definite and accompaniment (RDM=ACM), and relative clause definite and subordinate (RDM=SBO). Clitics on adjectives with certain stem-final segments

which have not been attested are left blank.

Table 22: Adjective word clitic allophones

Stem-final segment	COP	DEF	RDM	DAT/LCM	RDTM/RLCM
(Monosyllabic)vowel/approx.		= V̄n	= É		
(polysyllabic) vowel	= n̄	= n	= É	= n̄	= ÉÉn̄
Consonant	---	= Á	= É	= Án̄	= ÉÉn̄
Consonant Noun PL	= À	= À	= È	= Án̄	= ÉÉn̄

Stem-final segment	ACM	RDM=ACM	SBO	RDM=SBO
(polysyllabic) vowel	= n̄É	ÉÉ = n̄É	= n̄É	ÉÉ = n̄É
Consonant	= É	ÉÉ = n̄É	= É	ÉÉ = n̄É
Consonant Noun PL	= É̄	ÈÈ = n̄É	= É	ÈÈ = n̄É

(22a) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	COP	DEF	RDM	
î		î. = ín	î. = î	‘heavy’
ḍəmḍ	ḍəmḍ = n	ḍəmḍ = n	ḍəmḍ. = í	‘blind’
kāyáár	kāyáár	kāyáár = á	kāyáár = é	‘beautiful’
kāyáár-g	kāyáár-g = à	kāyáár-g = à	kāyáár-g = è	‘beautiful-PL’

(b) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	DAT/LCM	RDTM/RLCM	ACM	
ḍəmḍ	ḍəmḍ = n	ḍəmḍ. = ín	ḍəmḍ = n̄É	‘blind’
kāyáár	kāyáár = ān	kāyáár = éēn	kāyáár = é	‘beautiful’
kāyáár-g	kāyáár-g = ān	kāyáár-g = èēn	kāyáár-g = é̄	‘beautiful-PL’

(c) **Adjective word clitic allomorphs on various stem-final adjectives**

ADJ	RDM=ACM	SBO	RDM=SBO	
ḍəmḍ	ḍəmḍ. = í = n̄í	ḍəmḍ = ní	ḍəmḍ. = íí = ní	‘blind’
kāyáár	kāyáár = éé = n̄é	kāyáár = é	kāyáár = éé = né	‘beautiful’
kāyáár-g	kāyáár-g = èè = n̄é	kāyáár-g = é	kāyáár-g = èè = né	‘beautiful-PL’

Not enough adjective data was collected to make sure that the copula = **n̄** and accompaniment = **n̄É** clitics attached to stem-final vowels do not follow the tone lowering rule of {M9} in 3.4.3 as in nouns, but presumably this is the case.

8.3.1 Copular clitic

Copular clitics attach to adjectives. In the adjective non-verbal clauses of (23), the copular markers agree in number with the adjective to which they attach.

- (23a) $\text{t}^{\text{h}}\text{ó}$ $\text{s}^{\text{h}}\text{éggār}$ (b) $\text{t}^{\text{h}}\text{-gg}$ $\text{s}^{\text{h}}\text{éggār-g}=\text{à}$
 cow strong cow-PL strong-PL=COP
 ‘A cow is strong.’ ‘Cows are strong.’
- (c) $\text{t}^{\text{h}}\text{ó}=\text{n}$ $\text{d}^{\text{h}}\text{èm}^{\text{h}}=\text{n}$
 cow=DEF blind=COP
 ‘The cow is blind.’

The clitic $=\bar{n}$ attaches to polysyllabic vowel-final singular adjectives as in (23c), and the clitic $=\dot{A}$ attaches to plural adjectives as in (b), the same as in nouns with these stem-final segments. However unlike consonant-final singular nouns which attach the copular clitic $=\bar{A}$, consonant-final singular adjectives are unmarked by any copular clitic, as shown in (a).

Table 23: Copular clitics on adjectives

Stem-final segment	COP ADJ SG	COP ADJ PL
(Polysyllabic) vowel	$=\bar{n}$	
Consonant	---	$=\dot{A}$

The copular clitic $=n$ attaches to vowel-final singular adjectives and consonant-final singular adjectives are unmarked by any copular clitic.

(24) **Copular clitics on singular adjectives**

Stem-final	ADJ SG	COP ADJ SG	
Vowel	$\text{d}^{\text{h}}\text{èm}^{\text{h}}$	$\text{d}^{\text{h}}\text{èm}^{\text{h}}=\text{n}$	‘blind’
Consonant	$\text{j}^{\text{h}}\text{āán}$	$\text{j}^{\text{h}}\text{āán}$	‘young’

Stem-final HM tone becomes HL when followed by a copular clitic with Low tone {M7}.

(25) **Copular clitic $=\dot{A}$ on adjectives with various stem tone melodies**

Stem-final	ADJ SG	ADJ PL	COP ADJ SG	COP ADJ PL	
H	$\text{b}^{\text{h}}\text{ér}$	$\text{b}^{\text{h}}\text{ér-g}$	$\text{b}^{\text{h}}\text{ér}$	$\text{b}^{\text{h}}\text{ér-g}=\text{à}$	‘clean’
M	$\text{b}^{\text{h}}\text{án}^{\text{h}}\text{ā́l}$	$\text{b}^{\text{h}}\text{án}^{\text{h}}\text{ā́l-g}$	$\text{b}^{\text{h}}\text{án}^{\text{h}}\text{ā́l}$	$\text{b}^{\text{h}}\text{án}^{\text{h}}\text{ā́l-g}=\text{à}$	‘weak’
L	$\text{k}^{\text{h}}\text{óó}^{\text{h}}\text{fār}$	$\text{k}^{\text{h}}\text{óó}^{\text{h}}\text{fār-g}$	$\text{k}^{\text{h}}\text{óó}^{\text{h}}\text{fār}$	$\text{k}^{\text{h}}\text{óó}^{\text{h}}\text{fār-g}=\text{à}$	‘thin’
H/HM	$\text{k}^{\text{h}}\text{āy}^{\text{h}}\text{āár}$	$\text{k}^{\text{h}}\text{āy}^{\text{h}}\text{āár-g}$	$\text{k}^{\text{h}}\text{āy}^{\text{h}}\text{āár}$	$\text{k}^{\text{h}}\text{āy}^{\text{h}}\text{āár-g}=\text{à}$	‘beautiful’

8.3.2 Definite clitic

The definite clitic attaches to adjectives and agrees in number with the noun phrase head.

- (26a) ʈóó ɖəm̄ = n nāām (b) ʈó-gg sèggār-g = à nāām
 cow weak = DEF eating cow-PL weak-PL = DEF eating
 ‘The blind cow is eating.’ ‘The weak cows are eating.’

In singular noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective unless it is consonant-final and the noun is vowel-final.

(27) **Definite clitic on singular nouns and adjectives**

N-final	ADJ-final	DEF SG NP		
V = DEF	C = (DEF)	wéé = n	bér = (á)	‘the clean house’
C	V = DEF	kòlèèð	î = íñ	‘the heavy sword’
C	C = DEF	jēn	bándāl = á	‘the weak person’
V	V = DEF	bààð	fāā = n	‘the old father’

In plural noun phrases with a head noun and adjective modifier, the definite clitic attaches to the adjective and optionally to the head noun.

(28) **Definite clitic on plural nouns and adjectives**

N-final	ADJ-final	DEF PL NP		
C-PL = (DEF)	C-PL = DEF	wís-ḡg = (ḡ)	bér-g = à	‘the clean houses’
C-PL = (DEF)	C-PL = DEF	kòlèèð-g = (ḡ)	î-g = ð	‘the heavy swords’
C-PL = (DEF)	C-PL = DEF	jḡgg = (ḡ)	bándāl-g = à	‘the weak persons’
C-PL = (DEF)	C-PL = DEF	bààw-āāḡ = (á)	fāng = à	‘the old fathers’

As with definite clitics on nouns, definite clitics on adjectives differ depending on the stem-final segment. Polysyllabic vowel-final adjectives attach the definite clitic = n with no underlying tone and consonant final singular adjectives attach the definite clitic = Á with High tone, the same as in nouns with these types of final segments. However, two of the definite clitics attaching to adjectives differ from the clitics attaching to nouns with the same final segments. Monosyllabic vowel-final nouns attach the definite clitic = Vn with no underlying tone, but monosyllabic vowel-final adjectives attach the definite clitic = Vñ with High tone. Plural nouns attach the definite clitic = Á with High tone, but plural adjectives attach the definite clitic = À with Low tone.

Table 24: Definite clitics on adjectives

Stem-final segment	DEF ADJ SG	DEF ADJ PL
(Monosyllabic) long vowel or underlying approximant	= Vñ	
(Polysyllabic) vowel	= n	
Consonant	= Á	= À

Monosyllabic long vowel and underlying approximant-final adjectives attach the definite clitic = $\check{V}n$ with High tone. In $\check{d}\check{u}$. = $\check{i}n$ ‘black’, High suffix tone lowers to Mid following Low root tone {M9}. In \check{i} . = $\check{i}n$ ‘heavy’ and \acute{a} . = $\check{\epsilon}n$ ‘sour’, the underlying HLH tone results as HMM tone in accordance with rule {M10}, although in verbs, the rule only applies when the three tones are assigned to the same syllable.

(29) **Definite clitic = $\check{V}n$ on monosyllabic singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/a/	yáá	yáá. = á \check{n}	‘new’
/ə/	bóó	bóó. = ó \check{n}	‘acidic’
/u/	cúú	cúú. = ú \check{n}	‘sweet’
/ɛ/	céé	céé. = é \check{n}	‘unavailable’
/i/	î	î. = í \check{n}	‘heavy’
/y/	áê	á. = é \check{n}	‘sour’
/y/	qùù	qù. = ì \check{n}	‘black’

Polysyllabic vowel-final adjectives attach the definite clitic = n with no underlying tone.

(30) **Definite clitic = n on polysyllabic vowel final singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/a/	mā $\check{d}\check{a}$	mā $\check{d}\check{a}$ = n	‘big’
/ə/	q̄ $\check{d}\check{e}m\check{e}$	q̄ $\check{d}\check{e}m\check{e}$ = n	‘blind’
/u/	lūsú	lūsú = n	‘hot’
/i/	wílí	wílí = n	‘reflective’

Consonant-final singular adjectives attach the definite clitic = \acute{A} .

(31) **Definite clitic = \acute{A} on consonant final singular adjectives**

Stem-final	ADJ SG	DEF ADJ SG	
/r/	kár	kár = á	‘loose’
/l/	dómōl	dómōl = ó	‘big’
/n/	ón	ón = ó	‘bad’

Consonant-final adjectives attach the definite clitic = \acute{A} with High tone and plural adjectives attach the definite clitic = \acute{A} with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9} and the Mid of stem-final HM tone

(32) **Definite clitic = \acute{A} on singular adjectives and = \grave{A} on plural adjectives**

Stem-final	ADJ SG	ADJ PL	DEF ADJ SG	DEF ADJ PL	
H	bér	bér-g	bér = á	bér-g = à	‘clean’
M	bánqāl	bánqāl-g	bánqāl = á	bánqāl-g = à	‘weak’
L	kóófār	kóófār-g	kóófār = ā	kóófār-g = à	‘thin’
H/HM	kāyáár	kāyáār-g	kāyáár = á	kāyáār-g = à	‘beautiful’

assimilates to clitic Low tone {M7}.

8.3.3 Relative clause definite clitic

Relative clause definite clitics attach to relative clause-final adjectives in agreement with the noun modified by the clause. In (33a), the singular clitic on $\acute{o}n = \acute{f}$ 'bad=RDM' is in agreement with the singular noun $k\bar{o}r$ 'word' and in (b), the plural clitic on $\bar{o}n-g = \grave{i}$ 'young-PL=RDM' is in agreement with the plural noun $j\bar{n}alg$ 'girls'.

- (33a) $k\bar{o}r \acute{a}$ $k\bar{o}r$ $n\acute{a}$ $\acute{o}n = \acute{f}$
 speaks 1sA word REL.SG bad = RDM
 'She speaks to me rudely (lit. word which is bad).' (Assa6)
- (b) $b\bar{a}arg = \acute{a}$ $\eta\acute{a}\acute{o} - \acute{a} \grave{n}$ $j\bar{n}alg$ $n\grave{a}$ $\bar{o}n-g = \grave{i}$
 Baggara = DEF search.for-CONT.P girls REL young-PL = RDM
 'The Baggara were kidnapping girls which were young.' (Minj2)

The relative clause definite clitics $= \acute{E} / = \acute{E}$ on singular and plural adjectives are the same as on nouns.

Table 25: Relative clause definite clitics on adjectives

Stem-final segment	RDM ADJ SG	RDM ADJ PL
(Monosyllabic) long vowel or underlying approximant	$= \acute{E}$	
(Polysyllabic) vowel	$= \acute{E}$	
Consonant	$= \acute{E}$	$= \grave{E}$

Monosyllabic long vowel and underlying approximant-final adjectives attach the relative clause definite clitic $= \acute{E}$ with High tone.

(34) Relative clause definite clitic $= \acute{E}$ on monosyllabic singular adjectives

Stem-final	ADJ SG	RDM ADJ SG	
/a/	yáá	yáá. = \acute{e}	'new'
/ə/	bóó	bóó. = \acute{e}	'acidic'
/u/	cúú	cúú. = \acute{e}	'sweet'
/ε/	céé	céé. = \acute{e}	'unavailable'
/i/	î	î. = \acute{e}	'heavy'
/y/	âè	â. = \acute{e}	'sour'
/y/	ḍù	ḍù. = \acute{e}	'black'

Polysyllabic vowel-final adjectives also attach the clitic $= \acute{E}$. In fast speech, the stem-final vowel can be elided such as in $l\bar{u}s = \acute{e}$ 'hot'.

(35) **Relative clause definite clitic =É̇ on polysyllabic vowel final singular adjectives**

Stem-final	ADJ SG	RDM ADJ SG	
/a/	mādā	mādā. = é̇	‘big’
/ə/	ḍəmḍ	ḍəmḍ. = í	‘blind’
/u/	lūsú	lūsú. = í	‘hot’
/i/	wílí	wílí. = í	‘reflective’

Consonant-final singular adjectives attach the relative clause definite clitic =É̇.

(36) **Relative clause definite clitic =É̇ on consonant final singular adjectives**

Stem-final	ADJ SG	RDM ADJ SG	
/r/	kár	kár = é̇	‘loose’
/l/	dómōl	dómōl = é̇	‘big’
/n/	ón	ón = í	‘bad’

Consonant-final adjectives attach the clitic =É̇ with High tone and plural adjectives attach the clitic =É̇ with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9} and the Mid of stem-final HM tone assimilates to clitic Low tone {M7}.

(37) **Relative clause definite clitic =É̇/=È̇ on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDM ADJ SG	RDM ADJ PL	
H	bér	bér-g	bér = é̇	bér-g = è̇	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = é̇	bánḍāl-g = è̇	‘weak’
L	kóófār	kóófār-g	kóófār = ē̇	kóófār-g = è̇	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = é̇	kāyáár-g = è̇	‘beautiful’

8.3.4 Dative and locative copular clitics

As in nouns, dative and locative copular clitics have the same morphology in adjectives and are both discussed in this section. The dative clitic attaches to noun phrase-final adjectives to indicate recipient or beneficiary roles.

- (38) bəsərəniiggə jōgg nālg = ān
 were.lying people young=DAT
 ‘They were lying to the young people.’

The singular locative copula *īn/ēēn* of (39a) is replaced by the clitic =An attached to the adjective in (b). The plural locative copula *ēggàn* of (c) is replaced by the same clitic in (d).

(39) **Locative copular clauses**

- (a) j̄āā bānḍāl **ḥīn** wéé bèŋŋ
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) j̄āā bānḍāl = **ān** wéé bèŋŋ
 person weak=LCM house beside
 ‘A weak person is beside a house.’
- (c) j̄ōgg bānḍāl-g **ēggān** wéé bèŋŋ
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (d) j̄ōgg bānḍāl-g = **ān** wéé bèŋŋ
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’

Polysyllabic vowel-final adjectives attach the dative and locative copular clitic = \bar{n} , and consonant-final singular and plural adjectives attach the clitic = $\bar{A}n$ with HM tone, the same as in nouns with these types of final segments.

Table 26: Dative and locative copular clitics on adjectives

Stem-final segment	DAT/LCM ADJ SG	DAT/LCM ADJ PL
(Polysyllabic) vowel	= \bar{n}	
Consonant	= $\bar{A}n$	= $\bar{A}n$

The dative and locative copula clitic = \bar{n} attaches to vowel-final adjectives and the clitic = $\bar{A}n$ attaches to consonant-final adjectives.

(40) **Dative and locative copular clitic on singular adjectives**

Stem-final	ADJ SG	DAT/LCM ADJ SG	
Vowel	ḍəmḍ	ḍəmḍ = n	‘blind’
Consonant	ḥāán	ḥāán = ān	‘young’

The clitic = $\bar{A}n$ attaches to both singular and plural adjectives. Clitic High tone lowers to Mid following stem-final Low tone {M9}.

(41) **Dative and locative copular clitic = $\bar{A}n$ on adjectives**

Stem-final	ADJ SG	ADJ PL	DAT/LCM ADJ SG	DAT/LCM ADJ PL	
H	bér	bér-g	bér = ān	bér-g = ān	‘clean’
M	bānḍāl	bānḍāl-g	bānḍāl = ān	bānḍāl-g = ān	‘weak’
L	kóḥfār	kóḥfār-g	kóḥfār = ān	kóḥfār-g = ān	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = ān	kāyáár-g = ān	‘beautiful’

8.3.5 Relative clause dative/locative copular clitics

The relative clause dative and locative copular clitics have the same morphology and are both discussed in this section. Dative relative clauses are always marked with the clitic =*ÉĒn*/=*ÈĒn* which agrees in number with the head noun of the relative clause.

(42a) á gáf jèèm jāā ná sèggār = **éĒn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong person.’

(b) á gáf jèèm jōgg nà sèggār-g = **èĒn**
 1sN give something person REL strong = RDTM
 ‘I give something to the strong people’

The relative clause clitic =*É* and locative copula *īn/éĒn* of (42a) is replaced by the singular clitic =*ÉĒn* in (b). The relative clause clitic =*È* and locative copula *ēggàn* of (c) is replaced by the plural clitic =*ÈĒn* in (d). Unlike locative copular clitics, relative clause copular clitics only attach to definite noun phrases and not phrases unmarked for definiteness; relative clauses unmarked for definiteness only use locative copulas *īn/éĒn* and *ēggàn*.

(43) Relative clause locative copular clauses

(a) jāā ná bāṅḍāl = **é** **īn** wéé bèṅṅ
 person REL weak=RDM LCM house beside
 ‘The weak person is beside a house.’

(b) jāā ná bāṅḍāl = **éĒn** wéé bèṅṅ
 person REL weak=RDM.LCM house beside
 ‘The weak person is beside a house.’

(c) jōgg nà bāṅḍāl-g = **è** **ēggàn** wéé bèṅṅ
 people REL weak-PL=RDM LCM house beside
 ‘The weak people are beside a house.’

(d) jōgg nà bāṅḍāl-g = **èĒn** wéé bèṅṅ
 people REL weak-PL=RDM.LCM house beside
 ‘The weak people are beside a house.’

Singular relative clauses with final adjectives attach the dative and locative copular clitic =*ÉĒn*, and plural relative clauses attach the clitic =*ÈĒn*.

Table 27: Relative clause dative/locative copular clitics on adjectives

Stem-final segment	RDTM/RLCM ADJ SG	RDTM/RLCM ADJ PL
(Polysyllabic) vowel	=ÉĒn	
Consonant	=ÉĒn	=ÈĒn

The relative clause dative and locative copular clitic =ÉĒn attaches to both vowel-final and consonant-final adjectives.

(44) **Relative clause dative/locative copular clitics =ÉĒn on singular adjectives**

Stem-final	ADJ SG	RDTM/RLCM ADJ SG	
Vowel	ɖəm̄	ɖəm̄. = íin	‘blind’
Consonant	ɲáán	ɲáán = éēn	‘young’

Singular adjectives attach the clitic =ÉĒn with HM tone and plural adjectives attach the clitic =ÈĒn with Low tone. Clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before clitic Low tone {M7}.

(45) **Relative clause dative/locative copular clitics =ÉĒn/=ÈĒn on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDTM/RLCM ADJ SG	RDTM/RLCM ADJ PL	
H	bér	bér-g	bér = éēn	bér-g = èèn	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = éēn	bánḍāl-g = èèn	‘weak’
L	kóófār	kóófār-g	kóófār = ēēn	kóófār-g = èèn	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éēn	kāyáár-g = èèn	‘beautiful’

8.3.6 Accompaniment clitic

Accompaniment clitics attach to noun phrase-final adjectives.

- (46) báárg = á áǎ́ n è jāā ná sèggār = é̄
 Baggara = DEF coming with person REL strong = ACM
 ‘The Baggara were coming with a strong person.’

Polysyllabic vowel-final adjectives attach the accompaniment clitic =nĒ with Mid tone, and consonant-final singular and plural adjectives attach the clitic =É with HM tone, the same as in nouns with these types of final segments.

Table 28: Accompaniment clitics on adjectives

Stem-final segment	ACM ADJ SG	ACM ADJ PL
(Polysyllabic) vowel	=nĒ	
Consonant	=É	=É

The accompaniment clitic = $n\bar{E}$ attaches to vowel-final adjectives and the clitic = \bar{E} attaches to consonant-final adjectives.

(47) **Accompaniment clitics on singular adjectives**

Stem-final	ADJ SG	ACM ADJ SG	
Vowel	ɖəm̄	ɖəm̄ = n̄ē	‘blind’
Consonant	ɲāán	ɲāán = ē̄	‘young’

The clitic = \bar{E} attaches to both singular and plural adjectives. Clitic High tone lowers to Mid following stem-final Low tone {M9}.

(48) **Accompaniment clitic = \bar{E} on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	ACM ADJ SG	ACM ADJ PL	
H	bér	bér-g	bér = ē̄	bér-g = ē̄	‘clean’
M	bánḍāl	bánḍāl-g	bánḍāl = ē̄	bánḍāl-g = ē̄	‘weak’
L	kóófār	kóófār-g	kóófār = ē̄	kóófār-g = ē̄	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = ē̄	kāyáár-g = ē̄	‘beautiful’

8.3.7 Relative clause definite and accompaniment clitics

Accompaniment relative clauses can be marked or unmarked for definiteness. When unmarked, the accompaniment clitic attaches relative clause-finally, as in (49).

When marked, the accompaniment clitic attaches after the relative clause definite clitic, as in (50). The relative clause definite and accompaniment clitics = $\acute{E}\acute{E} = n\bar{E}$ / = $\grave{E}\grave{E} = n\bar{E}$ agree in number with the head noun of the relative clause.

- (49) bāárg = á áḏá`n è jāā ná sèggār = \bar{E}
 Baggara = DEF coming with person REL strong = ACM
 ‘The Baggara were coming with a strong person.’

- (50) bāárg = á áḏá`n è jāā ná sèggār = $\acute{E}\acute{E} = n\bar{E}$
 Baggara = DEF coming with person REL strong = RDM = ACM
 ‘The Baggara were coming with the strong person.’

Singular adjectives attach the relative clause definite and accompaniment clitic = $\acute{E}\acute{E} = n\bar{E}$, and plural adjectives attach the clitic = $\grave{E}\grave{E} = n\bar{E}$.

Table 29: Relative clause definite and accompaniment clitics on adjectives

Stem-final segment	RDM=ACM ADJ SG	RDM=ACM ADJ PL
(Polysyllabic) vowel	= $\acute{E}\acute{E} = n\bar{E}$	
Consonant	= $\acute{E}\acute{E} = n\bar{E}$	= $\grave{E}\grave{E} = n\bar{E}$

The relative clause definite and accompaniment clitic = $\acute{E}\acute{E} = n\bar{E}$ attaches to both vowel-final and consonant-final adjectives.

(51) **Relative clause definite and accompaniment =ÉÉ=nĒ**
on singular adjectives

Stem-final	ADJ SG	RDM=ACM ADJ SG	
Vowel	ɖəm̩	ɖəm̩. = íí = nī	‘blind’
Consonant	ɲāán	ɲāán = éé = nē	‘young’

Singular adjectives attach the clitic =ÉÉ=nĒ with H=M tone and plural adjectives attach the clitic =ÈÈ=nĒ with Low=Mid tone. Relative clause clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before relative clause clitic Low tone {M7}.

(52) **Relative clause definite and accompaniment =ÉÉ=nĒ / =ÈÈ=nĒ**
on singular and plural adjectives

Stem-final	ADJ SG	ADJ PL	RDM=ACM ADJ SG	RDM=ACM ADJ PL	
H	bér	bér-g	bér = éé = nē	bér-g = èè = nē	‘clean’
M	báŋdāl	báŋdāl-g	báŋdāl = éé = nē	báŋdāl-g = èè = nē	‘weak’
L	kóófār	kóófār-g	kóófār = ēē = nē	kóófār-g = èè = nē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éé = nē	kāyáár-g = èè = nē	‘beautiful’

8.3.8 Subordinate clause-final clitic

The clitic =É attaches clause-final adjectives of subordinate clauses such as with the conjunction é gārā ‘when’.

- (53) é gārā bə̀rd̩ = ə t̩úr-s = ɿ jāā ná sèggār = é
 GP when lion = DEF see-COMP = SBO1 person REL strong = SBO
 ‘When the lion saw a strong person, . . .’

The subordinate clause clitic =É attaches to singular and plural adjectives with stem-final consonants and the clitic =nĒ attaches to stem-final vowels, the same as in nouns with these types of final segments.

Table 30: Subordinate clause clitic

Stem-final segment	SBO ADJ SG	SBO ADJ PL
Vowel	= nĒ	
Consonant	= É	= É

Monosyllabic long vowel and underlying approximant-final adjectives attach the subordinate clause clitic =nĒ. Occasionally, the clitic can be attached without *n* as in *ŋ̩. = ɿ* ‘heavy = SBO’.

(54) **Subordinate clause clitic =*nÉ* on monosyllabic singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/a/	yáá	yáá = né	'new'
/ə/	bóó	bóó = ní	'acidic'
/u/	cúú	cúú = ní	'sweet'
/ɛ/	céé	céé = né	'unavailable'
/i/	îî	îî = nî	'heavy'
/y/	âê	âê = nê	'sour'
/y/	ḍùì	ḍùì = nî	'black'

Polysyllabic vowel-final adjectives also attach the subordinate clitic =*nÉ*, and Occasionally the clitic can be attached without *n* as in *lūsú. = í* 'hot = SBO'.

(55) **Subordinate clause clitic =*nÉ* on polysyllabic vowel-final singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/a/	mādā	mādā = né	mādā = é 'big'
/ə/	ḍəmḍ	ḍəmḍ = ní	ḍəmḍ = í 'blind'
/u/	lūsú	lūsú = ní	lūsú = í 'hot'
/i/	wílí	wílí = ní	wílí = í 'reflective'

Consonant-final singular adjectives attach the subordinate clitic =*É*.

(56) **Subordinate clause clitic =*É* on consonant-final singular adjectives**

Stem-final	ADJ SG	SBO ADJ SG	
/r/	kár	kár = é	'loose'
/l/	dómḍl	dómḍl = é	'big'
/n/	ón	ón = í	'bad'

Consonant-final singular and plural adjectives attach the subordinate clause clitic =*É* with High tone which lowers to Mid following stem-final Low tone {M9}.

(57) **Subordinate clause clitic =*É* on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	SBO ADJ SG	SBO ADJ PL	
H	bér	bér-g	bér = é	bér-g = é	'clean'
M	báḍḍāl	báḍḍāl-g	báḍḍāl = é	báḍḍāl-g = é	'weak'
L	kóófār	kóófār-g	kóófār = ē	kóófār-g = ē	'thin'
H/HM	kāyáár	kāyáár-g	kāyáár = é	kāyáár-g = é	'beautiful'

8.3.9 Relative clause definite and subordinate clause clitics

Relative clauses in subordinate clauses can be marked or unmarked for definiteness. When unmarked, the subordinate clitic attaches relative clause-final, as in (a). When

marked, the subordinate clitic attaches after the relative clause definite clitic, as in (b). The relative clause definite and subordinate clitic =ÉÉ=nÉ/=ÈÈ=nĒ agrees in number with the head of the relative clause.

- (58a) é gārā bərdə́ túr-s=ɿ jāā ná sèggār = é
 GP when lion.DEF see-COMP = SBO1 boy REL strong = SBO
 ‘When the lion saw a strong person, . . .’
- (b) é gārā bərdə́ túr-s=ɿ jāā ná sèggār = **éé = né**
 GP when lion.DEF see-COMP = SBO1 boy REL strong = RDM = SBO
 ‘When the lion saw the strong person, . . .’

Singular adjectives attach the relative clause definite and subordinate clitic =ÉÉ=nÉ, and plural adjectives attach the clitic =ÈÈ=nĒ.

Table 31: Relative clause definite and subordinate clause clitics on adjectives

Stem-final segment	RDM=SBO ADJ SG	RDM=SBO ADJ PL
(Polysyllabic) vowel	=ÉÉ=nÉ	
Consonant	=ÉÉ=nÉ	=ÈÈ=nĒ

The relative clause definite and subordinate clitic =ÉÉ=nÉ attaches to both vowel-final and consonant-final adjectives.

(59) **Relative clause definite and subordinate clitic =ÉÉ=nÉ on singular adjectives**

Stem-final	ADJ SG	RDM=SBO ADJ SG	
Vowel	ḍə́mḍ	ḍə́mḍ. = íí = ní	‘blind’
Consonant	nā́án	nā́án = éé = né	‘young’

Singular adjectives attach the clitic =ÉÉ=nÉ with H tone and plural adjectives attach the clitic =ÈÈ=nĒ with Low=Mid tone, where the subordinate clitic =nĒ High tone lowers to Mid following relative clause clitic =ÈÈ Low tone {M9}. Relative clause clitic High tone lowers to Mid following stem-final Low tone {M9}. Stem-final HM tone becomes HL tone before relative clause clitic Low tone {M7}.

(60) **Relative clause definite and subordinate clitics =ÉÉ=nÉ/=ÈÈ=nĒ on singular and plural adjectives**

Stem-final	ADJ SG	ADJ PL	RDM=SBO ADJ SG	RDM=SBO ADJ PL	
H	bér	bér-g	bér = éé = né	bér-g = èè = nē	‘clean’
M	báḍḍāl	báḍḍāl-g	báḍḍāl = éé = né	báḍḍāl-g = èè = nē	‘weak’
L	kóófār	kóófār-g	kóófār = ēē = né	kóófār-g = èè = nē	‘thin’
H/HM	kāyáár	kāyáár-g	kāyáár = éé = né	kāyáár-g = èè = nē	‘beautiful’

9 Verb stem morphology

9.1 Introduction

The verb word structure can be ordered according to the schemes of (1). The verb root tends to be monosyllabic, with optional onset and coda. The verb stem is composed of the root, and optional slots for antipassive (ANTIP), causative (CAUS), and modal or aspect morphemes. The verb word is made up of the stem and optional slots for agented passive (PAS.A), passive (PAS) or bound pronoun, and imperfect (IPF), perfect (PF), subordinate (SBO1,2), or relative clause definite marker clitics (RDM).

- (1) Verb root = (C)V(C)(C)
 Verb stem = [Verb root] + (ANTIP) + (CAUS) +
 ({INF, SBJV, IMP, COMP, INCP, CONT, IMP.D, COMP.D, CONT.D})
 Verb word = [Verb stem] + ({PAS.A, PAS, PRON}) + ({IPF, PF, SBO, RDM})

The verb word is further represented in table 32 by the order and options of each position or ‘slot’, where each item in the column is an example option. The morphemes are briefly explained following the table, after which, a few examples are given in (3).

Table 32: Verb word bound morphemes and ordering

Verb stem				Outside verb stem	
root	ANTIP	CAUS	Modality/ Aspect	PAS.A, PAS, PRON	IPF, PF SBO, RDM
[V]	-An _{ANTIP}	-s ⁺ A _{CAUS} -q ⁺ A _{CAUS}	-C _{INF} -Ø, -C(A) _{SBJV} -q _{SBJV.PL} -Ø, -n _{IMP} -q ⁺ A _{IMP.PL} -sA _{COMP} -Ø _{INCP} -Ān _{CONT.P} -Ān _{CONT.N} -CĀggĀ _{COMP.D} -(CAg)gĀn _{CONT.N.D} -(CĀg)gĀ _{IMP.D} -qūū _{IMP.PL.D} -CĀr _{PF}	=Ē, =ÉĒ _{PAS.A} =ĀnĀ, =Ā _{PAS} =E _{3sA} =aaggá _{1pA} =ĭn _{3sD} =āggān _{1pD}	=É _{IPF} =Ē(ggĀ) _{IPF} =í _{IPF} =ĭn(ggā) _{IPF} =Ē _{SBO1} =ĭ _{SBO1} =Ē _{SBO2} =ū _{SBO2} =É _{RDM} =Ē _{RDM} =Ār _{PF} =r _{PF} =gg _{VN.PL} =Agg _{VN.PL}

When a verb is marked as having no object, it attaches the antipassive suffix *-An*, which precedes any other morphemes (9.10). Causative suffixes *-s⁺A*, *-q⁺A* have [+ATR] quality which spreads in both directions in the verb word (9.11).

Third singular and first, second, and third plural subjunctive (SBJV) forms are distinguished from first and second person singular forms by the suffix *-dA* (9.3). Imperatives (IMP, IMP.PL) addressed to more than one person are distinguished from imperatives addressed to one person by the suffix *-d^rA* (9.4).

Aspect is marked segmentally in the verb word—by the completive (COMP) suffix *-sA* in (2a) and the continuous suffixes *-Ān/-Ān* in (b-c). Past tense is marked by tone on the verb stem—High tone on the non-past continuous (CONT.N) suffix *-Ān* in (b) and MH on the past continuous (CONT.P) suffix *-Ān* in (c). Future tense is marked by tone outside the verb word on the subject pronoun—High tone on the non-future subject pronoun *á* in (d) and HM on the future subject pronoun *â* in (e).

(2) **Clauses showing aspect and tense**

- | | | | | | |
|-----|----------|------|--------|---------|---------------------------------|
| (a) | COMP | á | ḍùr-sù | kólóḍ=ó | ‘I buried the egg.’ |
| (b) | CONT.N | á, â | ḍùr-ḍn | kólóḍ=ó | ‘I am/will be burying the egg.’ |
| (c) | CONT.P | á, â | ḍùr-ḍn | kólóḍ=ó | ‘I was burying the egg.’ |
| (d) | INCP | á | ḍùr | kólóḍ=ó | ‘I bury the egg.’ |
| (e) | INCP FUT | â | ḍùr | kólóḍ=ó | ‘I will bury the egg.’ |

Aspect is divided into completive and incomplete action. As mentioned, completive verbs are marked by a morpheme (9.5). There is no incomplete (INCP) morpheme, but in the absence of all aspect or mood morphemes, ‘incomplete’ is the interpretation of the verb form (9.6). The incomplete can be specified as continuous, thereby taking a past or non-past suffix (9.7). Deictic (D) suffixes such as *-CĀggĀ*, *-(CĀg)gĀn*, *-(CĀg)gĀ*, *-ḍúū* indicating direction and distance also attach to the root (9.9).

Agented passive (PAS.A) clitics *=Ē*, *=ĒĒ*, often used in clauses with object focus to indicate a post-verbal encoding of an agent (or experiencer), agree in number with the agent (10.2). The passive (PAS) clitic *=ĀnĀ* attaches to stems with vowel-final suffixes whereas *=Ā* attaches to stems with consonant-final suffixes and suffix-less stems (10.3). Object pronoun (ACC) (10.4), dative pronoun (DAT) (10.5), imperfect (IPF) (10.6), and verb-final subordinate (SBO1,2) (10.7) clitics indicate person and number. The relative clause definite marker (RDM) agrees in number with the nominative person form (10.9). A perfect (PF) bound morpheme *-CĀr*, *=Ār*, *=r* can attach to nouns or verbs and can have various allomorphs for various verb forms. Although the morpheme *-CĀr* on imperative and incomplete verbs is analyzed as a suffix and part of the stem, it is discussed along with the other perfect bound morphemes in (10.8), which are clitics and outside the stem. Verbal noun (VN) plural clitics *=gg*, *=Agg* attach to incomplete surface forms to nominalize the verb (10.10). Adjectives used as verbs and suffixing verb inflectional suffixes are also discussed (10.11).

In addition, there is evidence for a middle (MID) verb form which, in at least a

handful of verbs, is distinguished by [+ATR] vowels and tone change on the root. However, since only a limited amount of data was collected on this form, the middle is not presented in the verb morphology, but only in 14.5.2 on transitive verbs.

In (3), example verb forms are given with formulations with each of the five morpheme slots. The symbol \emptyset indicates that the slot is not filled by any morpheme.

(3) **Example verb forms and formulation**

Verb form	Formulation
INCP 3sN	$[V]_{\text{Root}} + \emptyset + \emptyset + \emptyset + \emptyset + \emptyset$ kóm 'destroy, chop'
ANTIP CAUS SBJV 2pN	$[V]_{\text{Root}} + \text{An}_{\text{ANTIP}} + \text{d}^+ \text{A}_{\text{CAUS}} + \text{d} \text{A}_{\text{SBJV}} + \emptyset + \emptyset$ kúm-ūn-d-ǎn 'to cause to destroy something'
ANTIP COMP PAS	$[V]_{\text{Root}} + \text{An}_{\text{ANTIP}} + \emptyset + \text{sA}_{\text{COMP}} + \bar{\text{An}} \bar{\text{A}}_{\text{PAS}} + \emptyset$ kóm-ǎn-s = ānā 'something was destroyed'
COMP 3sN/2pA	$[V]_{\text{Root}} + \emptyset + \emptyset + \text{sA}_{\text{COMP}} + \emptyset + \text{ǎggǎ}_{2\text{pA}} + \emptyset$ kóm-s = ǎggǎ 'he destroyed you'
COMP 3sN/2pA RDM	$[V]_{\text{Root}} + \emptyset + \emptyset + \text{sA}_{\text{COMP}} + \emptyset + \text{ǎggǎ}_{2\text{pA}} + \acute{\text{E}}_{\text{RDM}}$ kóm-d = ǎgg = é 'he who destroyed you'

Verb stem morphology (suffixes) is discussed in this chapter and verb word morphology (clitics) is discussed in the next. The majority of verb suffixes are inflectional morphemes, the exceptions being the antipassive and causative suffixes. The majority of verb clitics are derivational or clausal morphemes, the exceptions being the imperfect, and perfect clitics. Whereas some inflectional suffixes cannot combine with other inflectional suffixes (*COMP-CONT), nearly all clitics can combine with all inflectional suffixes.

As in nouns, a primary distinction between roots and stems in verbs is whether the bound morpheme attaches to underlying-final segments or to surface-final segments. Suffixes attaching to verb roots attach to underlying root-final segments, whereas clitics attaching to verb stems attach to surface-final segments.

In (4a), the past continuous suffix $-\acute{\text{An}}$ attaches to the underlying short vowel in $p\bar{\text{a}}-\acute{\text{an}}$ 'guard.3sN-CONT.P', whereas the third singular object clitic $=\acute{\text{E}}$ attaches to the surface long vowel of the incompletive form ($p\bar{\text{a}}\bar{\text{a}} = \acute{\text{e}}$). In (4b-f), the object clitic attaches to the surface vowels of the incompletive forms rather than to the underlying plosives or approximants. However, in (b-c, e-f), the root-final segment can optionally surface as an approximant, just as when copular and definite clitics are attached to underlying approximant-final stems shown in (5) of 7.2.1 ($k\acute{\text{a}}\acute{\text{ɔ}}/k\acute{\text{a}}.\acute{\text{ɔ}} = n$, $k\acute{\text{a}}.w = \acute{\text{a}}n$ 'hyena=COP'; $\acute{\text{f}}\acute{\text{a}}\acute{\text{e}}/\acute{\text{f}}\acute{\text{a}}.\acute{\text{e}} = n$, $\acute{\text{f}}\acute{\text{a}}.y = \acute{\text{a}}n$ 'giraffe=COP'). The verb of (g) with root-final consonant is given for comparison.

(4) **Roots and stems compared**

	Underlying root UR	Surface root INF	Surface root-final INCP. 3sN	Verb stem suffix INCP.3sN -CONT.P	Verb word suffix INCP.3sN =3sA	
(a)	/pa/ M	pā-ḍ [pāḍ _o ˦]	pāā	pā.-án	pāā. = ē	‘guard’
(b)	/ab/ L	àb-b [àb˦]	àō	àw.-án	àð. = ē, àw = ē	‘sit’
(c)	/kaʃ/ H	káʃ-ʃ [káʃ _o ˦]	káé	káy.-án	káé. = ē, káy = ē	‘bring’
(d)	/cig/ M	cīg-g [cīg _o ˦]	cīi	cī.-ón	cīi. = ɪ	‘wear’
(e)	/naw/ H	náw-w [náv˦]	náó	náv.-án	náó. = ē, náv = ē	‘request’
(f)	/koy/ H	kóy-y [kóy˦]	kóé	kóy.-án	kóé. = ē, kóy = ē	‘cook’
(g)	/nam/ M	nām-m [nām˦]	nām	nām.-án	nām = ē	‘break’

Although no verb form is the same as the root for every verb, the infinitive form is the best representation of the root because it includes all underlying segments and tone. Most commonly, the infinitive form does not contain additional segments or tone other than the copied final consonant. There are seven attested tone melodies in verbs, although there are only two attested verbs with the melodies HM and ML (*bél* ‘name, call’, *léé* ‘come, arrive’; *dōs* ‘stand’, *būnd* ‘make big’).

(5) **Tonal contrasts in infinitive verb forms (see 9.2)**

	Root tone	INF	
(a)	H	fír-r	‘smell, pray’
(b)	M	cōr-r	‘help’
(c)	L	ḍūr-r	‘bury’
(d)	HL	pôr-r	‘attach’
(e)	HM (rare)	bél-l	‘name, call’
(f)	ML (rare)	dōs-s	‘stand’
(g)	MH	kōð-ð	‘strike, ram’

Finite verb forms are inflected for subject person by tone added to the stem-final syllable. Regardless of the root tone, High tone is assigned to the stem-final syllable of third singular verbs; Low tone is assigned to the stem-final syllable of third plural verbs; and Mid tone is assigned to the stem-final syllable of first and second person forms. The fact that first and second person share the same tone might be seen as marking their shared property of being participants of the speech event.

(6) **Paradigm of completive verb *kóm-sA* ‘chop-COMP’ with subject pronouns (see 9.5)**

á	kóm-s̄	1s	āgg	kóm-s̄	1p
ó, ú	= kúm-sū	2s	ōgg, ūg =	kúm-sū	2p
ē	kóm-só	3s	ēggà	kóm-sò	3p

Root tone replacement is used for antipassives, causatives, and verbal nouns. In antipassive forms, root tone melodies are replaced by other tone melodies: High changes to HM, Mid changes to MH, and Low changes to LH.

(7) **Antipassive suffix *-An* on third singular completive verbs (see 9.10.2)**

Root	3sN	ANTIP	3SN	
tone	COMP	tone	ANTIP COMP	
H	fír-só	HM	fír-ān-só	‘smell’
M	cōr-só	MH	cōr-ōn-só	‘help’
L	ḍùr-sū	LH	ḍùr-ūn-sú	‘bury’

In causative forms, root tone melodies are also replaced by other tone melodies, as shown in (8).

(8) **Third singular causative completive verbs (see 9.11.2)**

Root	3SN	CAUS	3SN	
tone	COMP	tone	CAUS COMP	
H	fír-só	HM	fír-só	‘smell’
M	cōr-só	HM	cūr-sú	‘help’
L	ḍùr-sū	ML	ḍùr-sū	‘bury’
MH	kōs-só	HM	kōs-só	‘strike’

Finally, in verbal nouns, root tone melodies are replaced by other tone melodies, as shown in (9).

(9) **Verbal noun plural suffixes *-Agg, =gg* (see 10.10)**

Root	INF	VN	VN SG	VN PL	
tone		tone			
H	pál-l	M	pāl	pāl-āgg, pāl = g	‘cut’
L	f èl-l	ML	f èl	f èl-āgg, f èl = g	‘tell’
HL	pír-r	ML	pír	pír-āgg, pír = g	‘deceive’
HM	bèl-l	M	bèl	bèl-āgg	‘name’
MH	kōḍ-ḍ	M	kōn	kōḍ-āgg	‘strike’

As in nouns, the starting point for verb stem tone assignment is the root tone, whereas the starting point of verb word tone assignment is the stem tone. The rules {M1-11} are applied to all verb suffixes. However, one or more of these rules, the tone rules {M5-11} in particular, are not applied in some of the verb clitics.

The chart of (10) summarizes the criteria for determining which verb bound morphemes are suffixes and thus a part of the stem, and which verb bound morphemes are clitics and thus outside of the stem, but part of the word. The perfect =*r* and relative clause definite clitics are attested to attach to more than one word category, as shown in chapter 4. All clitics with the exception of the verbal noun clitics can attach to all inflectional suffixes. Many of the clitics are attested to attach to the surface-final segments of stems as will be verified in the various sections of chapter 10³². Finally, one or more rules {M1-11} are not applied to some of the verb clitics, as will be summarized in 10.1 and later shown in the various sections. Although the four criteria are not all valid for any one clitic, none of these criteria are valid for any of the suffixes. Thus, they each individually lend support of the clitics being a different kind of morpheme than the suffixes.

(10) **Criteria for determining verb clitics (stem morphemes) vs. suffixes (root morphemes)**

		Attaches to more than one word category	Attaches to inflectional morphemes	Attaches to surface-final segments	Certain tone rules are not applied	Analyzed as a clitic (word morpheme)
9.3	SBJV	no	no	no	no	no
9.4	IMP	no	no	no	no	no
9.5	COMP	no	no	no	no	no
9.7	CONT	no	no	no	no	no
9.9	D	no	no	no	no	no
9.10	ANTIP	no	no	no	no	no
9.11	CAUS	no	no	no	no	no
10.8	PF <i>-Car</i>	no	no	no	no	no
10.2	PAS.A	no	yes	yes	yes	yes
10.3	PAS	no	yes	yes	yes	yes
10.4	Object PRON	no	yes	yes	yes	yes
10.5	Dative PRON	no	yes	yes	yes	yes
10.6	IPF	no	yes	unknown	yes	yes
10.7	SBO1, SBO2	no	yes	unknown	yes	yes
10.8	PF = <i>Ar</i> , = <i>r</i>	yes	yes	unknown	unkwn.	yes
10.9	RDM	yes	yes	yes	unkwn.	yes
10.10	VN PL	no	no	yes	unkwn.	yes

³² With further data, several other clitics in (10) may be attested to attach to surface-final segments.

Verb stem segmental morphology of the basic verb forms is presented in sections 9.2 through 9.7, followed by tonal morphology of these morphemes in 9.8. Afterwards, tone morphology follows segmental morphology for each morpheme. In stating the function of verb forms, genres in which the verb form frequently occurs are sometimes mentioned, although genre does not dictate which verb form is used.

9.2 Infinitive

Infinitives are the most common form used in foregrounded nuclear clauses of narratives, i.e. sequences of events. As such, they often encode actions that can be translated into English as past tense, such as in (11). Infinitives commonly occur following the infinitive verb *dʒʒs* ‘start’ as in (11a), but can follow various other verb forms and can be the first verb of a clause or sentence.

(11a) ānēndá ē **dʒʒs-s** ē **bàg-g** áŋé = n
 then 3pN start-INF 3pN grab-INF elephant = DEF
 ‘Then they started to grab an elephant.’ (Nyee8)

(b) mīi = n ē **gùŋ-ŋ** lŋh āld = á ē **wāj-j** tū
 goat = DEF 3sN agree-INF then fox = DEF 3sN go-INF out
 ‘The goat agreed and then the fox got out.’ (Goat16-17)

As such, infinitives are used in finite sentences. As discussed in 9.3, subjunctive verbs are commonly used in typical non-finite contexts such as ‘want to X’.

Infinitive forms differ from finite forms in that they do not change with subject person, either in tone or [ATR] quality. Also, the subject pronouns preceding an infinitive verb differ from those of other verb forms. Singular pronouns of such verbs all have Mid tone and plural pronouns have Low tone. Also, second person pronouns are not clitics prefixed to the infinitive verbs, evidenced by the fact that they do not take the [ATR] quality of the verb. Because of these differences with other verb forms which change according to the subject person, this form which does not change with the subject is analyzed as the infinitive.

(12) Infinitive paradigms

(a) ‘fall’		(b) ‘bury’	
ā	wál-l 1sN	ā	ɖùr-r 1sN
ō	wál-l 2sN	ō	ɖùr-r 2sN
ē	wál-l 3sN	ē	ɖùr-r 3sN
à(gg)	wál-l 1pN	à(gg)	ɖùr-r 1pN
ò(gg)	wál-l 2pN	ò(gg)	ɖùr-r 2pN
è(gg)	wál-l 3pN	è(gg)	ɖùr-r 3pN
PRON	fall.INF	PRON	bury.INF

- (b) \bar{e} wár kòlèèèð \bar{a} kóm-ḍó jṵg = ó = r
 3sN took.INCP (sword) SBJV cut-SBJV.3sN people = DEF = EV
 ‘... taking a koleez sword to kill (hack up completely) the people.’
 (Fand5)
- (c) mīī = n á gàf-àn jṵgg fāṅ = ān \bar{a} nóm-ḍ = ṅggè
 goat = 1sN give- people old = SBJV /nām/eat.3pN-
 DEF CONT.N DAT SBJV = IPF
 ‘... (but) the goat I am giving to the old men to eat.’ (Jooj12)

Regardless of what grammatical verb form the subjunctive follows, it has the same segmental form. In (a) it follows a verb, in (b) an incompletive verb, and in (c) a continuous form.

Subjunctive verbs add the suffix *-ḍA* to the root, except in first and second singular person forms, where other suffixes can sometimes be added depending on the root-final segments. A subject pronoun with Mid tone introduces the subjunctive verb. Plural pronouns before such verbs do not have the plural marker *-gg*, and second person pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel. The subjunctive particle \bar{a} is an optional alternative for introducing third person subjunctive verbs, as shown in (14b,c).

(15) **Subjunctive paradigms**

(a) ‘to run’	(b) ‘to cut’
\bar{a} gál-(à) 1sN	\bar{a} rùm-(ù) 1sN
\bar{o} , \bar{u} = gəl-(è) 2sN	\bar{o} , \bar{u} = rùm-(ù) 2sN
\bar{e} , \bar{a} gál-ḍā 3sN	\bar{e} , \bar{a} rùm-ḍū 3sN
\bar{a} gál-ḍà 1pN	\bar{a} rùm-ḍù 1pN
\bar{o} , \bar{u} = gəl-ḍè 2pN	\bar{o} , \bar{u} = rùm-ḍù 2pN
\bar{e} , \bar{a} gāl-ḍà 3pN	\bar{e} , \bar{a} rūm-ḍù 3pN
PRON run-	PRON cut-
SBJV	SBJV

First and second singular subjunctive verbs most commonly have the same segments as the root, but may take predictable suffixes according to the root-final segment, as shown in table 34, where segments in parentheses are optional. Other subjunctive forms take the suffix *-ḍA*, where A is a back vowel taking the [ATR] and [round]

Table 34: Subjunctive suffixes

	SBJV 1sN, 2sN	SBJV 3sN, 1pN, 2pN, 3pN
Root-final <i>b, f, g</i>	-C(A)	-ḍA
Root-final <i>w, y</i>	-(n)(A)	-ḍA
Root-final vowel	-ḍ(A)	-ḍA
Other root-final segments	-(A)	-ḍA

features of the root.

In (16), first and third singular subjunctive forms with each of the root-final consonants are given. As in (i-k), first singular subjunctive verbs with root-final *b*, *ʃ*, *g* attach the suffix *-CA* where *C* has the same features as the root-final consonant. As in (f-g), first singular forms with root-final approximants *w* and *y* attach the suffix *-(n)(A)* and the underlying approximant surfaces as a vowel, as will be explained shortly. The suffix-initial *-n* is sometimes elided, and when this happens, the approximant remains a vowel. As in (o), first singular subjunctives with root-final vowel add the same suffix as in third singular subjunctives *-d(A)*, except that the vowel is optional, or add the suffix *-n(a)* as in (p). First singular subjunctives with other root-final segments optionally attach the suffix *-(A)*.

(16) **Subjunctive verb forms with various root-final segments**

	Root	SBJV 1sN	SBJV 3sN	
(a)	/cuḍ/ M	cūḍ, cúḍ-ū	cúḍ-ḍú [cúḍú]	‘climb’
(b)	/las/ M	lās, lás-ā	lād-ḍá [láḍá]	‘roll-up’
(c)	/gɔn/ L	gɔn, gɔn-ɔ	gɔḍ-ḍɔ [gɔḍɔ]	‘grab’
(d)	/fɛð/ H	fɛð, fɛð-ā	fɛḍ-ḍá [fɛḍá]	‘release’
			fɛð-ḍá [fɛðá]	‘release’
(e)	/wɛr/ M	wɛr, wɛr-ā	wɛr-rá [wɛr:á], wɛr-ḍá	‘watch’
(f)	/ɲaw/ H	ɲáɔ-n(ɔ), ɲáɔ.-ɔ	ɲáw-wá [ɲáwá], ɲáɔ-ḍɔ	‘request’
(g)	/kɔy/ H	kɔɛ-n(ɔ), kɔɛ.-ɔ	kɔɛ.-é, kɔɛ-ḍɔ	‘cook’
(h)	/ab/ L	àb-b, àb-bà [àbà]	àḍ-ḍɔ	‘sit’
(i)	/kaʃ/ H	káʃ-ʃ, káʃ-ʃā [káʃā]	káɛ-ḍá	‘bring’
(j)	/cig/ M	cíg-g, cíg-gɔ [cígɔ]	cíg-ḍɔ	‘wear’
(k)	/lɔf/ L	lɔf, lɔf-ɔ	lɔf-ḍɔ	‘do magic’
(l)	/ɲam/ M	ɲám, ɲám-ā	ɲám-ḍá	‘break’
(m)	/guɲ/ L	gùɲ, gùɲ-ù	gùɲ-ḍū	‘agree’
(n)	/mal/ M	mál, mál-ā	mál-ḍá	‘gather’
(o)	/pa/ M	pā-ḍ, pá-ḍā	pá-ḍá	‘guard’
(p)	/bɛɛ/ L	bèè-n, bèè-nà	bèè-ḍā, bèè-ā	‘say’

Third singular subjunctives have various alternations which are only attested in verb morphology. Those of (16a-d) undergo a coronal assimilation process. The root-final coronal consonants *ɟ*, *s*, *n*, *ð* take on all the features of the suffix-initial coronal *ɟ*. In 9.5, it will be seen how the same root-final segments assimilate to the initial *s* of the completive suffix *-sA*.

The third singular subjunctive forms of (16d-f) also undergo an assimilation process. The suffix-initial dental plosive assimilates to *ð*, *r*, and *w*. There are two forms for plural subjunctives with root-final *ð* as in (d): the root-final consonant either assimilates to the suffix consonant as in *fɛḍ-ḍā* ‘release’, or the suffix consonant assimilates to the root-final consonant as in *fɛð-ḍā* ‘release’. In (g), the suffix-

initial plosive may also assimilate to the underlying approximant *y* (kóy.-yá) which weakens to the vowel *ε* after the suffix vowel *a* is elided (kóé.-é). This assimilation process to the root-final *ð*, *r*, and *w* does not always apply for every word with every speaker, but varies from word to word and from speaker to speaker.

Rule {P1b} in section 2.1.3 states that /b/, /ʃ/, /w/, /y/ are weakened word-finally to vowels with the same [ATR] quality as the preceding vowel. The same weakening process occurs syllable-finally before a consonant-initial suffix, provided that the underlying root-final consonant is not the same as the suffix-initial consonant. In the third singular subjunctive forms of (f-i), *b* becomes *ɔ* (*àð-ðð* ‘sit’), *ʃ* becomes *ε* (*káé-ðā* ‘bring’), *w* becomes *ɔ* (*ɲáð-ðð* ‘request’), and *y* becomes *ε* (*kóé-ðð* ‘cook’) before the consonant-initial suffix *-ðA*. The [+round] feature spread to the suffix vowel as in *ɲáð-ðð* ‘request’ is further support of the root-final segment weakening to a vowel. Similarly, in the first singular forms of (f-g), *w* becomes *ɔ* (*ɲáð-nð* ‘request’), and *y* becomes *ε* (*kóé-nð* ‘cook’) before the consonant-initial suffix *-n(A)*. However, *b,ʃ* do not become *ɔ,ε* in the first singular forms *àb-bà* ‘sit’, *káʃ-ʃā* ‘bring’ of (h-i), and *w* does not become *ɔ* in the third singular form *ɲáw-wā* ‘request’ of (f), since the suffix-initial consonant has become the same as the underlying root-final consonant.

9.4 Imperative

The singular imperative is used for commanding one person as shown in (17a-b), whereas the imperative plural is used for commanding more than one person as shown in the second imperative of (c). Imperative forms may occur with a second person subject pronoun as in (b) or without as in (a, c).

(17) Imperative examples

- (a) haʃim, **kɔr-ð** kɔr-ēēgg cúgg
 Hashim /kɔr/say-IMP word-PL nice.PL
 ‘Hashim, speak nice words!’
- (b) “sàlàð = ā”, ē bèè, “**ū = wɔr** ūūŋ cābb ánēén”
 Hyena = DEF 3sN say-INF 2sN = /wár/carry.IMP 2sR up like.this
 ‘“Hyena”, he said, “Make yourself upright . . .”’ (Nyee32)
- (c) **bìl** **fiŋð-ðð** kɔr ðən ní mā mân
 let.IMP /fiŋðn/hear-IMP.PL word 1sPs this very carefully
 ‘Please hear what I have to say!’ (Womn3)

Singular imperative forms generally have the same segmental form as the root, although a handful of imperative verbs attach suffixes, and some root-final segments are weakened when suffixes are not attached. Imperative plural forms take the

suffix $-dA^+$, where A^+ is underlyingly specified as [+ATR] and spreads the quality leftward to the root.

Table 35: Imperative suffixes

	IMP	IMP PL
Root-final w, y	$-n$	$-dA^+$
Other root-final segments	$-\emptyset$	$-dA^+$

Both imperative forms with various root-final consonants are shown in (18). Singular imperatives with root-final n as in (c) optionally elide the final segment. Imperatives with root-final w and y optionally attach the suffix $-n$ as in (f-g) which causes the root-final approximants to surface as vowels. Without the suffix, root-final approximants, as well as root-final plosives (h-j), are weakened to vowels or elided, in accordance with {P1b}. In imperative forms with root-final vowel, elided n , or elided g such as in (c, j, o), the root vowel is lengthened, in accordance with {P4}. Some imperatives with root-final vowel as in (p) add the suffix $-na$.

(18) Imperative verb forms with various root-final segments

	Root	IMP	IMP PL	
(a)	/cuḍ/ M	cūḍ-ú	cúḍ-ḍū [cúḍū]	‘climb’
(b)	/las/ M	lās	lósḍ-ḍḍ [lósḍḍ]	‘roll-up’
(c)	/gɔn/ L	gɔn, gɔ̀̀	gùḍ-ḍù [gùḍù]	‘grab’
(d)	/fɛð/ H	fɛð	fíḍ-ḍḍ [fíḍḍ]	‘release’
(d)			fíð-ðḍ [fíðḍ]	‘release’
(e)	/wer/ M	wēr	wír-rḍ [wír:ḍ], wír-ḍḍ	‘watch’
(f)	/ɲaw/ H	ɲáḍ, ɲáḍ-n	ɲóú.-ū, ɲóú-ḍū	‘request’
(g)	/kɔy/ H	kóé, kóé-n	kúí-ū, kúí-ḍū	‘cook’
(h)	/ab/ L	àḍ	ə̀̀-ḍù	‘sit’
(i)	/kaʃ/ H	káé	kóí-ḍḍ	‘bring’
(j)	/cig/ M	cī	cíg-ḍḍ	‘wear’
(k)	/lɔf/ L	lòf	lù̀̀-ḍù	‘do magic’
(l)	/ɲam/ M	ɲām	ɲóm-ḍḍ	‘break’
(m)	/gup/ L	gùḗ-ū	gùḗ-ḍù	‘agree’
(n)	/mal/ M	māl	mól-ḍḍ	‘gather’
(o)	/pa/ M	pāā	pó-ḍḍ	‘guard’
(p)	/beɛ/ L	bèè-nā	bì̀̀-ḍḍ	‘say’

The plural imperative forms mostly have the same consonant alternations as plural subjunctive forms. In the plural imperatives of (18a-d) the root-final coronal consonants $ḍ, s, n, ð$ assimilate to the suffix-initial $ḍ$. In (d-e), the suffix-initial $ḍ$ assimilates to root-final $ð$ and r . Possibly in (f-g), the suffix-initial $ḍ$ also assimilates to the root-final w and y , which then become vowels. In (f-i), the approximants w, y and plosives $b, ʃ$ are weakened syllable-finally to vowels with the

same [ATR] quality as the preceding vowel. Similarly, the root-final *f* of (k) is also weakened syllable-finally to *u*.

A handful of singular imperatives with root-final *ɟ, s, ʝ, n, l, r, ʃ* attach the suffix *-A* such as in (18a, m). The vast majority of imperatives with these root-final segments do not attach the suffix but *dáàn-a* ‘push’, *dḡḡs-ḡ* ‘stand, begin’, *bēl-á* ‘possess’, and *sír-ḡ* ‘make smooth’ are some that do attach the suffix.

9.5 Completive

The completive verb form is used to describe actions that are finished. In 9.6, we discuss how incomplete forms are used for actions that are not finished. These forms should not be confused with the perfect and imperfect forms of 10.6 and 10.8 which indicate that an action remains or does not remain in the present or future. In (19), these forms are compared.

- (19) **Completive and incomplete compared with perfective and imperfective**
- | | | | | | |
|-----|------|---|-----------|------|---|
| (a) | COMP | ē | cúr-sú | ṭṣón | ‘He tied the cow.’ (action is finished) |
| (b) | INCP | ē | cúr | ṭṣón | ‘He ties the cow.’ (action is still happening or will still happen) |
| (c) | INCP | ē | cúr = rṣr | ṭṣón | ‘He ties the cow.’
(it will not need to be tied again) |
| | PF | | | | |
| (d) | INCP | ē | cúr-í | ṭṣón | ‘He ties the cow.’
(it will later need to be tied again) |
| | IPF | | | | |

In that the completive action is claimed to be already finished, the completive suffix is a marker for certainty. As such, it is more commonly used in foregrounded nuclear clauses of non-fictional narratives as in (a) than in foregrounded clauses of fictional narratives. As shown in (b), it is also commonly used in tail-head linkage points of departure which link old information of a previous clause with a new nuclear clause.

(20) **Completive examples**

- | | | | | | | | |
|-----|--|-------|-------------------------|----------------|------------------|----------------|-------|
| (a) | ḵāfārì = n | é | mánē | ḵḡ | ḵàḵ-sḡ | càḵr-ēēgg = á | yḡḡsḡ |
| | Jafari = DEF | alone | just | /ḵāf/kill-COMP | rabbits-PL = DEF | four | |
| | ‘Jafari, by himself, killed four rabbits.’ (Jafr7) | | | | | | |
| (b) | é gārā | ē | wír-s = ɿ | ógg | ḵūmùḵn | ṭàw = ēē = n | |
| | GP when | 3SN | /wēr/notice-COMP = SBO1 | place | towards | up = SBO = DEF | |
| | ‘When he looked up, . . .’ (Goat7) | | | | | | |

Table 36: Completive suffix

All root-final segments	-sA
-------------------------	-----

A completive paradigm is shown in (21). Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel.

(21) **Completive paradigms**

(a) ‘bought the food’	(b) ‘buried the egg’
á mār-sà nāms = á 1sN	á ðūr-sù kólóð = ó 1sN
ó, ú = mār-sə nāms = á 2sN	ó, ú = ðūr-sù kólóð = ó 2sN
ē mār-sā nāms = á 3sN	ē ðūr-sū kólóð = ó 3sN
āgg mār-sà nāms = á 1pN	āgg ðūr-sù kólóð = ó 1pN
ōgg,	ōgg,
ūg = mār-sə nāms = á 2pN	ūg = ðūr-sù kólóð = ó 2sN
ēggà mār-sà nāms = á 3pN	ēggà ðūr-sù kólóð = ó 3pN
PRON buy- food=DEF	PRON bury- egg=DEF
COMP	COMP

Completive forms are listed in (22) with various root-final consonants. In the forms of (a-c), root-final coronals *ɟ*, *s*, *n* undergo assimilation to the suffix-initial *s*, just as they were shown to undergo assimilation to the subjunctive and imperative plural suffix-initial *ɟ* in 9.3-9.4. However, unlike in subjunctive and imperative plural forms, root-final *ð* in (d) is weakened to a vowel, just as root-final *w*, *y*, *b* in (e-g) are weakened to vowels in syllable-final position.

(22) **Completive verb forms with various root-final segments**

Root	COMP 3SN	
(a) /cuɟ/ M	cūs-sú	‘climb’
(b) /las/ M	lās-sá	‘roll-up’
(c) /gɔn/ L	gòs-sō	‘grab’
(d) /feð/ H	fěé-sá	‘release’
(e) /ɲaw/ H	ɲáó-só	‘request’
(f) /kɔy/ H	kóé-só	‘cook’
(g) /ab/ L	àò-sō	‘sit’
(h) /kaɲ/ H	káj-já	‘bring’
(i) /mal/ M	māl-đá	‘gather’
(j) /wer/ M	wēr-sá	‘watch’
(k) /ciɡ/ M	cīg-só	‘wear’
(l) /lof/ L	lòf-sō	‘do magic’
(m) /ɲam/ M	ɲām-sá	‘break’
(n) /gɔɲ/ L	gùɲ-sū	‘agree’
(o) /pa/ M	pā-sá	‘guard’
(p) /bɛɛ/ L	bèè-sā	‘say’

One assimilation process is unique to completive verb forms as seen in (22h-i). The suffix-initial *s* of the completive form becomes *ɲ* following root-final *ɲ* and becomes

ɸ following root-final *l*. Also, root-final *f* surfaces in most completive forms, however it weakens to *ɔ* in *gàð-sð* ‘gave’ and *ɸàð-sð* ‘beat’.

9.6 Incompletive

Incompletive verb forms are used to describe actions that are ongoing, continuous, habitual, or otherwise not finished. They are common in direct speech. The examples of (23) illustrate some of the functions of incompletive verbs. In (a), the incompletive verb is used as habitual action, in (b) a stative verb (of an embedded complement clause), in (c) irrealis action, in (d) an interrogative (of a background clause in a historical narrative), and in (e) simultaneous tail-head linkage. Continuous incompletive forms, a subset of incompletive verbs, are discussed in the following section.

(23) Incompletive examples

- (a) **kór** á kór ná ón = í
 speak.INCP 1sA word REL.SG bad = RDM
 ‘She speaks to me rudely.’ (Assa6)
- (b) ē gōms-óggō mī = n ē **nāā** é fɔl
 3sN /gām/find-COMP.D goat = DEF 3sN /nāg/lay.INCP GP hole.GEN
 ‘He discovered the goat down in the well.’ (Goat10)
- (c) ē lā **gəf = ì** wá, ē gəù-s = ũ = r³³
 3sN UN /gāf/give.INCP = not 3sN /gāf/give-COMP =
 3sAM IPF = PF
 ‘He would not give it, since he had already given.’ (Fand3)
- (d) ú = **nɪl** gār = ā súgg ìlg é gārā fěð-ǎn = á jègg = ā
 2pN = know place = DEF market in where placed things = DEF
 /nɛl/INCP /fěð/-CONT.P = PAS
 ‘Do you know the place in the market in Faaz
 where things are placed?’ (Fan27)
- (e) é gārā āld-á **ɸān** = ì īgg = í = n,
 GP when fox /ɸān/milk.INCP = SBO1 milk = SBO = DEF
 ‘While fox was milking,
 kúō = n ē māl-l fān tàð,
 froth = DEF 3sN gather-INF on top
 froth accumulated in the pan.’ (Nyee22-23)

³³ As discussed in 10.8, when the perfect clitic attaches to a completive imperfect verb as in (23c), the meaning is distant past action.

Unlike completives, no suffix is attached to incomplete forms. Thus, incomplete forms generally have the same segmental form as the root, except that root-final segments weaken to vowels in accordance with {P1b}.

Table 37: Incomplete suffix

All root-final segments	-Ø
-------------------------	----

The incomplete paradigms of (24) can describe an ongoing action. Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel.

(24) **Incomplete paradigms**

(a) ‘run’	(b) ‘bury the egg’
á kār 1sN	á ðùr kólóð = ó 1sN
ó, ú = kār 2sN	ó, ú = ðùr kólóð = ó 2sN
ē kār 3sN	ē ðùr kólóð = ó 3sN
āgg kār 1pN	āgg ðùr kólóð = ó 1pN
ōgg, ūg = kār 2pN	ōgg, ūg = ðùr kólóð = ó 2sN
ēggā kār 3pN	ēggā ðùr kólóð = ó 3pN
PRON run.	PRON bury. egg=DEF
INCP	INCP

Third singular incomplete verbs are listed in (25) according to root-final consonants, along with infinitive, first singular subjunctive, and singular imperatives for comparison. As in singular imperatives, root-final *b*, *j*, *w*, *y* in incomplete forms of (a-b, l-m) are weakened to vowels {P1b} and *g* in (c) is elided word-finally {P2}. Incomplete forms with root-final *w* and *y*, optionally attach the suffix *-n*. In incomplete forms with root-final vowel or elided *g* such as in (c,o), the underlying short vowel is lengthened {P4}.

(25) **Incomplete verb forms with various root-final segments**

Root	INF	SBJV 1sN	IMP	INCP 3sN	
(a) /ab/ L	àb-b	àb-b	àð	àõ	‘sit’
(b) /kaʃ/ H	káʃ-ʃ	kāʃ-ʃ	káé	káé	‘bring’
(c) /ciɡ/ M	cíɡ-g	cíɡ-g	cī	cī	‘wear’
(d) /cuð/ M	cūð-ð	cūð	cūð-ú	cūð	‘climb’
(e) /lɔf/ L	lɔf-f	lɔf	lɔf	lɔf	‘do magic’
(f) /las/ M	lās-s	lās	lās	lās	‘roll-up’
(g) /ɲam/ M	ɲām-m	ɲām	ɲām	ɲām	‘break’
(h) /gɔn/ L	gɔn-n, gɔ̀	gɔ̀n-(ɔ̀)	gɔ̀n, gɔ̀	gɔ̀n, gɔ̀	‘grab’
(i) /ɡuɲ/ L	ɡùɲ-ɲ	ɡùɲ	ɡùɲ-ū	ɡùɲ	‘agree’
(j) /mal/ M	māl-l	māl	māl	māl	‘gather’
(k) /wɛr/ M	wēr-r	wēr	wēr	wēr	‘watch’

	Root	INF	SBJV 1sN	IMP	INCP 3sN	
(l)	/ɲaw/ H	ɲáw-w	ɲáɔ̄-n	ɲáɔ̄-(n)	ɲáɔ̄-(n)	‘request’
(m)	/kɔy/ H	kóy-y	kóɛ̄-n	kóɛ̄-(n)	kóɛ̄-(n)	‘cook’
(n)	/fɛð/ H	fɛ̄ð-ð	f ɛ̄ð	fɛ̄ð	fɛ̄ð-(n)	‘release’
(o)	/pa/ M	pā-ɖ	pā-ɖ	pāā	pāā, pāɖ	‘guard’
(p)	/beɛ/ L	bèè	bèè-n	bèè-nā	bèè-(n)	‘say’

Other incomplete forms with lengthened root vowel are shown in (26).

(26) **Incomplete verbs with lengthened vowels**

Root	INCP 3sN	
/nag/ M	nāā	‘sleep’
/bag/ L	bāā	‘take’
/cag/ H	cāā	‘bathe’
/ɲag/ M	ɲāā	‘mix’
/cig/ M	cīī	‘wear’
/cug/ H	cúú	‘send’
/gug/ L	gùū	‘vomit’

9.6.1 Incomplete as habitual

In Gaahmg, there is no form used exclusively for habitual actions. Rather, habitual actions are described using either the incomplete or continuous, the continuous form being the more common. For some verbs, such as ‘sleep’, there is more than one form possible to describe habitual action: *nāā* (incomplete) and *nāān* (continuous). For other verbs, the choice of incomplete or continuous form for habitual action is based on the semantics of the verb. More study is needed to determine semantic groupings that predict the correct habitual verb form.

Examples of incomplete verbs used for habitual action are given in (27) and examples of continuous verbs for habitual action will be given in 9.7.

(27) **Verbs using incomplete form for habitual action**

Root	INCP 3sN	
/nag/ M	nāā	‘sleep’
/gal/ L	gāl	‘run’
/kar/ M	kār	‘run’
/kɔr/ H	kór	‘speak’
/war/ H	wār	‘take’
/ab/ L	àɔ̄	‘sit’
/cur/ H	cúr	‘tie’

9.6.2 Incompletive as future

All verbs can use the incompletive form for future actions from the time of speaking. To refer explicitly to the future, tone is altered on the subject pronoun. There is no future marking on the verb itself; the incompletive future has the same segmental and tonal form as other incompletives.

Future incompletive paradigms are given in (28). In first and second person subject pronouns, Mid tone is assigned along with High tone on the final syllable, resulting in falling tone. In the third singular nominative pronoun, the Mid tone is changed to High. With third plural certain future verbs, the third singular nominative pronoun with High tone is also used, and the third plural subject pronoun optionally precedes it.

(28) Future incompletive paradigms

(a) ‘will run’	(b) ‘will bury the egg’
ā gāl 1sN	ā ðùr kólóð = ɔ̄ 1sN
ṡ, ū = gəl 2sN	ṡ, ū = ðùr kólóð = ɔ̄ 2sN
é gāl 3sN	é ðùr kólóð = ɔ̄ 3sN
āggā gāl 1pN	āggā ðùr kólóð = ɔ̄ 1pN
ṡggṡ, ūggū = gəl 2pN	ṡggṡ, ūggū = ðùr kólóð = ɔ̄ 2sN
(ēggà) é gāl 3pN	(ēggà) é ðùr kólóð = ɔ̄ 3pN
PRON run.	PRON bury. egg=DEF
INCP	INCP

9.7 Continuous

Continuous verb forms are used for actions that are ongoing, or continue over time, and are not completed at the time of speaking. The past continuous form is used for ongoing actions at a reference point in the past, whereas the non-past continuous form is used for ongoing actions that are still continuing at the time of speaking. Although the incompletive form alone can imply that the action is ongoing, using the continuous non-past form makes the continuous action overt.

Continuous past verbs are commonly used in background clauses of narratives, as in (29a). Continuous non-past verbs are used in expository and hortatory texts, as in (b). Both are used in direct speech and conversations (c) and both are used habitually (b, d).

(29) Continuous examples

(a) bāárg = á	áð-á n	àn-ân	è	jṡgg	gṡṡr = ē
Baggara = DEF	coming-	staying-	with	people	Goor = ACM
	CONT.P	CONT.P			

‘The Baggara were coming with the people of Goor.’ (Minj4)

- (b) $\text{ɿ} \text{á} \text{ɿ} \text{é} \text{ fáá-gg} \text{ é} \text{ fáá-gg}; \text{áw-án} \text{ é} \text{ búggõŋ}$
 create. GP line-PL GP line-PL /áb/sit- GP group.PL
 INCP.3pN CONT.N.3p
 ‘They create lines; they usually sit in groups.’ (Tifa8-9)
- (c) $\text{mīi} = \text{n} \text{ á} \text{ gáf-án} \text{ jõgg} \text{ fāŋ} = \text{án} \text{ ā} \text{ nóm-ɖ} = \text{úggò}$
 goat = 1sN give/- people old = DAT SBJV /nām/eat-
 DEF CONT.N SBJV = IPF.3p
 ‘The goat I am giving to the old men to eat.’ (Jooj12)
- (d) $\text{ú} = \text{ɲí} \text{ gār} = \text{ā} \text{ súugg} \text{ ílg} \text{ é} \text{ gārā} \text{ fěð-án} = \text{á} \text{ jègg} = \text{ā}$
 2pN = place = market in where placed things =
 know DEF DEF DEF
 /ɲé/INCP /fěð/-CONT.P = PAS
 ‘Do you know the place in the market in Faaz where things
 were placed (down for selling)?’ (Fan27)

Whereas the incomplete has no suffix, the continuous form attaches the suffix *-An* to the root, where *A* is a back [-round] vowel. Continuous past and non-past forms differ only by different underlying tone on the suffix: H for non-past continuous and MH for past continuous.

Table 38: Incomplete suffix

	CONT.N	CONT.P
All root-final segments	- <u>A</u> n	- <u>Ã</u> n

Continuous non-past paradigms are shown in (30). When the non-future set of subject pronouns, which are underlined in (30), is used with continuous non-past verbs, the continuous action has already begun. When the future set of pronouns is used with continuous non-past verbs, the continuous action will begin soon or in some cases has already begun. Second person subject pronouns are optionally

(30) **Continuous non-past paradigms**

- | | |
|---|---|
| (a) ‘running’ | (b) ‘burying the egg’ |
| <u>á</u> , ā gāl-àn 1sN | <u>á</u> , ā ðür-àn kólód = ɔ 1sN |
| <u>ɿ</u> , ɿ, <u>ú</u> , ú = gəl-àn 2sN | <u>ɿ</u> , ɿ, <u>ú</u> , ú = ðür-àn kólód = ɔ 2sN |
| ē, é gāl-àn 3sN | ē, é ðür-àn kólód = ɔ 3sN |
| <u>āggá</u> , āggá gāl-àn 1pN | <u>āggá</u> , āggá ðür-àn kólód = ɔ 1pN |
| <u>ōggó</u> , ōggó, | <u>ōggó</u> , ōggó, |
| <u>ūggú</u> , ūggú = gəl-àn 2pN | <u>ūggú</u> , ūggú = ðür-àn kólód = ɔ 2sN |
| ēggà gāl-àn 3pN | ēggà ðür-àn kólód = ɔ 3pN |
| PRON run. | PRON bury. egg=DEF |
| CONT.N | CONT.N |

[+/- ATR] regardless of the [ATR] quality of the root vowel.

As shown in (31), continuous past forms are the same as continuous non-past forms except for tone. Both sets of subject pronouns (future and non-future) may precede continuous past forms, although there is no difference in meaning—both mean an action that continued before the time of the utterance.

(31) **Continuous past paradigms**

(a) ‘was running’	(b) ‘was burying the egg’
á, ā gəl-ān 1sN	á, ā ðùr-ān kólóđ = 5 1sN
ḥ, ḥ, ú, ú = gəl-ān 2sN	ḥ, ḥ, ú, ú = ðùr-ān kólóđ = 5 2sN
ē, é gəl-án 3sN	ē, é ðùr-án kólóđ = 5 3sN
āggá, āggā gəl-ān 1pN	āggá, āggā ðùr-ān kólóđ = 5 1pN
ōggó, ōggō,	ōggó, ōggō,
ūggú, ūggú = gəl-ān 2pN	ūggú, ūggú = ðùr-ān kólóđ = 5 2sN
ēggà gəl-án 3pN	ēggà ðùr-án kólóđ = 5 3pN
PRON run.	PRON bury. egg=DEF
CONT.N	CONT.N

In (32), continuous past forms are shown with various root-final segments. In (a-b), root-final *b, ʃ* are weakened to approximants {P1a} and in (c), *g* is elided {P2}. The suffix is attached to vowel-final roots such as in (o), as a second syllable juxtaposed to the first, in accordance with {M2} in 3.1. In the continuous verb with root /kɔ/ ‘call’, the suffix vowel remains unrounded (*kɔ̄-ān*). Continuous forms optionally attach the suffix *-CAn³⁴*, where *C* assimilates to the root-final consonant which then surfaces as a single unweakened segment. Forms with root-final *w, y, ð* as in (l-n) optionally attach the suffix *-nAn*. Some forms with root-final vowel such as in (p) also take this suffix.

(32) **Continuous past forms with various root-final segments**

Root	CONT.P 3SN		
(a) /ab/ L	àw-án	àb-bán [àbán]	‘sit’
(b) /kaʃ/ H	káy-án	káʃ-ʃán [káʃán]	‘bring’
(c) /ciɡ/ M	cí.-án	cíɡ-gón [cíɡón]	‘wear’
(d) /cuđ/ M	cūđ-ún	cūđ-đún [cūđún]	‘climb’
(e) /lɔf/ L	lɔf-án	lɔf-fán [lɔfán]	‘do magic’
(f) /las/ M	lās-án	lās-sán [lāsán]	‘roll-up’
(g) /ɲam/ M	ɲām-án	ɲām-mán [ɲāmán]	‘break’
(h) /ɡɔn/ L	gòn-án	gòn-nán [gònán]	‘grab’

³⁴ The continuous form with suffix *-CAn* could be a shorten form of the deictic continuous form with suffix *-(Cag)gAn* shown in (52) of 9.9, as the verbs in these forms are similar or identical.

	Root	CONT.P 3sN			
(i)	/gʊŋ/ L	gùŋ-án	gùŋ-ŋón	[gùŋón]	‘agree’
(j)	/mal/ M	māl-án	māl-lán	[mālán]	‘gather’
(k)	/wɛr/ M	wēr-án	wēr-rán	[wērán]	‘watch’
(l)	/ŋaw/ H	ŋáw-án	ŋáó-nán		‘request’
(m)	/kɔy/ H	kóy-án	kóé-nán		‘cook’
(n)	/fɛð/ H	féð-án	féð-nán		‘release’
(o)	/pa/ M	pā.-án			‘guard’
(p)	/bɛɛ/ L		bèè-nán		‘say’

As shown in (29b,d), continuous non-past and past can both be used for habitual actions. Some examples in non-past form are listed in (33).

(33) **Verbs using continuous non-past form for habitual action**

Root	CONT.N 3sN		Root	CONT.N 3sN			
(a)	/ɖaf/	ɖáf-án	‘beat’	(h)	/cig/	cī-ín	‘wear’
(b)	/gaf/	gáf-án	‘give’	(i)	/ɖif/	ɖíf-ón	‘tie’
(c)	/mag/	mā-án	‘drink’	(j)	/ɖir/	ɖír-ón	‘kill’
(d)	/fej/	féy-én	‘clean’	(k)	/cug/	cú-ún	‘send’
(e)	/nag/	nā-án	‘sleep’	(l)	/lɛg/	lē-én	‘come’
(f)	/ku/	kū-ún	‘build’	(m)	/bɛl/	bél-án	‘call’
(g)	/nag/	ná-án	‘read’	(n)	/mɔr/	mór-ón	‘sell’

9.8 Verb stem tone assignment

We now present the tone of all inflectional verb forms presented thus far, although not all in the same order as in previous sections. The verb stem suffixes discussed to this point have no underlying tone except for the past continuous suffix $-\underline{A}n$ with MH tone, the non-past continuous suffix $-\underline{A}n$ with High tone, and the imperative suffix $-\underline{A}$ with High tone which attaches to a few imperative verbs.

Table 39: Verb stem suffixes

SBJV 1sN, 2sN	-CA, -dA
SBJV 3sN, 1pN, 2pN, 3pN	-dA
IMP	$-\underline{A}$
IMP.PL	$-\underline{d}^+A$
COMP	-sA
CONT.P	$-\underline{A}n$
CONT.N	$-\underline{A}n$

In all finite verb forms, Mid tone is assigned to the stem-final syllable of first and second person forms, High tone is assigned to the stem-final syllable of third singular verbs, and Low tone is assigned to the stem-final syllable of third plural verbs. Thus, although many of the inflectional verb suffixes have no underlying

tone, tone is assigned to the suffixes according to these tonal inflections for subject person agreement.

Table 40: Subject person inflectional tone

	1sN	2sN	3sN	1pN	2pN	3pN
Root tone	+M	+M	+H	+M	+M	+L

9.8.1 Infinitive tone

Underlying tone surfaces unchanged in infinitive verbs, and such forms do not inflect for person by tone changes. The same seven tone melodies as in 9.1 are presented here for reference.

(34) Tonal contrasts in infinitive verb forms

	Root tone	INF	
(a)	H	fír-r	‘smell, pray’
(b)	M	cōr-r	‘help’
(c)	L	ḍùr-r	‘bury’
(d)	HL	pâr-r	‘attach’
(e)	HM	bêl-l	‘name, call’
(f)	ML	dōḍs-s	‘stand’
(g)	MH	kǎḍ-ḍ	‘strike, ram’

9.8.2 Completive tone

In (35), first singular, third singular, and third plural subject completive forms with various root tone melodies are compared. Mid tone assigned to the suffix in first singular forms becomes Low when following Low tone, as in (c,d,f). High tone assigned to the suffix in third singular forms becomes Mid when following Low tone in (c,d,f). These processes are in accordance with the tone lowering rule {M9} of 3.4.3. Low tone assigned to the suffix in third plural forms causes the root Low tone melody of (c) to be come Mid, in accordance with the raising rule {M8} of 3.4.2. In (e), the Mid tone of the HM root tone becomes Low in accordance with the lowering rule {M7} of 3.4.2.

(35) Completive forms with various root tone melodies

	Root tone	COMP 1sN	COMP 3sN	COMP 3pN	
(a)	H	fír-sḥ	fír-sḥ	fír-sḥ	‘smell’
(b)	M	cōr-sḥ	cōr-sḥ	cōr-sḥ	‘help’
(c)	L	ḍùr-sḥ	ḍùr-sḥ	ḍùr-sḥ	‘bury’
(d)	HL	pâr-sḥ	pâr-sḥ	pâr-sḥ	‘attach’
(e)	HM	bêl-ḍā	bêl-ḍā	bêl-ḍā	‘name’
(f)	ML	dōḍs-sḥ	dōḍs-sḥ	dōḍs-sḥ	‘stand’
(g)	MH	kǎs-sḥ	kǎs-sḥ	kǎs-sḥ	‘strike’

9.8.3 Subjunctive tone

Subjunctive tone assignment as in (36) is the same as in completive forms except that roots with Mid tone melodies as in (b) are replaced by High tone for unknown reasons. Suffix Mid tone in first singular and second plural forms assimilates to root-final Low tone {M9}, as in (c,d,f). Suffix High tone in third singular forms becomes Mid when following Low tone {M9} in (c,d,f). Suffix Low tone in third plural forms causes the root Low tone of (c) to become Mid {M8}, and in (e) the Mid tone of the HM root tone becomes Low {M7}.

(36) Subjunctive forms with various root tone melodies

Root tone	SBJV 1sN	SBJV 2pN	SBJV 3sN	SBJV 3pN	
(a) H	f̃r	f̃r-r̃	f̃r-r̃ó	f̃r-r̃è	‘smell’
(b) M	c̃r	c̃r-r̃	c̃r-r̃ó	c̃r-r̃è	‘help’
(c) L	ḍr	ḍr-r̃	ḍr-r̃	ḍr-r̃	‘bury’
(d) HL	p̃r	p̃r-r̃è	p̃r-r̃ó	p̃r-r̃è	‘attach’
(e) HM	b̃l	b̃l-ḍ	b̃l-ḍá	b̃l-ḍà	‘name’
(f) ML	d̃s-s-ḍ	d̃s-ḍ-ḍ	d̃s-ḍ-ḍ	d̃s-ḍ-ḍ	‘stand’
(g) MH	k̃-ḍ	k̃-ḍ-ḍ	k̃-ḍ-ḍ	k̃-ḍ-ḍ	‘strike’

9.8.4 Incomplete tone

Tone assignment for incomplete forms is mostly the same as for completive and subordinate forms. First singular Mid tone assimilates to root-final Low tone {M9}, as in (c,d,f). Third singular High tone becomes Mid when following Low tone {M9} in (c,f). Third plural Low tone causes the root Low tone melody of (c) to become Mid {M8}, and in (e) the Mid tone of the HM root tone becomes Low {M7}. For unknown reasons, final High tone in third singular forms with Mid root tone melody as in (b) does not surface. However, when a vowel-initial clitic with no underlying tone is attached such as the second person object pronoun =O, the clitic surfaces with High tone (c̃r = ɔ́n). When the third singular High tone is added to incomplete forms with HL root tone melody, the combination HLH tone surfaces as HMH tone in accordance with the combination rule {M10} in 3.4.4.

(37) Incomplete forms with various root tone melodies

Root tone	INCP 1sN	INCP 3sN	INCP 3pN	
(a) H	f̃r	f̃r	f̃r	‘smell’
(b) M	c̃r	c̃r	c̃r	‘help’
(c) L	ḍr	ḍr	ḍr	‘bury’
(d) HL	p̃r	p̃r	p̃r	‘attach’
(e) HM	b̃l	b̃l	b̃l	‘name’
(f) ML	d̃s-s	d̃s-s	d̃s-s	‘stand’
(g) MH	k̃-ḍ	k̃-ḍ	k̃-ḍ	‘strike’

9.8.5 Imperative tone

Tone assignment of the singular imperative is the same as the root tone, although when the suffix *-Á* is added to some singular imperatives, it has High tone which becomes Mid following preceding Low {M9}, as in (38f). Final Mid tone is assigned to imperative plural forms but assimilates to the preceding Low {M9} in (c,d,f). Like the subjunctive, in imperative plural forms with Mid root tone melodies as (b), the root tone is replaced by High tone.

(38) Imperative forms with various root tone melodies

	Root tone	IMP	IMP.PL	
(a)	H	fír-ś	fír-rē	‘smell’
(b)	M	cōr	cúr-rū	‘help’
(c)	L	ḍùr	ḍùr-rù	‘bury’
(d)	HL	pâr	pâr-rè	‘attach’
(e)	HM	bél-á	bíl-ḍē	‘name’
(f)	ML	dōḍs-ḥ	dūùḍ-ḍù	‘stand’
(g)	MH	kśō-ś	kśḍ-ḍē	‘strike’

9.8.6 Continuous past tone

In tone assignment of continuous forms, some of the same rules as well as additional rules apply. Although a few rules account for tone assignment in nearly all continuous forms, when and how they apply is less predictable. In (39), the continuous past forms with various root tone melodies are shown together for comparison, but each of the three person forms are dealt with separately in following paragraphs in order to demonstrate the applications of all rules. When an object pronoun attaches to verbs with HL and ML root tone melodies as in (d,f), different tone results on the continuous past suffix than when there is no object pronoun.

(39) Continuous past forms *-Ān* (MH) with various root tone melodies

	Root tone	CONT.P 1sN	CONT.P 3sN	CONT.P 3pN	
(a)	H	fír-ś̄ n	fír-ś̄n	fír-ś̄ n	‘smell’
(b)	M	cōr-ān	cōr-ān	cōr-ān	‘help’
(c)	L	ḍùr-ēn	ḍùr-ēn	ḍùr-ēn	‘bury’
(d)	HL	pâr-ən	pâr-ən	pâr-ē̄ n	‘attach’
		pâr-ən = ī	pâr-ən = ī	pâr-ən = ì	‘attach it’
(e)	HM	bél-á̄ n	bél-ān	bél-á̄ n	‘name’
(f)	ML	dōḍs-ān	dōḍs-ān	dōḍs-ā̄ n	‘stand’
		būḡn-ḍ-ən = ī	būḡn-ḍ-ən = ī	būḡn-ḍ-ən = ì	‘make it big’
(g)	MH	kśō-ś̄ n	kśō-ś̄n	kśō-ś̄ n	‘strike’

In the first singular continuous past forms of (40), the Mid tone morpheme is assigned to the end of the continuous suffix *-Ān* (MH) to become *-Ā̄n* (MHM). In

(c,d,f), the initial Mid tone of the suffix $-\bar{A}n$ assimilates to the preceding Low tone {M9} and unites with it. In (d,f), the resulting L-HM tone then becomes L-M {M9}, or in (d) when the third singular object clitic $=E$ with no underlying tone is attached, the resulting HL-HM becomes H-MHM {M10}. In (f), when the third singular object clitic is attached, the underlying tone surfaces unchanged.

(40) **First singular past continuous $-\bar{A}n$ (MHM) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P 1SN	
(a)	H	H-MHM>H-MHM		fīr-r	fīr- $\bar{\delta}$ n	‘smell’
(b)	M	M-MHM>M-HM		cōr-r	cōr- \bar{a} n	‘help’
(c)	L	L-MHM>L-HM	L-M>L-L	ḡūr-r	ḡūr- $\bar{\delta}$ n	‘bury’
(d)	HL	HL-MHM>HL-HM >H-LM	L-M>L-L; L-H>L-M	pār-r	pār- $\bar{\delta}$ n	‘attach’
		HL-MHM>HL-HM >H-MHM	L-M>L-L; HLH>HMH		pār- $\bar{\delta}$ n = \bar{i}	‘attach it’
(e)	HM	HM-MHM> H-MHM		bēl-l	bēl- \bar{a} n	‘name’
(f)	ML	ML-MHM> ML-HM> ML-LM	L-M>L-L; L-H>L-M	dōs- s	dōs- \bar{a} n	‘stand’
		ML-MHM> ML-MHM		būḡ-ḡ ḡn = \bar{i}	būḡ-ḡ- ḡn = \bar{i}	‘make it big’
(g)	MH	MH-MHM> MH-MHM		kōḡ-ḡ	kōḡ- $\bar{\delta}$ n	‘strike’

In High-initial two tone root melodies such as (40d-e), the second tone of the melody surfaces on the suffix, delinked from the root. However, in other root melodies, the root tones remain assigned to the root. When three tones surface on the past continuous suffix such as in (a,e,g), High tone is lowered to ‘half High’ pitch, being one of three tones on a mid weight syllable, similar to tone of the accompaniment clitic $=\bar{E}$ described in 7.6.2.

In the third singular forms of (41), High tone is assigned to the end of the continuous suffix $-\bar{A}n$ (MH), which already has final High tone. In (c,d,f), the initial Mid tone of the suffix $-\bar{A}n$ assimilates to the preceding Low tone {M9}. In (d), the resulting H-LH becomes H-MH {M10} when the third singular object $=\bar{E}$ with HM tone is attached, and in (f), the underlying tone surfaces unchanged when the third singular object is attached.

(41) **First third past continuous $-\tilde{A}n$ (MH) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P	
					3sN	
(a)	H	H-MH>H-MH		fír-r	fír-ǎn	‘smell’
(b)	M	M-MH>M-H		cōr-r	cōr-án	‘help’
(c)	L	L-MH>L-H	L-M>L-L	ḍùr-r	ḍùr-ǎn	‘bury’
(d)	HL	HL-MH>H-LH	L-M>L-L	pâr-r	pâr-ǎn	‘attach’
		HL-MH>H-LH	L-M>L-L;	pâr-r	pâr-ǎn = ǐ	‘attach it’
		>H-MH	HLH>HMH			
(e)	HM	HM-MH>H-MH		bēl-l	bēl-ǎn	‘name’
(f)	ML	ML-MH>ML-LH	L-M>L-L	dōs-	dōs-ǎn	‘stand’
		ML-MH>ML-MH		bûn-ḍ	bûn-ḍ-ǎn = ǐ	‘make it big’
(g)	MH	MH-MH>MH-MH		kǎḍ-ḍ	kǎḍ-ǎn	‘strike’

In the third plural forms of (42), Low tone is assigned to the end of the continuous suffix to become $-\tilde{A}n$ (MHL). In (c,d,f), the initial Mid tone of the suffix $-\tilde{A}n$ assimilates to the preceding Low {M9}. In (d), the resulting H-LHL tone becomes H-LML in accordance with the combination rule {M11} in 3.4.4, or the tone becomes H-MHL {M10} when the third singular object clitic =E with no underlying tone is attached. In (f), the LHL tone also becomes LML {M11}, or the underlying tone surfaces unchanged when the third singular object is attached.

(42) **Third plural past continuous $-\tilde{A}n$ (MHL) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.P	
					3pN	
(a)	H	H-MHL>H-MHL		fír-r	fír-ǎ n	‘smell’
(b)	M	M-MHL>M-HL		cōr-r	cōr-ân	‘help’
(c)	L	L-MHL>L-HL	L-M > L-L	ḍùr-r	ḍùr-ǎn	‘bury’
(d)	HL	HL-MHL>H-LHL	L-M > L-L;	pâr-r	pâr-ǎ n	‘attach’
		>H-LML	LHL > LML			
		HL-MHL>H-LHL	L-M > L-L;		pâr-ǎn = ì	‘attach it’
		>H-MHL	HLH > HMH			
(e)	HM	HM-MHL>		bēl-l	bēl-ǎ n	‘name’
		HM-MHL				
(f)	ML	ML-MHL>	L-M > L-L;	dōs-	dōs-ǎ n	‘stand’
		ML-LHL>		s		
		ML-LML	LHL > LML			
		ML-MHL>		bûn-ḍ	bûn-ḍ-ǎn = ì	‘make it big’
(g)	MH	MH-MHL>		kǎḍ-ḍ	kǎḍ-ǎ n	‘strike’
		MH-MHL				

9.8.7 Continuous non-past tone

In (43), continuous non-past forms with various root tone melodies are shown together for comparison, and each of the three person forms are dealt with separately in following paragraphs. In each of the three forms, a new assimilation rule is used: M-H>M-M, which states that High suffix tone assimilates to preceding Mid. However, the rule only applies in forms with HM root tone melodies as in (e) and not in forms with Mid root tone melody as in (b). Thus, the assimilation rule is more of an exception than a rule, and for this reason is not included in the morphophonological rules of chapter 3. Where it applies in the derivations to follow, it is marked with a diamond (◊) to distinguish it from the regular morphophonological rules.

(43) **Continuous non-past forms $\underline{\underline{A}}n$ (H) with various root tone melodies**

	Root tone	CONT.N 1sN	CONT.N 3sN	CONT.N 3pN	
(a)	H	fír-ḡn	fír-ḡn	fír-ḡn	‘smell’
(b)	M	cḡr-ḡn	cḡr-ḡn	cḡr-ḡn	‘help’
(c)	L	ḡr-ḡn	ḡr-ḡn	ḡr-ḡn	‘bury’
(d)	HL	pḡr-ḡn	pḡr-ḡn	pḡr-ḡn	‘attach’
(e)	HM	bél-ḡn	bél-ḡn	bél-ḡn	‘name’
(f)	ML	dḡḡs-ḡn	dḡḡs-ḡn	dḡḡs-ḡn	‘stand’
(g)	MH	kḡḡ-ḡn	kḡḡ-ḡn	kḡḡ-ḡn	‘strike’

In the first singular continuous past forms of (44), the Mid tone morpheme is assigned to the end of the continuous suffix $\underline{\underline{A}}n$ (H) to become $\underline{\underline{A}}n$ (HM). In (c,d,f), the initial High tone of the suffix $\underline{\underline{A}}n$ becomes Mid {M9}. In (c,d), the resulting L-M tone then becomes L-L {M9}, where the same rule applies twice to the same verb forms. As mentioned, the initial High tone of the suffix assimilates to the preceding Mid tone of HM root tone melodies {◊} as in (e), but not to the root Mid tone of (b). As in continuous past forms, in (44d-e), the second tone of the root

(44) **First singular non-past continuous $\underline{\underline{A}}n$ (HM) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 1sN	
(a)	H	H-HM>H-HM		fír-r	fír-ḡn	‘smell’
(b)	M	M-HM>M-HM		cḡr-r	cḡr-ḡn	‘help’
(c)	L	L-HM>L-M >L-L	L-H>L-M; L-M>L-L	ḡr-r	ḡr-ḡn	‘bury’
(d)	HL	HL-HM>HL-M >H-L	L-H>L-M; L-M>L-L	pḡr-r	pḡr-ḡn	‘attach’
(e)	HM	HM-HM>H-M	M-H>M-M ◊	bél-l	bél-ḡn	‘name’
(f)	ML	ML-HM>ML-M	L-H>L-M	dḡḡs-s	dḡḡs-ḡn	‘stand’
(g)	MH	MH-HM>MH-MH		kḡḡ-ḡ	kḡḡ-ḡn	‘strike’

melody surfaces on the suffix and delinks from the root, but in (f-g), the root melody remains assigned to the root.

In the third singular forms of (45), High tone is assigned to the end of the continuous suffix $-\hat{A}n$, which already has High tone. In (c,d,f), the High tone of the suffix $-\hat{A}n$ becomes Mid {M9}. For unknown reasons, the resulting L-M tone does not become L-L by a second application of {M9} as in the verbs of (44c,d). Again the initial High tone of the suffix assimilates to the preceding Mid tone { \diamond } in (e) but not in (b).

(45) **Third singular non-past continuous $-\hat{A}n$ (H) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 3sN	
(a)	H	H-H>H-H		fír-r	fír-ón	'smell'
(b)	M	M-H>M-H		cōr-r	cōr-án	'help'
(c)	L	L-H>L-LM	L-H>L-M	ḍùr-r	ḍùr-ən	'bury'
(d)	HL	HL-H>H-LM	L-H>L-M	pâr-r	pâr-ən	'attach'
(e)	HM	HM-H>H-M	M-H>M-M \diamond	bél-l	bél-ān	'name'
(f)	ML	ML-H>ML-M	L-H>L-M	dōs-s	dōs-ān	'stand'
(g)	MH	MH-H>MH-H		kǎð-ð	kǎð-ən	'strike'

In the third plural forms of (46), Low tone is assigned to the end of the continuous suffix $-\hat{A}n$ to become $-\hat{A}n$ (HL). In (c,d,f), the initial High tone of the suffix $-\hat{A}n$ becomes Mid {M9}. In (d, f), Mid tone of the resulting HL-ML tone assimilates to the preceding Low {M9}, where the same rule applies twice to the same verb forms. In (c), the root Low tone is raised to Mid {M8}. The initial High tone of the suffix assimilates to the preceding Mid tone { \diamond } in (e) but not in (b).

(46) **Third plural non-past continuous $-\hat{A}n$ (HL) with various root tone melodies**

	Root tone	Stem Tone Formation	Rule Applied	INF	CONT.N 3pN	
(a)	H	H-HL>H-HL		fír-r	fír-ən	'smell'
(b)	M	M-HL>M-HL		cōr-r	cōr-ən	'help'
(c)	L	L-HL>L-ML >M-ML	L-H>L-M; L-L>M-L	ḍùr-r	ḍùr-ən	'bury'
(d)	HL	HL-HL>HL-ML >H-L	L-H>L-M; L-M>L-L	pâr-r	pâr-ən	'attach'
(e)	HM	HM-HL>H-ML	M-H>M-M \diamond	bél-l	bél-ān	'name'
(f)	ML	ML-HL>ML-ML >ML-L	L-M>L-L L-M>L-L	dōs-s	dōs-ən	'stand'
(g)	MH	MH-HL>MH-HL		kǎð-ð	kǎð-ən	'strike'

imperative deictic verbs do change according to person forms of the verb.

(50) **Continuous non-past distance paradigm ‘chop’**

	CONT.N	CONT.N.D	
ā	kóm-ān	kóm-gōn	1sN
ō, ū =	kúm-ōn	kúm-gún	2sN
é	kóm-án	kóm-gón	3sN
āggā	kóm-ān	kóm-gōn	1pN
ōggō, ūggū =	kúm-ōn	kúm-gún	2pN
ēggā	kóm-ān	kóm-gōn	3pN

(51) **Imperative distance verbs**

IMP	IMP.D	IMP.PL	IMP.PL.D	
kóm	kóm-gō	kúm-dū	kúm-ḡ-ūū	‘chop’
māā	mā-ḡāggā	mō-ḡō	mō-ḡ-ūū	‘drink’

In (52), third singular forms are shown with the deictic completive suffix *-CÁggĀ* and deictic continuous non-past suffix *-(CAG)gAn* attached to verb roots with various final segments. The continuous forms are optionally shortened in verbs with many root-final segments. The initial consonant of the suffixes takes on all the features of the root-final consonant and becomes *ḡ, n*, or does not surface when attached to vowel-final roots. Geminate segments surface as single segments.

(52) **Third singular deictic completive *-CÁggĀ* and continuous non-past *-(CAG)gAn* verbs**

	COMP.D 3SN	CONT.N.D 3SN	
(a) /ab/ L	àb-bāggā	àb-bāggán	àb-gán ‘sit’
(b) /kaʃ/ H	káj-ǰāggā	káj-ǰāggán	káj-ǰán ‘bring’
(c) /cig/ M	cīg-ǰōggō	cīg-ǰōggón	cīg-gón ‘wear’
(d) /cuḡ/ M	cūḡ-ḡúggū	cūḡ-ḡúggún	cūḡ-ḡún ‘climb’
(e) /lɔf/ L	lòf-fōggō	lòf-fōggón	lòf-gón ‘do magic’
(f) /las/ M	lās-sāggā	lās-sāggán	‘roll-up’
(g) /ɲam/ M	ɲām-māggā	ɲām-māggán	ɲām-gán ‘break’
(h) /gɔn/ L	gòn-nōggō	gòn-nōggón	gòn-gón ‘grab’
(i) /gɔɲ/ L	gùɲ-ɲūggū	gùɲ-ɲūggún	gùɲ-gún ‘agree’
(j) /mal/ M	māl-lāggā	māl-lāggán	māl-gán ‘gather’
(k) /wɛr/ M	wēr-rāggā	wēr-rāggán	wēr-gán ‘watch’
(l) /ɲaw/ H	ɲáw-wāggā	ɲáw-wāggán	‘request’
(m) /kɔy/ H	kóy-yōggō	kóy-yāggán	‘cook’
(n) /fɛð/ H	féð-ðāggā	féð-ðāggán	‘release’
(o) /pa/ M	pā-ḡāggā	pā-ḡāggán	pā-ḡán ‘guard’
(p) /beɛ/ L	bèè.-(n)āggā	bèè.-(n)āggán	‘say’

In (53), the deictic completive suffix *-CÁggĀ* with underlying HM tone and the deictic continuous non-past suffix *-CÁggĀn* with H tone is attached to verb roots with various tone melodies. Completive and continuous forms are shown for comparison. Suffix-initial High tone becomes Mid following Low {M9} in (c,d,f).

(53) **Third singular deictic completive *-CÁggĀ* and continuous non-past *-(Ág)gĀn* verb forms**

Root	COMP	COMP.D	CONT.N	CONT.N.D	
tone	3sN	3sN	3sN	3sN	
(a) H	fír-só	fír-óggō	fír-ón	fír-(óg)gón	‘smell’
(b) M	cōr-só	cōr-óggō	cōr-án	cōr-(óg)gón	‘help’
(c) L	ḍùr-sū	ḍùr-ūggū	ḍùr-òn	ḍùr-(ūg)gún	‘bury’
(d) HL	pôr-sō	pôr-ōggō	pôr-òn	pôr-(ōg)gón	‘attach’
(e) HM	bél-ḍá	bél-ággā	bél-ān	bél-(ág)gán	‘name’
(f) ML	dōḍs-sō	dōḍs-ōggō	dōḍs-ān	dōḍs-(ōg)gón	‘make-big’
(g) MH	kōḍ-só	kōḍ-óggō	kōḍ-ón	kōḍ-(óg)gón	‘strike’

Deictic imperative plural forms with suffix *-úū* with HM tone have similar tone assignment.

(54) **Deictic imperative plural *-úū* verb forms**

Root tone	IMP.PL	IMP.PL.D	
(a) H	fír-rō	fír-r-úū	‘smell’
(b) M	cúr-rū	cúr-r-úū	‘help’
(c) L	ḍùr-rù	ḍùr-r-úū	‘bury’
(d) HL	pôr-rò	pôr-r-úū	‘attach’
(e) HM	bíl-ḍō	bíl-ḍ-úū	‘name’
(f) ML	dūḍ-ḍ-ḍù	dūḍ-ḍ-úū	‘make-big’
(g) MH	kōḍ-ḍō	kōḍ-ḍ-úū	‘strike’

9.10 Antipassive verb forms

When a speaker uses a transitive verb and wants to indicate that an implied object is unknown or is intentionally not mentioned, he or she does so by attaching the antipassive suffix *-An* to the verb root. In (55a), the simple completive verb *ḡām-sá* ‘break’ is contrasted with the antipassive completive *ḡām-án-sá* in (b). For further examples, see 14.5.4 on verbal valency of transitive verbs.

(55a)	kāsá = n	ḡām-sá	gùlḍū	(b)	kāsá = n	ḡām-án-sá
	boy = DEF	/ḡam/break-	branch		boy = DEF	/ḡam/break-
		COMP				ANTIP-COMP
		‘The boy broke a branch.’				‘The boy broke something.’

9.10.1 Antipassive segmental morphology

The antipassive suffix *-An* attaches to the verb root before inflectional suffixes are added.

Table 42: Antipassive suffixes

Incompletive	-An
Subjunctive	-An, -An-dA
Completive	-An-sA
Continuous non-past	-An-An

In (56-57), antipassive paradigms are compared with non-antipassive verb paradigms.

(56) Antipassive completive and incompletive paradigms ‘break’

(a)	COMP	ANTIP COMP	(b)	INCP	ANTIP INCP	
á	ɲām-sā	ɲām-án-sā	ā	ɲām	ɲāām-án	1sN
ó, ú =	ɲōm-sō	ɲōm-ón-sō	ō, ú =	ɲōm	ɲōōm-ón	2sN
ē	ɲām-sá	ɲām-án-sá	é	ɲām	ɲāām-án	3sN
āgg	ɲām-sā	ɲām-án-sā	āggá	ɲām	ɲāām-án	1pN
ōgg,	ɲōm-sō	ɲōm-ón-sō	ōggó,	ɲōm	ɲōōm-ón	2pN
ūgg =			ūggú =			
ēggà	ɲām-sà	ɲām-án-sà	ēggà	ɲām	ɲāām-án	3pN

(57) Antipassive subjunctive and continuous non-past paradigms

(a) ‘break’	SBJV	ANTIP SBJV	(b) ‘work’	CONT.N	ANTIP CONT.N	
ā	ɲám	ɲāām-án	ā	káám-àn	káám-àn-ān	1sN
ō,	ɲóm	ɲōōm-ón	ō,	kóóm-èn	kóóm-èn-ōn	2sN
ū =			ū =			
ē	ɲám-ɖá	ɲāām-án-ɖá	é	káám-àn	káám-àn-ān	3sN
ā	ɲám-ɖā	ɲāām-án-ɖā	āggá	káám-àn	káám-àn-ān	1pN
ō,	ɲóm-ɖō	ɲōōm-ón-ɖō	ōggó,	kóóm-èn	kóóm-èn-ōn	2pN
ū =			ūggú =			
ē	ɲám-ɖà	ɲāām-án-ɖà	ēggà	káám-àn	káám-àn-àn	3pN

In (58), third singular completive forms and third singular antipassive completive forms with suffix *-An-sA* are shown with various root-final segments. As in continuous forms, root-final *b, ʃ* are intervocalically weakened to approximants {P1a} and *g* is elided {P2} in (a-c). The antipassive and completive suffix takes the round feature of the root.

(58) **Antipassive completive -*An-sA***

	Root	COMP 3sN	ANTIP COMP 3sN	
(a)	/ab/ L	àð-sᵑ	àw-ān-sá	‘sit’
(b)	/kaʝ/ H	káj-já	káy-ān-sá	‘bring’
(c)	/cig/ M	cīg-sᵑ	cī.-ón-sᵑ	‘wear’
(d)	/cuɖ/ M	cūs-sú	cūɖ-ún-sú	‘climb’
(e)	/lɔf/ L	lɔf-sᵑ	lɔf-ᵑn-sᵑ	‘do magic’
(f)	/las/ M	lās-sá	lās-ān-sá	‘roll-up’
(g)	/nam/ M	nām-sá	nām-ān-sá	‘break’
(h)	/gɔn/ L	gᵑs-sᵑ	gᵑn-ᵑn-sᵑ	‘grab’
(i)	/gup/ L	gùp-sū	gùp-ūn-sú	‘agree’
(j)	/mal/ M	māl-ɖá	māl-ān-sá	‘gather’
(k)	/wɛr/ M	wēr-sá	wēr-ān-sá	‘watch’
(l)	/naw/ H	náɔ-sᵑ	náw-ān-sá	‘request’
(m)	/kɔy/ H	kóé-sᵑ	kóy-ᵑn-sᵑ	‘cook’
(n)	/fɛð/ H	féé-sá	féð-ān-sá	‘release’
(o)	/pa/ M	pā-sá	pā.-ān-sá	‘guard’

9.10.2 Antipassive tonal morphology

The antipassive suffix *-An* has no underlying tone. However, three root tone melodies change in antipassive forms, as shown by table 43.

Table 43: Antipassive tone changes

Root tone melody	Antipassive root tone melody
H	HM
M	MH
L	LH
HL, HM, ML, MH	no change

Since the antipassive suffix *-An* has no underlying tone, the second tone of the root tone melody is delinked and reassigned to the antipassive suffix in accordance with {M6} in 3.4.1. As in all third singular finite verbs, High tone is assigned to the final

(59) **Antipassive suffix *-An* on third singular completive verbs**

	Root	3sN	ANTIP	3SN	
	tone	COMP	tone	ANTIP COMP	
(a)	H	fír-sᵑ	HM	fír-ᵑn-sᵑ	‘smell’
(b)	M	cᵑr-sᵑ	MH	cᵑr-ón-sᵑ	‘help’
©	L	ɖùr-sū	LH	ɖùr-ūn-sú	‘bury’
(d)	HL	pâr-sᵑ	HL	pâr-ᵑn-sᵑ	‘attach’
(e)	HM	bél-ɖá	HM	bél-ān-sá	‘name’
(f)	ML	bùp-sū	ML	bùp-ɖ-ūn-sú	‘make-big’
(g)	MH	kᵑs-sᵑ	MH	kᵑð-ón-sᵑ	‘strike’

attaches to form other causative verb forms.

Table 44: Causative suffix

Completives	-s ⁺ A
Other verb forms	-ɖ ⁺ A

The list of (61) compares the un-derived main verb form and derived causative form of the roots /*maɾ*/ ‘buy/sell’ and /*tɪr*/ ‘die/kill’. In each verb, the main form differs from the causative form by tone, [ATR] quality, or the suffix -*ɖ*⁺A.

(61) **Causative ‘kill’ and ‘sell’ forms compared with non-causative forms ‘die’ and ‘buy’**

Verb form	/māār/	/mōr-ɖ/	/tɪr/	/tɪr-ɖ/
	‘buy’	‘sell’	‘die’	‘kill’
INF	māār-r	mōr-ɖ	tɪr-r	tɪr-ɖ
COMP.3sN	máár-sá	mōr-só	tɪr-só	tɪr-só
SBJV.1sN	māār	mōr-ɖō	tɪr	tɪr-ɖō
SBJV.3sN	máár-ɖá	mōr-ɖó	tɪr-ɖó	tɪr-ɖó
IMP	māār	mōr-ɖó	tɪr	tɪr-ɖó
IMP.PL	móór-ɖō	mōr-ɖō	tɪr-ɖō	tɪr-ɖō
INCP.3sN	māār	mōr-ɖó	tɪr	tɪr-ɖó
CONT.P.3sN	māār-án	mōr-ɖ-ón	tɪr-ón	tɪr-ɖ-ón
ANTIP-COMP.3sN	māār-án-sá	mōr-ɖ-ón-só	tɪr-ón-só	tɪr-ɖ-ón-só

The vowel of the causative suffix is elided when followed by the vowel-initial continuous suffix, in accordance with the vowel elision rule {M1} in 3.1.

In (62), causative completive and incomplete paradigms are compared with non-causative forms, and in (63), causative subjunctive and continuous non-past forms are compared. All person forms of causative subjunctive verbs have the same segmental form.

(62) **Causative completive and incomplete paradigms ‘buy-sell’ /māār/ ‘buy’ - /mōr-ɖ/ ‘sell’**

(a)	PRON	COMP	CAUS COMP	(b)	PRON	INCP	CAUS INCP	
	á	māār-sā	mōr-sō		ā	māār	mōr-ɖō	1sN
	ú =	mōr-sō	mōr-sō		ū =	mōr	mōr-ɖō	2sN
	ē	māār-sá	mōr-só		é	māār	mōr-ɖó	3sN
	āgg	māār-sā	mōr-sō		āggá	māār	mōr-ɖō	1pN
	ūgg =	mōr-sō	mōr-sō		ūggú =	mōr	mōr-ɖō	2pN
	ēggà	māār-sà	mōr-sò		ēggà	māār	mōr-ɖò	3pN

The causative suffixes $-s^+A$, $-d^+A$ have no underlying tone. However, four root tone melodies change in causative forms, as shown by table 45.

After root tone changes, tone assignment in causative verbs is the same as for other verb stems with those melodies. Third singular High tone assigned to the final syllable becomes Mid following Low {M9} in (c,d,f).

(68) **Third singular causative completive verbs**

	Root tone	COMP 3sN	CAUS tone	CAUS COMP 3sN	
(a)	H	f̄r-só	HM	f̄r-só	‘smell’
(b)	M	cōr-só	HM	cūr-sú	‘help’
(c)	L	ḍūr-sū	ML	ḍūr-sū	‘bury’
(d)	HL	p̄r-sō	HL	p̄r-sō	‘attach’
(e)	HM	bēl-ḍá	HM	bīl-ḍó	‘name’
(f)	ML	dōs-sō	ML	dū̀s-sū	‘stand’
(g)	MH	kōs-só	HM	kōs-só	‘strike’

Causative incomplete verbs in first singular, third singular, and third plural are shown in (69) for various tone melodies. Third singular High tone, third plural Low tone, and first and second person Mid tone assign to the final syllables.

(69) **Causative incomplete verbs**

	Root tone	CAUS tone	INCP CAUS 1sN	INCP CAUS 3sN	INCP CAUS 3pN	
(a)	H	HM	f̄r-ḍō	f̄r-ḍó	f̄r-ḍè	‘smell’
(b)	M	HM	cūr-ḍū	cūr-ḍú	cūr-ḍù	‘help’
(c)	L	ML	ḍūr-ḍù	ḍūr-ḍū	ḍūr-ḍù	‘bury’
(d)	HL	HL	p̄r-ḍè	p̄r-ḍō	p̄r-ḍè	‘attach’
(e)	HM	HM	bīl-ḍā	bīl-ḍá	bīl-ḍà	‘name’
(f)	ML	ML	dū̀ḍ-ḍù	dū̀ḍ-ḍū	dū̀ḍ-ḍù	‘stand’
(g)	MH	HM	kōs-sō	kōs-só	kōs-sè	‘strike’

In antipassive causative forms, the root tone becomes causative tone instead of antipassive tone. The causative two-tone melodies are spread out over two syllables when the antipassive suffix is attached to the root. In the third singular antipassive completive forms of (70), High tone attaches to the stem-final syllable.

(70) **Third singular antipassive causative completive verbs**

	Root	CAUS	CAUS	ANTIP CAUS	
	tone	tone	COMP 3SN	COMP 3SN	
(a)	H	HM	f ^h ír-só	fír-ə́n-só	'smell'
(b)	M	HM	cú́r-sú	cú-ú́n-sú	'help'
(c)	L	ML	ḍú́r-sū	ḍúr-ù́n-sū	'bury'
(d)	HL	HL	pấr-sə́	pá-ə́n-sə́	'attach'
(e)	HM	HM	bí́l-ḍó	bíl-ə́n-só	'name'
(f)	ML	ML	ḍū̀s-sū	ḍūs-ù́n-sū	'stand'
(g)	MH	HM	kấs-só	ká-ə́n-só	'strike'

10 Verb word morphology

10.1 Introduction

At this point, the morphology of verb stems has been described. We now continue with a morphological description of the verb word. Whereas verb inflectional suffixes have been shown to attach to underlying-final segments, the verbal clitics of this chapter attach to surface-final segments of inflectional suffixes or elide them.

When vowel-initial clitics are attached to vowel-final suffixes of stems such as completive forms, the stem-final vowel is elided according to the rule {M1} in 3.1. When the agentive passive clitic = \bar{E} attaches to *cɔ̄r-sɔ̄* ‘help.3sN-COMP’, the suffix-final vowel is elided (*cɔ̄r-s=ɛ̄* ‘help.3sN-COMP=PAS.A’). In suffix-less stems, clitics attach to surface-final segments. The verb nominalizer clitic =*gg* attaches to the surface-final segments of the incomplete form *bāā* ‘throw’ rather than to the underlying segments /*ba/*, and thus surfaces with a long vowel (*bāā=gg* ‘throw=PL’).

Verb word tonal morphology is similar to verb stem tonal morphology, but with some differences. As shown in chapter 9 on stem morphology, subject person tone is added to stem-final syllables: Mid tone on first and second person verbs, High tone on third singular verbs, and Low tone on third plural verbs.

(1) Subject person tone on completive stems

	Root tone	COMP 1sN	COMP 3sN	COMP 3pN	
(a)	H	fír-sḡ	fír-sḡ	fír-sḡ	‘smell’
(b)	M	cḡr-sḡ	cḡr-sḡ	cḡr-sḡ	‘help’
(c)	L	ḡr-sḡ	ḡr-sḡ	ḡr-sḡ	‘bury’

In that verb stem tone assignment is the point of departure for verb word tone assignment, subject person tone is commonly spread or delinked and reattached to clitics with no underlying tone {M5-6}. However, when clitics with underlying tone are added, subject person tone generally does not surface or cause alternations.

In (2), third singular =*E*, = \bar{E} and second plural =*OOggÓ*, = $\bar{O}Ogg\bar{O}$ object clitics are attached to first singular, third singular, and third plural subject completive verbs. The tone of each clitic allomorph is different depending on the subject person verb form to which it is attached. Thus, the clitic allomorphs are listed in parentheses next to each form. The object clitics attached to first singular and third plural verbs have no underlying tone on initial vowels. Thus, they are assigned the subject person tone from the elided completive suffix vowel. The initial vowels of the clitics are assigned first singular Mid tone in (a), and are assigned third plural Low tone in (c). However, the clitics in (b) with underlying initial High tone are not assigned subject person tone.

(2) **Object clitics attached to various subject verb forms**

	‘smell-COMP’	‘smell-COMP=3sA’	‘smell-COMP=2pA’
(a) 1sN	fír-s \bar{s}	fír-s = \bar{i} (= E)	fír-s = $\bar{u}\bar{u}\bar{g}\bar{g}\bar{u}$ (= OOggÓ)
(b) 3sN	fír-s \acute{s}	fír-s = \bar{i} (= E)	fír-s = $\bar{u}\bar{u}\bar{g}\bar{g}\bar{u}$ (= ÓÖggÓ)
(c) 3pN	fír-s \grave{s}	fír-s = \bar{i} (= E)	fír-s = $\bar{u}\bar{u}\bar{g}\bar{g}\bar{u}$ (= OOggÓ)

In verb stem morphology, alternations are according to rules {M1-M11}. However, it is common for clitics attached to verb stems to not alternate according to these rules. The chart of (3) is given as a summary of how the rules are not applied to such clitics. Although not a defining aspect of clitics, non-application of rules in bound morphemes is viewed as support for the element being a clitic rather than a suffix.

(3) **Rules applying in derivational and clausal clitics**

	Clitic	Rules applying
PAS.A	= \bar{E}	{M9} applies for INCP and COMP but not for CONT.P
PAS	= $\bar{A}n\bar{A}$, = \bar{A}	{M9} does not apply
Object PRON	various	Person marker tone spreads to all clitic-initial vowels without underlying tone; {M7-9} apply in all forms except that {M9} does not apply for 3pN marked = $\hat{i}gg\grave{s}$.
Dative PRON	various	All clitics have underlying tone; No tone rules apply
IPF	various	All clitics have underlying tone; No tone rules apply
SBO1,2	various	{M7-8} apply to third singular = \bar{i} ‘when’, {M9} applies to third singular = \bar{E} and second plural = \bar{u} ‘if’; for other clitics, no tone rules apply
PF	= $\bar{A}r$, - $\bar{C}ar$	Person marker tone is assigned to the bound morphemes; {M7-9} apply
RDM	= \bar{E}	{M9} applies; {M1} does not apply in past continuous
VN PL	= Agg, = EEgg, = AAagg	{M5-6} apply after root tone changes

10.2 **Agented passive clitic**

The verbal clitic = \bar{E} , = $\bar{E}\bar{E}$ indicates a third person agent (or experiencer) encoded post-verbally in a prepositional phrase or in genitive case. The clitic agrees in number with the encoded agent when in genitive case but not when in a prepositional phrase. The clitic is called an ‘agented passive (PAS.A)’ marker in this thesis. It is commonly used when patients or themes are in focus, being pre-verbal. In agented passive clauses, an explicit agent is required and the encoding of the agent is required to be post-verbal. Further, the agent is marked as a non-argument,

demoted to a prepositional phrase as in (a) or in genitive case as in (b), and thus no longer the syntactic subject. The clauses of (c-d) have singular and plural agents encoded in post-verbal positions, where the clitics = \tilde{E} , = $\tilde{E}\tilde{E}$ agree in number with the agent. However, the clitic = \tilde{E} of (4a) does not agree in number with the plural agent *káéggà* ‘witchdoctor’ in the prepositional phrase.

(4) **Agented passive clitic examples**

- (a) *gààr cúó . . . nām-án = \tilde{E} é káé-gg = à*
 pork sweet /nam/eat-CONT.P=PAS.A by witchdoctor-PL=DEF
 ‘Sweet pork . . . was being eaten by witchdoctors.’
- (b) *nāms náo-s = \tilde{E} āggāàr*
 food /naw/need-COMP=PAS.A hunter.GEN
 ‘Food is needed by the hunter.’
- (c) *gùlḍūn nām-s = \tilde{E} jên (d) gùlḍūn nām-s = $\tilde{E}\tilde{E}$ jógḍ*
 branch break- person. branch break- people.GEN
 COMP=PAS.A GEN COMP=PAS.A
 ‘The branch was broken by the person.’ ‘The branch was broken by the people.’

In agented passive clauses, the semantic patient or theme, encoded as a noun in (5a) or pronoun as in (b), is pre-verbal. The semantic patient or theme is encoded as the syntactic subject, evidenced by the pronoun taking the same form as the third person subject pronoun (of active verbs) which can be short or long.

(5) **Pre-verbal third singular themes**

- (a) *mīi = n gàḍ-s = \tilde{E} jên (b) \tilde{E} ($\tilde{E}n$) gàḍ-s = \tilde{E} jên*
 goat = DEF give- person. 3sN give- person.
 COMP = PAS.A GEN COMP = PAS.A GEN
 ‘The goat was given by the person.’ ‘It (goat) was given by the person.’

The clitic is only attested with transitive verbs, and can be used when the clause has no patient or theme, as in the antipassive clause of (6b). It is not used in agentless passive clauses where the syntactic subject (patient) follows the verb, as does *ḥḥn* ‘cow’ in (d).

- (6a) *jên nām-án-sá (b) nām-án-s = \tilde{E} jên*
 person break-ANTIP-COMP break-ANTIP-COMP=PAS.A person.
 GEN
 ‘The person broke something.’ ‘The person broke something.’

- (c) ṭṣó = n ḍàḍ-s = **āná** (d) ḍàḍ-s = **āná** ṭṣó = n
 cow = DEF strike-COMP = PAS strike-COMP = PAS cow = DEF
 ‘The cow was struck.’ ‘The cow was struck.’

Only third person agents can be encoded post-verbally and clauses such as ‘*The person gave me.’ with a first person pre-verbal pronoun are not possible. Thus, there are only two agentive passive markers. In addition, only third singular patients or themes are possible in agentive passive clauses and not clauses such as ‘*I am needed by the hunter.’ Agentive passive clitics are also discussed in the section on verbal valency in 14.5.1.

Table 46: Agentive passive clitic

Third singular subject	= \bar{E}
Third plural subject	= $\bar{E}\bar{E}$

10.2.1 Agentive passive segmental morphology

Agentive passive clitics are attached to verb stems. When the root is stem-final, such as in incomplete forms, no segments are elided, even if the stem is vowel-final. In this case, the clitic is juxtaposed to the stem (*pāā. = \bar{e}* ‘guard=PAS.A’) in accordance with {M2} of 3.1. However, final vowels which are not part of the root, such as suffix-final vowels in completive and subjunctive plural forms, are elided by the initial vowel of agentive passive clitics (*cḥr-sḥ* ‘help-COMP.3sN’, *cḥr-s = \bar{e}* ‘help-COMP=PAS.A’), in accordance with {M1} of 3.1.

In (7), third singular incomplete forms with agentive passive clitic = \bar{E} are shown with various root-final segments. The clitic attaches to the surface-final segments of the incomplete form rather than to the underlying form, as seen by the long vowels in (c, h, o-p) when the clitic is juxtaposed to open syllables. In (b-c, l-m), the root-final segment can optionally surface as a vowel or an approximant.

(7) Third singular agentive passive clitic = \bar{E} on incomplete forms with various root-final segments

	Root	INCP 3sN	PAS.A INCP 3sN	
(a)	/ab/ L	àḍ	àḍ. = \bar{e} , àw = \bar{e}	‘sit’
(b)	/kaʃ/ H	káé	káé. = \bar{e} , káy = \bar{e}	‘bring’
(c)	/cig/ M	cī	cī. = \bar{e}	‘wear’
(d)	/cuḍ/ M	cūḍ	cūḍ = \bar{e}	‘climb’
(e)	/lɔf/ L	lḥf	lḥf = \bar{e}	‘do magic’
(f)	/las/ M	lās	lās = \bar{e}	‘roll-up’
(g)	/nam/ M	nām	nām = \bar{e}	‘break’
(h)	/gɔn/ L	gḍn, gḍḍ	gḍn = \bar{e} , gḍḍ. = \bar{e}	‘grab’

Root	INCP 3sN	PAS.A INCP 3sN
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(i)	/gʊŋ/ L	gũŋ	gũŋ = ǐ	‘agree’
(j)	/mal/ M	māl	māl = ɛ̃	‘gather’
(k)	/wɛr/ M	wɛr	wɛr = ɛ̃	‘watch’
(l)	/ŋaw/ H	ŋáǎ-(n)	ŋáw = ɛ̃, ŋáǎ-n = ɛ̃	‘request’
(m)	/kɔy/ H	kóé-(n)	kóy = ɛ̃, kóé-n = ɛ̃	‘cook’
(n)	/fɛð/ H	fɛð-(n)	fɛð = ɛ̃, fɛð-n = ɛ̃	‘release’
(o)	/pa/ M	pāā, pā-ɖ	pāā. = ɛ̃, pā-ɖ = ɛ̃	‘guard’
(p)	/bɛɛ/ L	bèè-(n)	bèè. = ɛ̃, bèè-n = ɛ̃	‘say’

10.2.2 Agented passive tonal morphology

The agented passive clitic = \tilde{E} has underlying HM tone. In (8), it is attached to third singular completive and incompletive verbs, and in (9) it is attached to third singular continuous past verbs. In completive and incompletive forms, the initial High tone of the agented passive clitic becomes Mid following root-final Low tone {M9} as in (c,d,f). For unknown reasons, completive and incompletive forms with Mid root tone melody and agented passive clitic have MH tone on the root as in (8b), but not in continuous past forms with Mid root tone melody as in (9b).

(8) Agented passive clitic = \tilde{E} on completive and incompletive verbs

	Root tone	COMP 3sN	PAS.A COMP 3sN	INCP 3sN	PAS.A INCP 3sN	
(a)	H	fír-sǎ	fír-s = ǐ	fír	fír = ǐ	‘smell’
(b)	M	cǎr-sǎ	cǎr-s = ɛ̃	cǎr	cǎr = ɛ̃	‘help’
(c)	L	ɖùr-sũ	ɖùr-s = ǐ	ɖùr	ɖùr = ǐ	‘bury’
(d)	HL	pâr-sǎ	pâr-s = ǐ	pǎ́r	pâr = ǐ	‘attach’
(e)	HM	bél-ɖá	bél-d = ɛ̃	bé́l	bél = ɛ̃	‘name’
(f)	ML	dǎǎs-sǎ	dǎǎs-s = ɛ̃	dǎǎ́s	dǎǎs = ɛ̃	‘stand’
(g)	MH	kǎs-sǎ	kǎs-s = ǐ	kǎð	kǎð = ǐ	‘strike’

It is posited that there is no stem-final third singular High tone in the agented passive forms of (8) since the clitic-initial High tone lowers to Mid {M9} in (c,d,f).

However, it is posited that there is stem-final High tone in the continuous past forms of (9) which causes the clitic-initial High tone not to lower (not applying {M9}).

(9) Agented passive clitic = \tilde{E} on continuous past verbs

	Root tone	CONT.P 3sN	PAS.A CONT.P 3sN	
(a)	H	fír-ǎn	fír-ǎn = ǐ	‘smell’
(b)	M	cǎr-ǎn	cǎr-ǎn = ɛ̃	‘help’
(c)	L	ɖùr-ǎn	ɖùr-ǎn = ǐ	‘bury’
(d)	HL	pǎ́r-ǎn	pǎ́r-ǎn = ǐ	‘attach’
(e)	HM	bél-ǎn	bél-ǎn = ɛ̃	‘name’
(f)	ML	dǎǎs-ǎn	dǎǎs-ǎn = ɛ̃	‘stand’
(g)	MH	kǎð-ǎn	kǎð-ǎn = ǐ	‘strike’

(12) **Passive and active forms compared**

- (a) *kāsá* *ḍàḍ-sṵ* *ṭṣó = n* (b) *ḍàḍ-sṵ* *ṭṣó = n*
 ‘A boy struck the cow.’ ‘He struck the cow.’
- (c) *ṭṣó = n* *ḍàḍ-s = ānā* (d) *ṭṣó-n* *ḍàḍ-sā* *jēn*
 ‘The cow was struck.’ ‘The cow struck the person.’
- (e) *ḍàḍ-s = ānā* *ṭṣó = n*
 ‘The cow was struck.’
- (13) *fěḍ-ān = á* *jègg = ā* *ṭád*
 /fě/put-CONT.P=PAS things=DEF down
 ‘Things were being laid down.’ (Fand27-28)

Unlike agentive passive clitics, passive clitics do not distinguish number; the same passive clitics are used for both singular and plural implied agents and for singular and plural stated patients or theme (syntactic subjects). In passive clauses, only third person patients or themes are possible; clauses such as ‘*I was struck’ are not possible.

Third person dative or object pronouns can be attached to passive verbs. A dative pronoun attached to a passive verb as in (14a) refers to a beneficiary or recipient³⁵, whereas an object pronoun as in (b-d) refers to a patient or theme. The dative pronoun alone can represent a recipient as in (a) and the object pronoun alone can represent a patient, or the pronouns along with a noun reference can represent these roles as in (b-c). In 5.3, it was mentioned that subjects of active clauses can include both a noun and pronoun reference in the same clause, the pronoun added for emphasis such as for switch reference from a different participant. Syntactic subjects (recipients, patients) of passive clauses can also include both a noun and pronoun reference for emphasis, such as for switch reference in (b) and salience in (c). The *kāsā-gg* ‘boys’ of (c) is salient in that the theme of the hortatory text is tying (or training) boys in the customs appropriate for manhood.

(14) **Passives with dative and object pronouns**

- (a) *gəf-ān = ũggəŋ* *wārā* *mān* *é gārā* *ḍāf-ān = á* *ṭálḍ = nē*.
 given = them paper(Ar) certain GP when collect tax = SBO
 /gəf/-PAS = 3pD /ḍāf/-CONT.N = PAS
 ‘They were given a receipt when the tax money was collected.’ (Fand7)

³⁵ The dative pronoun attached to passive verbs implies that dative nouns can have the role of beneficiary or recipient in passive clauses, such as in *jṣgg = ũn gəf-ān wārā* ‘The people were given paper (people=DAT give=PAS paper)’. Because of limited time, no such clauses were elicited, but presumably such clauses are possible in Gaahmg.

- (b) gól fónḍi bāg-s = **ān** = **ēn**³⁶ líj-ɟ = ĩ é kōrṭūūm ɿè.
 just Fandi caught-him arrived to Khartoum here
 /bāg/-COMP = PAS = 3sA /léj/-COMP = IPF.3sN
 ‘Fandi was captured and brought here to Khartoum.’ (Fand6)
- (c) bīi kāsā-gg tíú-ɖ = **ān** = **ūggò** lōŋ páɖ
 let boy-PL to.be.tied = they until always
 /bīj/IMP /tīf/-SBJV = PAS = 3pA
 ‘Let boys forever and always be tied.’ (Tifa13)

The clitic =**ĀnĀ** attaches to stems with vowel-final suffixes such as subjunctive and completive forms and the clitic =**Ā** attaches to stems with consonant-final suffixes such as continuous forms or to suffix-less stems such as incomplete forms. Passives are also discussed in 14.5.3.

Table 47: Passive clitics

Stems with vowel-final suffixes	= ĀnĀ
Stems with consonant-final suffixes, Suffix-less stems	= Ā

10.3.1 Passive segmental morphology

In (15), incomplete forms with passive clitic =**Ā** are shown with various root-final segments. As with agentive passive clitics, passive clitics attach to the surface-final segments of incomplete forms rather than to underlying segments.

(15) Passive incomplete verbs

UR	INCP 3sN	PAS INCP	
(a) /ɿab/ H	ɿáó	ɿáó. = á, ɿáw = á	‘add’
(b) /kaɿ/ H	káé	káé. = á, káy = á	‘bring’
(c) /cig/ M	cīi	cíi. = á	‘wear’
(d) /cuɖ/ M	cūɖ	cúɖ = ó	‘climb’
(e) /tíf/ M	tīf	tíf = ó	‘tie’
(f) /las/ M	lās	lás = á	‘roll-up’
(g) /ɲam/ M	ɲām	ɲám = á	‘break’
(h) /gɔn/ L	gɔn, gòḍ	gɔn = á	‘grab’
(i) /gɯŋ/ L	gūŋ	gùŋ = ó	‘agree’

³⁶ The third singular pronoun =**ēn** differs from the object pronoun by an added *n*, which may be present in (b) to help distinguish the pronoun from the passive clitic alone =**ānā** which also has a final vowel. For further discussion about optional *n* on object pronouns, see 10.4.1. Or, the pronoun =**ēn** may be the long subject pronoun **ēēn** attached word-finally instead of preceding the verb as in active clauses.

	UR	INCP 3sN	PAS INCP	
(j)	/mal/ M	māl	mál = á	‘gather’
(k)	/wɛr/ M	wēr	wér = á	‘watch’
(l)	/ɲaw/ H	ɲáɔ-(n)	ɲáɔ. = á, ɲáɔ-n = á	‘request’
(m)	/kɔy/ H	kóé-(n)	kóé. = á, kóé-n = á	‘cook’
(n)	/fɛð/ H	fěð-(n)	fěð = á	‘release’
(o)	/pa/ M	pāā, pā-ɖ	páá. = á, pá-ɖ = á	‘guard’
(p)	/bɛɛ/ L	běē-(n)	běē. = á, běē-n = á	‘say’

Antipassive passive clauses are used to indicate an implied agent and unknown object.

- (16) ɲām-án-s = ānā
 break-ANTIP-COMP=PAS
 ‘Something was broken.’

In (17), antipassive passive complete and incomplete forms are shown.

(17) **Antipassive passive complete and incomplete forms**

Root	COMP	COMP ANTIP	INCP PAS	INCP ANTIP		
	PAS	PAS		PAS		
(a)	/kɔm/ H	kóm-s = ānā	kóm-ɔn-s = ānā	kóm = á	kóm-ɔn = á	‘chop’
(b)	/war/ H	wár-s = ānā	wár-ān-s = ānā	wár = á	wár-ān = á	‘take’
	Root- COMP =	Root-ANTIP- COMP =	Root = PAS	Root-ANTIP = PAS		

Causative passive clauses are used to indicate an implied, unstated agent of a causative verb.

- (18) gùlɖūn ɲām-s = ānā jēn
 branch break.CAUS-COMP=PAS person
 ‘The person was made to break the branch.’

In (19), causative passive incomplete, complete, and continuous past forms are shown. The vowel of the causative suffix *-ɖA* is elided in the incomplete and continuous forms, and the causative complete suffix *-s^ɖA* attaches in complete forms.

(19) **Causative passive completive, incomplete, and continuous past forms**

Root	CAUS INCP PAS	CAUS COMP PAS	CAUS CONT.P PAS	
(a) /kɔr/	kúr-ɖ = ɔ́	kúr-s = ɔ́nɔ́	kúr-ɖ-ɔ́n = ɔ́	‘read’
(b) /tír/	tír-ɖ = ɔ́	tír-s = ɔ́nɔ́	tír-ɖ-ɔ́n = ɔ́	‘kill’
(c) /kɔn/	kúún-ɖ = ɔ́	kúús-s = ɔ́nɔ́	kúún-ɖ-ɔ́n = ɔ́	‘sing’
	Root-CAUS =	Root-CAUS.	Root-CAUS-	
	PAS	COMP = PAS	CONT.P = PAS	

Antipassive causative passive clauses indicate an implied agent and one or more unknown non-agent arguments.

- (20) jēn ɲám-ɔ́n-s = ɔ́nɔ́
 person break.CAUS-ANTIP-COMP=PAS
 ‘The person was made to break something.’

- (21) ɲám-ɔ́n-s = ɔ́nɔ́
 /ɲām/break.CAUS-ANTIP-COMP=PAS
 ‘Someone was made to break something.’

10.3.2 Passive tonal morphology

The passive clitic =án on stems with vowel-final suffixes as in (22) has underlying M,H tone, and the passive clitic =á on consonant-final stems as in (23) has underlying High tone. Tone in these clitics does not follow the lowering rule {M9}. In (22c,d,f), passive clitic =án Mid tone does not assimilate to stem-final Low tone, thus not applying {M9}.

(22) **Passive clitic =án on completive and subjunctive verbs**

Root tone	COMP 3sN	PAS COMP	SBJV 3sN	PAS SBJV	
(a) H	fír-sɔ́	fír-s = ɔ́nɔ́	fír-rɔ́	fír-r = ɔ́nɔ́	‘smell’
(b) M	cɔ́r-sɔ́	cɔ́r-s = ɔ́nɔ́	cɔ́r-rɔ́	cɔ́r-r = ɔ́nɔ́	‘help’
(c) L	ɖùr-sū	ɖùr-s = ɔ́nɔ́	ɖùr-rū	ɖùr-r = ɔ́nɔ́	‘bury’
(d) HL	pâr-sɔ́	pâr-s = ɔ́nɔ́	pâr-rɔ́	pâr-r = ɔ́nɔ́	‘attach’
(e) HM	bél-ɖá	bél-ɖ = ɔ́nɔ́	bél-ɖá	bél-ɖ = ɔ́nɔ́	‘name’
(f) ML	bùɲ-sū	bùɲ-s = ɔ́nɔ́	bùɲ-ɖɔ́	bùɲ-ɖ = ɔ́nɔ́	‘make-big’
(g) MH	kɔ́s-sɔ́	kɔ́s-s = ɔ́nɔ́	kɔ́ɖ-ɖɔ́	kɔ́ɖ-ɖ = ɔ́nɔ́	‘strike’

In (23c,d,f), passive clitic =á High tone does not lower to Mid following stem-final Low tone, thus not applying {M9}. In passive incomplete forms, Mid root tone melody as in (22b) becomes High, as in subjunctive forms. In the continuous past forms of (23b,c), Mid tone is inserted on the first of the two bound morpheme syllables, each with High tone. In the continuous past forms with agentive passive clitic in (9b,c), Mid tone was also inserted on the first of two bound morpheme syllables with High tone.

(23) **Passive clitic =Á on incomplete and continuous past verbs**

	Root tone	INCP 3sN	PAS INCP	CONT.P 3sN	PAS CONT.P	
(a)	H	fír	fír = ́	fír-ən	fír-ən = ́	‘smell’
(b)	M	cōr	cór = á	cōr-án	cōr-án = á	‘help’
(c)	L	ḍūr	ḍūr = ́	ḍūr-ən	ḍūr-ən = ́	‘bury’
(d)	HL	pḥ́r	pḥr = ́	pḥr-ən	pḥr-ən = ́	‘attach’
(e)	HM	bé́l	bél = á	bél-án	bél-án = á	‘name’
(f)	ML	būḡn-ḍū	būḡn-ḍ = ́	būḡn-ḍ-ən	būḡn-ḍ-ən = ́	‘make-big’
(g)	MH	kḥḍ	kḥḍ = ́	kḥḍ-ən	kḥḍ-ən = ́	‘strike’

In (24), the passive clitic =ÁnÁ is attached to third singular antipassive completive verbs. In each, the antipassive two-tone melodies are spread out over the first two syllables and the Mid-High passive tone surfaces on the final two syllables.

(24) **Antipassive passive completive verbs with clitic =ÁnÁ**

	Root tone	ANTIP tone	ANTIP COMP 3SN	PAS ANTIP COMP	
(a)	H	HM	fír-ən-só	fír-ən-s = ́nó	‘smell’
(b)	M	MH	cōr-ón-só	cōr-ón-s = ́nó	‘help’
(c)	L	LH	ḍūr-ūn-sú	ḍūr-ūn-s = ́nó	‘bury’
(d)	HL	HL	pḥr-ən-sḥ	pḥr-ən-s = ́nó	‘attach’
(e)	HM	HM	bél-án-sá	bél-án-s = ́nó	‘name’
(f)	ML	ML	būḡn-ḍ-ùn-sū	būḡn-ḍ-ùn-s = ́nó	‘make-big’
(g)	MH	MH	kḥḍ-ón-só	kḥḍ-ón-s = ́nó	‘strike’

In (25), the passive clitic =ÁnÁ is attached to third singular causative completive verbs. In each, the causative two-tone melodies surface on the first syllable and the Mid-High passive tone surfaces on the final two syllables.

(25) **Causative passive verbs with clitic =ÁnÁ**

	Root tone	CAUS tone	CAUS COMP 3SN	PAS CAUS COMP	
(a)	H	HM	fír-só	fír-s = ́nó	‘smell’
(b)	M	HM	cūr-sú	cūr-s = ́nó	‘help’
(c)	L	ML	ḍūr-sū	ḍūr-s = ́nó	‘bury’
(d)	HL	HL	pḥr-sḥ	pḥr-s = ́nó	‘attach’
(e)	HM	HM	bíl-ḍá	bíl-ḍ = ́nó	‘name’
(f)	ML	ML	būḡn-sū	būḡn-s = ́nó	‘stand’
(g)	MH	HM	kḥs-só	kḥs-s = ́nó	‘strike’

In (26), the passive clitic =ÁnÁ is attached to third singular antipassive causative completive verbs. In each, the causative two-tone melodies surface on the first two syllables and the Mid-High passive tone surfaces on the final two syllables.

(26) **Antipassive causative passive completive verbs with clitic =ĀnĀ**

Root	CAUS	CAUS	CAUS ANTIP	PAS CAUS ANTIP		
tone	tone	COMP 3sN	COMP 3sN	COMP		
(a)	H	HM	f̄ír-sá	f̄ír-ə̄n-sá	f̄ír-ə̄n-s = ə̄nó	‘smell’
(b)	M	HM	c̄úr-sú	c̄úr-ū̄n-sú	c̄úr-ū̄n-s = ə̄nó	‘help’
(c)	L	ML	ḍūr-sū	ḍūr-ù̄n-sū	ḍūr-ù̄n-s = ə̄nó	‘bury’
(d)	HL	HL	p̄âr-sə̄	p̄âr-ə̄n-sə̄	p̄âr-ə̄n-s = ə̄nó	‘attach’
(e)	HM	HM	b̄íl-ḍá	b̄íl-ə̄n-sá	b̄íl-ə̄n-s = ə̄nó	‘name’
(f)	ML	ML	b̄ū̄n-sū	b̄ū̄n-ḍ-ù̄n-sū	b̄ū̄n-ḍ-ù̄n-s = ə̄nó	‘stand’
(g)	MH	HM	k̄ô̄s-sá	k̄ô̄-ə̄n-sá	k̄ô̄-ə̄n-s = ə̄nó	‘strike’

10.4 Object pronouns

Second and third person object pronouns are clitics attached to verb stems, whereas first person object pronouns are analyzed as separate morphemes since they do not undergo changes in [ATR] quality. As presented in 5.4, the unmarked object pronouns are relisted in (27). Several person object pronouns have tonal allomorphs which are discussed in the following section on object pronoun tonal morphology.

(27) **Unmarked object pronouns**

Singular person pronouns	Plural person pronouns		
a	1sA	aaggá, áaggá	1pA
= O	2sA	= OOggÓ, = ÓÓggÓ	2pA
= E, = Ê	3sA	= EEggÀ, = ÊÊggÀ	3pA

First person pronouns have back unrounded [-ATR] vowels which do not become [+ATR] regardless of the root they follow. Thus they are analyzed as separate morphemes. When first person object pronouns follow verb stems with suffixes such as the completive forms *c̄r̄-sá* ‘help-COMP’, *c̄úr-sú* ‘tie-COMP’ of (28), the stem-final vowel is elided and the tone of the verb root spreads to the object pronoun, just as if the first person object were a clitic as the other object pronouns. In 12.1, it is shown that independent body part locatives sometimes have elided vowels and tone changes similar to clitics. The first person object pronouns are no more unusual in their alternations than these body part locatives.

(28a)	ē	c̄r̄-s á	(b)	ē	c̄úr-s á
	3sN	/c̄r̄/help-COMP 1sA		3sN	/c̄úr/tie-COMP 1sA
		‘He helped me.’			‘He tied me.’

Marked third person object pronouns are [+ATR] and also have tonal allomorphs.

(29) **Marked third person object pronouns**

Singular person pronouns	Plural person pronouns		
= i, = ì, = ñgì	3sAM	= iiggà, = ìggà, = ñggà	3pAM

As mentioned in 5.4, one difference between the two sets of third object pronouns is grammatical agreement with the subordinate clause in which the noun referents are introduced. In (30a), the unmarked [-ATR] object pronoun attached to *wár-s=ɛ̃* ‘take-COMP=3sA’ refers to the noun *páré=n* ‘bag=DEF’ introduced in the subordinate ‘if’ clause, whereas in (b) the marked [+ATR] object pronoun attached to *wár=ɪ̃* ‘take.INCP=3sAM’ refers to a noun introduced by the subordinate conjunction *é gārá* ‘when’.

(30) **Third singular marked and unmarked object pronouns**

- (a) *jāā=n* *ɛ̃* *ŋāŋ-s=ɛ̃* *páré=n=é,* *á* *léɛ̃* *wár-s=ɛ̃*
 person 3sN file-COMP bag=DEF 1SN come. take-COMP
 =DEF =SBO2 =SBO INCP =3sA
 ‘If the person filed/sanded the leather bag, I will come take it.’
- (b) *é gārá* *jāā=n* *ŋāŋ-s=ɪ̃* *páré=n=é,* *á* *léɛ̃* *wár=ɪ̃*
 (GP) person /ŋān/file-COMP bag=DEF 1SN come. take.INCP
 when =DEF =SBO1 =SBO INCP =3sAM
 ‘When the person has filed the bag, I will come take it.’

As discussed in 10.2, the agented passive clitic *=Ē̃* of (31a-b) indicates a third person agent (or experiencer) encoded post-verbally in a prepositional phrase or in genitive case, and agrees in number with the subject. Post-verbal agents are in genitive case which is marked by a tone change. In such clauses, the semantic patient or theme (syntactic subject), encoded as a noun in (a) or pronoun as in (b), is pre-verbal.

(31) **Pre-verbal third singular themes**

- (a) **mī̃=n** *gàḍ-s=ɛ̃* *jɛ̃n* (b) **ɛ̃(ɛ̃n)** *gàḍ-s=ɛ̃* *jɛ̃n*
 goat=DEF give- person. 3sN give- person.
 COMP=PAS.A GEN COMP=PAS.A GEN
 ‘The goat was given by the person.’ ‘It (goat) was given by the person.’

We now compare marked and unmarked objects and syntactic subjects (semantic patients or themes) of agented passive clauses. We compare third singular and plural subjects with third singular and plural objects. Clauses which compare the grammatical structures are first shown in (32), and the resulting verb forms which compare the morphemes are shown in the chart of (33).

In each of the clauses of (32), a third singular subject is combined with a third singular object. These grammatical structures are representative of the singular and plural combinations of subjects and objects shown in the chart to follow. In (a), the subject verb form has no object pronoun, in (b) the verb has an unmarked object pronoun, and in (c) a marked object pronoun. The clause of (d) has the same meaning as those of (b-c), but the pronoun patient is in focus, being a syntactic

As shown in (33), unmarked third object pronouns segmentally agree in number with their referent; the segment *-gg-* marks the plural object (*bēl-d = ēēggà* ‘beat=3sN/3pA’, *bēl-d = ēēggà* ‘beat=3pN/3pA’). The different tonal allomorphs of the objects predictably attach to different subject forms as further described in 10.4.2. In marked third object pronouns, the segment *-gg-* marks the plural object (*bīl-d = ìggà* ‘beat=3sN/3pAM’, *bīl-d = ìggà* ‘beat=3pN/3pAM’) as well as a singular object combined with a plural subject (*bīl-d = ìggi* ‘beat=3pN/3sAM’). Again, the different tonal allomorphs of the objects predictably attach to different subject forms. Syntactic pronoun subjects of agented passive clauses have the same form as subjects of active clauses [*ē(ēn)* ‘he (3sN)’, *ēggà* ‘they (3pN)’]. They are independent and agree in number with the referent. For these pre-verbal patients or themes, the agented passive verb clitic *=Ē* marks that a singular agent comes after the verb and the suffix *=ĒĒ* marks that a plural agent comes after the verb.

10.4.1 Object pronoun segmental morphology

In (34), the third singular unmarked object clitic *=Ē* and marked clitic *=ì* are attached to incomplete verbs with various root-final segments. The clitics attach to the surface-final segments of the incomplete form rather than to the underlying segments.

(34) Third singular object clitics *=Ē, =ì* on incomplete verbs

	UR	INCP 3sN	INCP 3sN/3sA	INCP 3sN/3sAM	
(a)	/ab/ L	àḵ	àḵ. = ē, àw = ē	ḵū. = ì, ḵw = ì	‘sit’
(b)	/kaʃ/ H	káé	káé. = ē, káy = ē	káf. = ì, káy = ì	‘bring’
(c)	/cig/ M	cīī	cīī. = í	cīī. = ì	‘wear’
(d)	/cuḍ/ M	cūḍ	cūḍ = í	cūḍ = ì	‘climb’
(e)	/lof/ L	lḵf	lḵf = ē	lūf = ì	‘do magic’
(f)	/las/ M	lās	lās = ē	lās = ì	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām = ē	ɲām = ì	‘break’
(h)	/gɔn/ L	gḵn, gḵḵ	gḵn = ē, gḵḵ. = ē	gūn = ì, gūū. = ì	‘grab’
(i)	/gɔɲ/ L	gūɲ	gūɲ = í	gūɲ = ì	‘agree’
(j)	/mal/ M	māl	māl = ē	māl = ì	‘gather’
(k)	/wɛr/ M	wēr	wēr = ē	wīr = ì	‘watch’
(l)	/ɲaw/ H	ɲáḵ-(n)	ɲáḵ. = ē, ɲáw = ē	ɲáf. = ì, ɲáf = ì	‘request’
(m)	/kɔy/ H	kḵé-(n)	kḵé. = ē, kḵy = ē	kúf. = ì, kúf = ì	‘cook’
(n)	/feð/ H	féð-(n)	féð = ē, féð = nē	fīð = ì, fīð = ì	‘release’
(o)	/pa/ M	pāā, pā-d	pāā = ē, pā-d = ē	pāḵ = ì, pā-d = ì	‘guard’
(p)	/bɛɛ/ L	bèè-(n)	bèè = ē, bèè-n = ē	bīī. = ì, bīī-n = ì	‘say’

When object clitics are attached to polysyllabic, vowel-final stems, such as in the completive form *cḵr-sḵ* ‘help.3sN-COMP’, the stem suffix vowel is elided {M1} as in *cḵr-s = ē* ‘help.3sN-COMP=3sA’. When a singular person object clitic vowel is the same as the elided completive suffix vowel, the object clitic vowel can be

lengthened and *n* added so as to distinguish the two bound morphemes $c\bar{r}-s = \delta(\delta n)$ ‘help.3sN-COMP=2sA’. In (35), the first singular *a* and second singular =*O* object pronouns follow third singular completive forms with various root vowels. The segments in parentheses are optionally added to distinguish the object pronoun from the completive suffix alone.

(35) **Object pronouns *A*, =*O* on third singular completives**

UR	3sN	3sN/1sA	3sN/2sA	
/ɣer/ L	ɣèr-sā	ɣèr-s ā(ān)	ɣèr-s = ɔ̄	‘forget’
/kaam/ HL	kāām-sā	kāām-s ā(ān)	kāām-s = ɔ̄	‘work’
/cor/ M	c̄r-só	c̄r-s á	c̄r-s = ɔ̄(ɔ̄n)	‘help’
/cur/ H	cúr-sú	cúr-s á	cúr-s = ú(ún)	‘tie’

10.4.2 Object pronoun tonal morphology

Underlying tone for object pronouns is shown in table 48. For several object pronouns, there are different tonal allomorphs when attached to different subject forms. Third singular = \acute{E} , first plural $\acute{a}\acute{a}gg\acute{a}$ and second plural = $\acute{O}\acute{O}gg\acute{O}$ objects have underlying initial HM tone when attached to third singular verbs, but otherwise have no tone on the first syllable. Third plural = $\acute{E}\acute{E}gg\acute{A}$ objects have underlying initial HL tone when attached to third singular and third plural verbs, but otherwise have no tone on the first syllable. First *a* and second =*O* singular objects have no underlying tone regardless of the subject form to which they are attached. Third marked objects have underlying initial Low tone = \grave{i} , = $\grave{i}gg\grave{a}$ when attached to third singular verbs, and have underlying initial HL tone = $\acute{h}gg\acute{i}$, = $\acute{h}gg\grave{a}$ when attached to third plural verbs, but otherwise have no tone on the first syllable.

Table 48: Tone of object pronouns on subject person verb forms

	Unmarked						Marked	
	1sA	2sA	3sA	1pA	2pA	3pA	3sAM	3pAM
1sN		=O	=E		=OOgg \acute{O}	=EEgg \grave{A}	=i	=iigg \grave{a}
2sN	a		=E	aagg \acute{a}		=EEgg \grave{A}	=i	=iigg \grave{a}
3sN	a	=O	= \acute{E}	$\acute{a}\acute{a}gg\acute{a}$	= $\acute{O}\acute{O}gg\acute{O}$	= $\acute{E}\acute{E}gg\acute{A}$	= \grave{i}	= $\grave{i}gg\grave{a}$
1pN		=O	=E		=OOgg \acute{O}	=EEgg \grave{A}	=i	=iigg \grave{a}
2pN	a		=E	aagg \acute{a}		=EEgg \grave{A}	=i	=iigg \grave{a}
3pN	a	=O	=E	aagg \acute{a}	=OOgg \acute{O}	= $\acute{E}\acute{E}gg\acute{A}$	= $\acute{h}gg\acute{i}$	= $\acute{h}gg\grave{a}$

Tone assignment on object pronouns attached to incomplete, completive, and continuous forms is mostly the same for respective person forms to which the objects are attached. We now present various object pronouns with these three verb forms.

In (36), the second singular =*O*, third singular =*E*, second plural = $\acute{O}\acute{O}gg\acute{O}$, and third plural = $\acute{E}\acute{E}gg\acute{A}$ object pronouns are attached to first singular incomplete

forms with various root tone melodies. First person Mid tone is assigned to initial clitic vowels with no underlying tone {M5-6}, but assimilates to preceding Low {M9} in (c,d,f).

(36) **First singular incomplete verbs with second singular =O, third singular =E, second plural =OOggÓ, and third plural =EEggÁ object pronouns**

Root	INCP	INCP	INCP	INCP	INCP		
tone	1SN	1SN/ 2SA	1SN/ 3SA	1SN/ 2pA	1SN/ 3pA		
(a)	H	fír	fír = ū	fír = ī	fír = ūūggú	fír = ūggð	‘smell’
(b)	M	cōr	cōr = ɔ	cōr = ē	cōr = ɔɔggó	cōr = ēēggà	‘help’
(c)	L	ḍùr	ḍùr = ù	ḍùr = ì	ḍùr = ùùggū	ḍùr = ìggð	‘bury’
(d)	HL	pôr	pôr = ù	pôr = ì	pôr = ùùggū	pôr = ìggð	‘attach’
(e)	HM	bēl	bēl = ɔ	bēl = ē	bēl = ɔɔggó	bēl = ēēggà	‘name’
(f)	ML	būŋ- ḍù	būŋ-ḍ = ù	būŋḍ = ì	būŋ-ḍ = ùùggū	būŋ-ḍ = ìggð	‘make- big’
(g)	MH	kǎð	kǎð = ū	kǎð = ī	kǎð = ūūggú	kǎð = ūggð	‘strike’

In (37), the first singular *a* [-ATR], third singular =Ē, first plural áāggá [-ATR], and third plural =ĒĒggÁ object pronouns are attached to third singular incomplete verbs. Third singular High tone is assigned to the first singular object pronoun with no underlying tone {M5-6} but becomes Mid following Low in (c,d,f) {M9}. Underlying initial High tone on the other three object pronouns also becomes Low in (c,d,f) {M9}.

(37) **Third singular incomplete verbs with first singular *a*, third singular =Ē, first plural áāggá, and third plural =ĒĒggÁ object pronouns**

Root	INCP	INCP	INCP	INCP	INCP		
tone	3sN	3SN/ 1SA	3SN/ 3SA	3SN/ 1pA	3SN/ 3pA		
(a)	H	fír	fír á	fír = ī	fír áāggá	fír = ūggð	‘smell’
(b)	M	cōr	cōr á	cōr = ē	cōr	cōr = éēggà	‘help’
(c)	L	ḍùr	ḍùr ā	ḍùr = ì	ḍùr	ḍùr = ìggð	‘bury’
(d)	HL	pó’r	pôr ā	pôr = ì	pôr	pôr = ìggð	‘attach’
(e)	HM	bé’l	bēl á	bēl = ē	bēl	bēl = éēggà	‘name’
(f)	ML	būn- ḍū	būn-ḍ ā	būn-ḍ = ī	būn-ḍ	būn-ḍ =	‘make. big’
(g)	MH	kǎð	kǎð á	kǎð = ī	kǎð	kǎð = ūggð	‘strike’

In (38), the same four object pronouns are attached to third plural incomplete verbs, in which the third singular =E and first plural *aaggá* have different tonal allomorphs with no underlying initial tone. Third plural Low tone is assigned to the initial vowels of the first three object pronouns having no underlying tone {M5-6}. The underlying initial High tone of the third plural object pronoun *ĒĒggĀ* becomes Mid following Low {M9} in (c,d,f).

(38) **Third plural incomplete verbs with first singular *a* [-ATR], third singular =E, first plural *aaggá* [-ATR], and third plural =ĒĒggĀ object pronouns**

	Root tone	INCP 3pN	INCP 3pN/ 1SA	INCP 3pN/ 3SA	INCP 3pN/ 1pA	INCP 3pN/ 3pA	
(a)	H	fír	fír à	fír = ì	fír ààggā	fír = ñggè	‘smell’
(b)	M	cōr	cōr à	cōr = è	cōr ààggā	cōr = éèggà	‘help’
(c)	L	ḍūr	ḍūr à	ḍūr = ì	ḍūr ààggā	ḍūr = ñggè	‘bury’
(d)	HL	pâr	pâr à	pâr = ì	pâr ààggā	pâr = ñggè	‘attach’
(e)	HM	bêl	bêl à	bêl = è	bêl ààggā	bêl = éèggà	‘name’
(f)	ML	bũŋ- ḍù	bũŋ-ḍ à	bũŋ-ḍ = ì	bũŋ-ḍ ààggā	bũŋ-ḍ = ñggè	‘make- big’
(g)	MH	kǎ ð	kǎ ð à	kǎ ð = ì	kǎ ð ààggā	kǎ ð = ñggè	‘strike’

Similar tone assignment is shown for the same object pronouns on first singular, third singular, and third plural complete verbs in (39-41). In (39), first person Mid

(39) **First singular complete verbs with second singular =O, third singular =E, second plural =OOggÓ, and third plural =EEggĀ object pronouns**

	Root tone	COMP 1SN	COMP 1SN/ 2SA	COMP 1SN/ 3SA	COMP 1SN/ 2pA	COMP 1SN/ 3pA	
(a)	H	fír-sō	fír- s = ũ	fír- s = ì	fír-s = ũũggú	fír-s = ñggè	‘smell’
(b)	M	cōr-sō	cōr- s = ō	cōr- s = ē	cōr-s = ōōggó	cōr- s = ēēggà	‘help’
(c)	L	ḍūr-sù	ḍūr- s = ù	ḍūr- s = ì	ḍūr-s = ùùggū	ḍūr-s = ñggè	‘bury’
(d)	HL	pâr-sò	pâr- s = ù	pâr- s = ì	pâr-s = ùùggū	pâr-s = ñggè	‘attach’
(e)	HM	bêl-ḍā	bêl- ḍ = ō	bêl- ḍ = ē	bêl-ḍ = ōōggó	bêl- ḍ = ēēggà	‘name’
(f)	ML	bũŋ-sù	bũŋ- s = ù	bũŋ- s = ì	bũŋ-s = ùùggū	bũŋ- s = ñggè	‘make- big’
(g)	MH	kǎs-sō	kǎs- s = ũ	kǎs- s = ì	kǎs-s = ũũggú	kǎs-s = ñggè	‘strike’

tone is assigned to initial object vowels with no underlying tone {M5-6}.

In (40), both third singular High tone assigned to the first singular object pronoun *a* with no underlying tone {M5-6} and underlying initial High tone on the other three object pronouns becomes Mid {M9} in (c,d,f).

(40) **Third singular completive verbs with first singular *a*, third singular = \bar{E} , first plural $\acute{a}\acute{a}gg\acute{a}$, and third plural = $\acute{E}\acute{E}gg\acute{A}$ object pronouns**

	Root tone	COMP 3sN	COMP 3SN/ 1SA	COMP 3SN/ 3SA	COMP 3SN/ 1pA	COMP 3SN/ 3pA	
(a)	H	fír-só	fír-s á	fír-s =í	fír-s áāggá	fír-s = îggè	‘smell’
(b)	M	cōr-só	cōr-s á	cōr-s =ē	cōr-s áāggá	cōr-s = éèggà	‘help’
(c)	L	ḍùr-sū	ḍùr-s ā	ḍùr-s =ī	ḍùr-s āāggá	ḍùr-s = îggè	‘bury’
(d)	HL	pâr-sō	pâr-s ā	pâr-s =ī	pâr-s āāggá	pâr-s = îggè	‘attach’
(e)	HM	bēl-ḍá	bēl-ḍ á	bēl-ḍ =ē	bēl-ḍ áāggá	bēl-ḍ = éèggà	‘name’
(f)	ML	bùḥ-sū	bùḥ-s ā	bùḥ-s =ī	bùḥ-s āāggá	bùḥ-s = îggè	‘make- big’
(g)	MH	kǎs-só	kǎs-s á	kǎs-s =í	kǎs-s áāggá	kǎs-s = îggè	‘strike’

In (41), third plural Low tone is assigned to initial vowels of the first three object pronouns having no underlying tone {M5-6}. The underlying initial High tone of the third plural object pronoun becomes Mid {M9} in (c,d,f).

(41) **Third plural completive verbs with first singular *a*, third singular =*E*, first plural *aaggá*, and third plural = $\acute{E}\acute{E}gg\acute{A}$ object pronouns**

	Root tone	COMP 3pN	COMP 3pN/ 1SA	COMP 3pN/ 3SA	COMP 3pN/ 1pA	COMP 3pN/ 3pA	
(a)	H	fír-sè	fír-s à	fír-s =ì	fír-s àāggā	fír-s = îggè	‘smell’
(b)	M	cōr-sè	cōr-s à	cōr-s =è	cōr-s àāggā	cōr-s = éèggà	‘help’
(c)	L	ḍūr-sù	ḍūr-s à	ḍūr-s =ì	ḍūr-s àāggā	ḍūr-s = îggè	‘bury’
(d)	HL	pâr-sè	pâr-s à	pâr-s =ì	pâr-s àāggā	pâr-s = îggè	‘attach’

	Root tone	COMP 3pN	COMP 3pN/ 1SA	COMP 3pN/ 3SA	COMP 3pN/ 1pA	COMP 3pN/ 3pA	
(e)	HM	bêl-ḍà	bêl-ḍ à	bêl-ḍ = è	bêl-ḍ ààggā	bêl-ḍ = èèggà	‘name’
(f)	ML	bũṅ-sù	bũṅ-s à	bũṅ-s = ì	bũṅ-s ààggā	bũṅ-s = ũggè	‘make- big’
(g)	MH	kṣs-sḍ	kṣs-s à	kṣs-s = ì	kṣs-s ààggā	kṣs-s = ũggè	‘strike’

Similar tone assignment is shown for object pronouns attached to first singular, third singular, and third plural continuous past verbs in (42-44), although with a few differences. In (42), first person Mid tone is assigned to initial object vowels with no underlying tone {M6}.

(42) **First singular continuous past verbs with third singular =E, second plural =OOggŌ, and third plural =EEggÁ object pronouns**

	Root tone	CONT.P 1SN	CONT.P 1SN/3SA	CONT.P 1SN/2pA	CONT.P 1SN/3pA	
(a)	H	fír-ṣ̄n	fír-ṣ̄n = ì	fír-ṣ̄n = ũūggú	fír-ṣ̄n = ũggè	‘smell’
(b)	M	cōr-án	cōr-án = ē	cōr-án = ððggó	cōr-án = ēēggà	‘help’
(c)	L	ḍùr-ṣ̄n	ḍùr-ṣ̄n = ì	ḍùr-ṣ̄n = ũūggú	ḍùr-ṣ̄n = ũggè	‘bury’
(d)	HL	pár-ṣ̄n	pár-ṣ̄n = ì	pár-ṣ̄n = ũūggú	pár-ṣ̄n = ũggè	‘attach’
(e)	HM	bél-á̄n	bél-á̄n = ē	bél-á̄n = ððggó	bél-á̄n = ēēggà	‘name’
(f)	ML	bũṅ-ḍ-ṣ̄n	bũṅ-ḍ-ṣ̄n = ì	bũṅ-ḍ-ṣ̄n = ũūggú	bũṅ-ḍ-ṣ̄n = ũggè	‘make- big’
(g)	MH	kṣḍ-ṣ̄n	kṣḍ-ṣ̄n = ì	kṣḍ-ṣ̄n = ũūggú	kṣḍ-ṣ̄n = ũggè	‘strike’

In (43), underlying initial High tone on the three object pronouns remains High following High tone on the continuous past suffix.

(43) **Third singular continuous past verbs with third singular =Ē, first plural áāggá, and third plural =ĒĒggÁ object pronouns**

	Root tone	CONT.P 3sN	CONT.P 3sN/3sA	CONT.P 3sN/1pA	CONT.P 3sN/3pA	
(a)	H	fír-ṣ̄n	fír-ṣ̄n = 1̄	fír-ṣ̄n áāggá	fír-ṣ̄n = ũggè	‘smell’
(b)	M	cōr-án	cōr-án = ē	cōr-án áāggá	cōr-án = éèggà	‘help’

	Root	CONT.P	CONT.P	CONT.P	CONT.P	
	tone	3sN	3SN/3SA	3SN/1pA	3SN/3pA	
(c)	L	ḍùr-ḥn	ḍùr-ḥn=ī	ḍùr-ḥn áāggá	ḍùr-ḥn=īggè	'bury'
(d)	HL	pór-ḥn	pór-ḥn=ī	pór-ḥn áāggá	pór-ḥn=īggè	'attach'
(e)	HM	bél-án	bél-án=ē	bél-án áāggá	bél-án=éèggà	'name'
(f)	ML	būḡn-ḍ-ḥn	būḡn-ḍ-ḥn=ī	būḡn-ḍ-ḥn áāggá	būḡn-ḍ-ḥn= īggè	'make- big'
(g)	MH	kḥḍ-ḥn	kḥḍ-ḥn=ī	kḥḍ-ḥn áāggá	kḥḍ-ḥn=īggè	'strike'

In (44), third plural Low tone is assigned to initial vowels of the first two object pronouns, having no underlying tone. The underlying initial High tone of the third plural object pronoun remains High following High tone on the continuous past suffix. For unknown reasons there is no stem-final third plural Low tone present in such forms or the initial High tone of the third plural object clitic is not lowered if stem-final Low tone is present {M9 does not apply}.

(44) **Third plural continuous past verbs with third singular =E, first plural *aaggá*, and third plural =ÉÈggÀ object pronouns**

	Root	CONT.P	CONT.P	CONT.P	CONT.P	
	tone	3pN	3pN/3SA	3pN/1pA	3pN/3pA	
(a)	H	fír-ḥ`n	fír-ḥn=ì	fír-ḥn àāggā	fír-ḥn=īggè	'smell'
(b)	M	cōr-án	cōr-án=è	cōr-án àāggā	cōr-án=éèggà	'help'
(c)	L	ḍùr-ḥn	ḍùr-ḥn=ì	ḍùr-ḥn àāggā	ḍùr-ḥn=īggè	'bury'
(d)	HL	pór-ḥ`n	pór-ḥn=ì	pór-ḥn àāggā	pór-ḥn=īggè	'attach'
(e)	HM	bél-á`n	bél-án=è	bél-án àāggā	bél-án=éèggà	'name'
(f)	ML	būḡn-ḍ-ḥ`n	būḡn-ḍ-ḥn=ì	būḡn-ḍ-ḥn àāggā	būḡn-ḍ-ḥn= īggè	'make- big'
(g)	MH	kḥḍ-ḥ`n	kḥḍ-ḥn=ì	kḥḍ-ḥn àāggā	kḥḍ-ḥn=īggè	'strike'

We also show marked object pronouns attached to three persons of completive forms. In (45), the third singular =i and third plural =īggè marked object pronouns are attached to first singular completive forms. Second person Mid tone is

(45) **First singular completive verbs with third singular =i and third plural =īggè marked object pronouns**

	Root	COMP	COMP	COMP	
	tone	1sN	1SN/3SAM	1SN/3pAM	
(a)	H	fír-só	fír-s=ī	fír-s=īggè	'smell'
(b)	M	cōr-só	cūr-s=ī	cūr-s=īggè	'help'
(c)	L	ḍùr-sū	ḍùr-s=ì	ḍùr-s=īggè	'bury'
(d)	HL	pâr-sō	pâr-s=ì	pâr-s=īggè	'attach'
(e)	HM	bél-ḍá	bíl-ḍ=ī	bíl-ḍ=īggè	'name'
(f)	ML	būḡn-sū	būḡn-s=ì	būḡn-s=īggè	'make-big'
(g)	MH	kḥs-só	kḥs-s=ī	kḥs-s=īggè	'strike'

assigned to initial object pronoun vowels with no underlying tone, but assimilates to preceding Low {M9} in (c,d,f).

In (46), the third singular =*ì* and third plural =*ìggə̀* object pronouns with underlying Low tone are attached to third singular completive verbs. Third singular High tone is not present on the completive suffix since Low root tone in (c) becomes Mid {M8} and the Mid of HM root tone in (e) assimilates to the object clitic Low tone {M7}.

(46) **Third singular completive verbs with third singular =*ì* and third plural =*ìggə̀* object pronouns**

	Root tone	COMP 3sN	COMP 3SN/3SAM	COMP 3SN/3pAM	
(a)	H	fír-sə́	fír-s = ì	fír-s = ìggə̀	‘smell’
(b)	M	cōr-sə́	cūr-s = ì	cūr-s = ìggə̀	‘help’
(c)	L	ḍūr-sū	ḍūr-s = ì	ḍūr-s = ìggə̀	‘bury’
(d)	HL	pâr-sō	pâr-s = ì	pâr-s = ìggə̀	‘attach’
(e)	HM	bêl-ḍá	bíl-ḍ = ì	bíl-ḍ = ìggə̀	‘name’
(f)	ML	bũŋ-sū	bũŋ-s = ì	bũŋ-s = ìggə̀	‘make-big’
(g)	MH	kǎs-sə́	kǎs-s = ì	kǎs-s = ìggə̀	‘strike’

In (47), the third singular =*ìggì* and third plural =*ìggə̀* object pronouns with underlying initial HL tone are attached to third plural completive verbs. In third singular object clitics, initial High tone becomes Mid following Low tone in (c,d,f) {M9}, but in third plural object clitics, for unknown reasons, initial High tone does not alternate {M9 is not applied}.

(47) **Third plural completive verbs with third singular =*ìggì* and third plural =*ìggə̀* object pronouns**

	Root tone	COMP 3pN	COMP 3pN/3SAM	COMP 3pN/3pAM	
(a)	H	fír-sə̀	fír-s = ìggì	fír-s = ìggə̀	‘smell’
(b)	M	cōr-sə̀	cūr-s = ìggì	cūr-s = ìggə̀	‘help’
(c)	L	ḍūr-sù	ḍūr-s = ìggì	ḍūr-s = ìggə̀	‘bury’
(d)	HL	pâr-sə̀	pâr-s = ìggì	pâr-s = ìggə̀	‘attach’
(e)	HM	bêl-ḍà	bíl-ḍ = ìggì	bíl-ḍ = ìggə̀	‘name’
(f)	ML	bũŋ-sù	bũŋ-s = ìggì	bũŋ-s = ìggə̀	‘make-big’
(g)	MH	kǎs-sə̀	kǎs-s = ìggì	kǎs-s = ìggə̀	‘strike’

10.5 Dative pronouns

As discussed in section 5.5, dative pronouns have the semantic roles of beneficiary or recipient.

- (48) j̄gg ḡōr = ó bà ós-s = ðggōn j̄egg ón-g = ì
 people Goor = DEF oh became-for.us things bad-PL = RDM
 /áð/-COMP = 1pD
 ‘The Goor tribe became our enemies (lit. to us bad things).’ (Minj6).

All dative clitics have [+ATR] quality which spreads to the verb stem. Like object pronouns, dative pronouns have tonal allomorphs for different subject person verbs to which they attach.

(49) **Dative pronouns**

Singular person pronouns		Plural person pronouns	
= ðn, = ðn	1sD	= ðggón, = ðggōn	1pD
= ùn, = ùn	2sD	= ùggún, = ùggūn	2pD
= ìn, = ìn	3sD	= ìggòn, = ìggòn	3pD

10.5.1 Dative pronoun segmental morphology

In (50), the third singular dative clitic = ìn is attached to incomplete forms with various stem-final segments. The clitic attaches to the surface-final segments of the incomplete form rather than to the underlying segments.

(50) **Third singular incomplete verbs
 with third singular dative pronoun = ìn**

	INCP 3sN	INCP 3sN/3sD	
(a) /ab/ L	àḅ	àw = ìn	‘sit’
(b) /kaʃ/ H	káé	káy = ìn	‘bring’
(c) /cig/ M	cī	cī. = ìn	‘wear’
(d) /cuḍ/ M	cūḍ	cūḍ = ìn	‘climb’
(e) /lɔf/ L	lɔf	lùf = ìn	‘do magic’
(f) /las/ M	lās	lōs = ìn	‘roll-up’
(g) /ɲam/ M	ɲām	ɲōm = ìn	‘break’
(h) /gɔn/ L	gḍn, gḍḅ	gùn = ìn, gù. = ìn	‘grab’
(i) /gɔŋ/ L	gūŋ	gùŋ = ìn	‘agree’
(j) /mal/ M	māl	mōl = ìn	‘gather’
(k) /wɛr/ M	wēr	wír = ìn	‘watch’
(l) /ɲaw/ H	ɲáś-(n)	ɲów = ìn, ɲóú-n = ìn	‘request’
(m) /kɔy/ H	kóé-(n)	kúy = ìn, kúí-n = ìn	‘cook’
(n) /fɛð/ H	féð-(n)	fíð = ìn, fíð-n = ìn	‘release’
(o) /pa/ M	pāā, pā-ḍ	pōō. = ìn, pō-ḍ = ìn	‘guard’
(p) /beɛ/ L	bèē-(n)	bì. = ìn, bì-n = ìn	‘say’

10.5.2 Dative pronoun tonal morphology

All dative pronouns have underlying tone as shown in table 49. Dative clitic tonal

allomorphs for third plural subject forms have initial LM tone. Dative clitics for all other subject person forms have initial HM tone, or in the case of the third plural dative clitic, HL tone. All dative clitics are attached to verb forms without tonal alternations.

Table 49: Tone of dative pronouns

1sN, 2sN, 3sN, 1pN, 2pN	3pN	
= ɔ̃n	= ɔ̃n	1sD
= ú̃n	= ù̃n	2sD
= ɿ̃n	= ɿ̃n	3sD
= ɔ̃ggɔ̃n	= ɔ̃ggɔ̃n	1pD
= ú̃ggú̃n	= ù̃ggú̃n	2pD
= ɿ̃ggɔ̃n	= ɿ̃ggɔ̃n	3pD

In (51), the second singular = *ú̃n*, third singular = *ɿ̃n*, second plural = *ú̃ggú̃n*, and third plural = *ɿ̃ggɔ̃n* dative pronouns are attached to first singular completive forms with various root tone melodies.

(51) **First singular completive verbs with second singular = *ú̃n*, third singular = *ɿ̃n*, second plural = *ú̃ggú̃n*, and third plural = *ɿ̃ggɔ̃n* dative pronouns**

	Root tone	COMP 1sN	COMP 1sN/ 2sD	COMP 1sN/ 3sD	COMP 1sN/ 2pD	COMP 1sN/ 3pD	
(a)	H	fír-sɔ̃	fír-s = ú̃n	fír-s = ɿ̃n	fír-s = ú̃ggú̃n	fír-s = ɿ̃ggɔ̃n	‘smell’
(b)	M	cɔ̃r-sɔ̃	cūr-s = ú̃n	cū-s = ɿ̃n	cūr-s = ú̃ggú̃n	cūr-s = ɿ̃ggɔ̃n	‘help’
(c)	L	ɖùr-sù	ɖùr-s = ú̃n	ɖùr-s = ɿ̃n	ɖùr-s = ú̃ggú̃n	ɖùr-s = ɿ̃ggɔ̃n	‘bury’
(d)	HL	pâr-sɔ̃	pâr-s = ú̃n	pâr-s = ɿ̃n	pâr-s = ú̃ggú̃n	pâr-s = ɿ̃ggɔ̃n	‘attach’
(e)	HM	bɛ̃l-ɖā	bíl-ɖ = ú̃n	bíl-ɖ = ɿ̃n	bíl-ɖ = ú̃ggú̃n	bíl-ɖ = ɿ̃ggɔ̃n	‘name’
(f)	ML	dɔ̃s-sɔ̃	dū̃s-s = ú̃n	dū̃s-s = ɿ̃n	dū̃s-s = ú̃ggú̃n	dū̃s-s = ɿ̃ggɔ̃n	‘stand’
(g)	MH	kɔ̃s-sɔ̃	kɔ̃s-s = ú̃n	kɔ̃s-s = ɿ̃n	kɔ̃s-s = ú̃ggú̃n	kɔ̃s-s = ɿ̃ggɔ̃n	‘strike’

In (52), the first singular = *ɔ̃n*, third singular = *ɿ̃n*, first plural = *ɔ̃ggɔ̃n*, and third plural = *ɿ̃ggɔ̃n* dative pronouns are attached to third singular completive forms.

(52) **Third singular completive verbs with first singular =*ɛ̃n*, third singular =*ɨ̃n*, first plural =*ɔ̃ggón*, and third plural =*ɨ̃ggèn* dative pronouns**

	Root	COMP	COMP	COMP	COMP	COMP	
	tone	3sN	3sN/ 1sD	3sN/ 3sD	3sN/ 1pD	3sN/ 3pD	
(a)	H	fír-sə́	fír-s = ɛ̃n	fír-s = ɨ̃n	fír-s =	fír-s =	‘smell’
					ɔ̃ggón	ɨ̃ggèn	
(b)	M	cōr-só	cūr-s = ɛ̃n	cū-s = ɨ̃n	cūr-s =	cūr-s =	‘help’
					ɔ̃ggón	ɨ̃ggèn	
(c)	L	ḍùr-sū	ḍùr-s = ɛ̃n	ḍùr-s = ɨ̃n	ḍùr-s =	ḍùr-s =	‘bury’
					ɔ̃ggón	ɨ̃ggèn	
(d)	HL	pâr-sə́	pâr-s = ɛ̃n	pâr-s = ɨ̃n	pâr-s =	pâr-s =	‘attach’
					ɔ̃ggón	ɨ̃ggèn	
(e)	HM	bél-ḍá	bíl-ḍ = ɛ̃n	bíl-ḍ = ɨ̃n	bíl-ḍ =	bíl-ḍ =	‘name’
					ɔ̃ggón	ɨ̃ggèn	
(f)	ML	dḍòs-sḍ	dū̀s-s = ɛ̃n	dū̀s-s = ɨ̃n	dū̀s-s =	dū̀s-s =	‘stand’
					ɔ̃ggón	ɨ̃ggèn	
(g)	MH	kḥs-só	kḥs-s = ɛ̃n	kḥs-s = ɨ̃n	kḥs-s =	kḥs-s =	‘strike’
					ɔ̃ggón	ɨ̃ggèn	

In (53), the first singular =*ə̃n*, third singular =*ɨ̃n*, first plural =*ə̃ggə̃n*, and third plural =*ɨ̃ggə̃n* dative pronouns are attached to third plural completive forms.

(53) **Third plural completive verbs with first singular =*ə̃n*, third singular =*ɨ̃n*, first plural =*ə̃ggə̃n*, and third plural =*ɨ̃ggə̃n* dative pronouns**

	Root	COMP	COMP	COMP	COMP	COMP	
	tone	3pN	3pN/ 1sD	3pN/ 3sD	3pN/ 1pD	3pN/ 3pD	
(a)	H	fír-sə̀	fír-s = ə̃n	fír-s = ɨ̃n	fír-s =	fír-s =	‘smell’
					ə̃ggə̃n	ɨ̃ggə̃n	
(b)	M	cōr-sḍ	cūr-s = ə̃n	cū-s = ɨ̃n	cūr-s =	cūr-s =	‘help’
					ə̃ggə̃n	ɨ̃ggə̃n	
(c)	L	ḍūr-sū	ḍūr-s = ə̃n	ḍūr-s = ɨ̃n	ḍūr-s =	ḍūr-s =	‘bury’
					ə̃ggə̃n	ɨ̃ggə̃n	
(d)	HL	pâr-sə̀	pâr-s = ə̃n	pâr-s = ɨ̃n	pâr-s =	pâr-s =	‘attach’
					ə̃ggə̃n	ɨ̃ggə̃n	
(e)	HM	bél-ḍà	bíl-ḍ = ə̃n	bíl-ḍ = ɨ̃n	bíl-ḍ =	bíl-ḍ =	‘name’
					ə̃ggə̃n	ɨ̃ggə̃n	
(f)	ML	dḍòs-sḍ	dū̀s-s = ə̃n	dū̀s-s = ɨ̃n	dū̀s-s =	dū̀s-s =	‘stand’
					ə̃ggə̃n	ɨ̃ggə̃n	
(g)	MH	kḥs-sḍ	kḥs-s = ə̃n	kḥs-s = ɨ̃n	kḥs-s =	kḥs-s =	‘strike’
					ə̃ggə̃n	ɨ̃ggə̃n	

10.6 Imperfect verbs

In this thesis, the term ‘perfect’ discussed in 10.8 is used for verbs with a past or present action that remains or results in the present or future. The imperfect is simply the counterpart of such verbs. Namely, imperfect verbs indicate that a past or present action does not remain or result in the present or future. It should not be confused with imperfective aspect, which in other languages indicates an ongoing process. In (54a), the subjunctive imperfect verb indicates that although the goat will drink water, he will at some time become thirsty and need to drink again. In (b), the continuous past imperfect verb indicates that at the time the narrative takes place, the Baggara had horses, but may no longer have horses at the time the narrative is told. There is similar meaning for the incompletive imperfect verbs of (c-d). In the interrogative and declarative clauses in hortatory genre of (e), the incompletive imperfect verbs are used as habituals.

(54) Imperfect examples

- (a) \bar{e} wāɣ-ɣ dūmùùn wāā-lg ā mā-ɖ = é fēgg
 3sN go-INF towards water. SBJV /mā/drink- water
 source-in SBJV = IPF.3SN
 ‘He set out for the well in order to drink water.’ (Goat2-3)
- (b) bāārg = á ṭèèðá bēl-án = èèggà m̀̀s̀̀r-èèg = ē bà
 Baggara = DEF here having-CONT.P = IPF.3pN horse-PL = SBO oh
 ‘The Baggara had horses.’ (Minj8)
- (c) ágg cúr = ɔ̣ ṭóó m̄án ṭáɖ
 1pN tie.INCP = IPF.1pN cow certain down
 ‘We tied down a buffalo over there.’ (Nye19)
- (d) wór = í g̀̀àm = ā ṭú
 /wár/bring.INCP = IPF.3sN hill.name = DEF out
 ‘He brought (the people of the) Gaam hill out.’ (Fand18)
- (e) jinná j̣gg fūūi-gg = ò wə̄in = ñggə ṭú w̄r = ñggə
 that people male-PL = DEF /wāɣ/go.INCP out /wár/marry.
 = IPF. 3pN INCP = IPF.3pN
 ‘Why do men go out to marry
- ógg = é jíín̄? jinná wə̄in = ñggə ṭú = í é k̄r̀á
 women = IPF what that /wāɣ/go.INCP = IPF.3pN out = SBO GP because
 a second wife? They go out because . . .’ (Womn8-9)

As seen by the paradigms of (55), the imperfect clitic agrees with the subject person, but allomorphs sometimes differ from one grammatical verb form to another.

does not become Mid ({M8} does not apply), and the Mid of the HM root tone melody of (e) does not become Low ({M7} does not apply).

(58) **Third singular =É and plural =ÉÈ(ggÀ) imperfect clitics on complete verbs**

	Root	COMP	IPF COMP	COMP	IPF COMP	
	tone	3sN	3SN	3pN	3pN	
(a)	H	fír-só	fír-s = í	fír-sò	fír-s = ñ(ggò)	‘smell’
(b)	M	cōr-só	cōr-s = é	cōr-sò	cōr-s = éè(ggà)	‘help’
(c)	L	ḍùr-sū	ḍùr-s = í	ḍùr-sù	ḍùr-s = ñ(ggò)	‘bury’
(d)	HL	pâr-sō	pâr-s = í	pâr-sò	pâr-s = ñ(ggò)	‘attach’
(e)	HM	bél-ḍá	bél-ḍ = é	bél-ḍà	bél-ḍ = éè(ggà)	‘name’
(f)	ML	bũṅ-sū	bũṅ-s = í	bũṅ-sù	bũṅ-s = ñ(ggò)	‘make-big’
(g)	MH	kǎs-só	kǎs-s = í	kǎs-sò	kǎs-s = ñ(ggò)	‘strike’

In (59), similar tone assignment is shown for third singular and third plural imperative suffixes on subjunctive verbs.

(59) **Third singular =É and plural =ÉÈ imperfect clitics on subjunctive verbs**

	Root	SBJV	IPF SBJV	SBJV	IPF SBJV	
	tone	3sN	3SN	3pN	3pN	
(a)	H	fír-ró	fír-r = í	fír-rò	fír-r = ñ	‘smell’
(b)	M	cōr-ró	cōr-r = é	cōr-rò	cōr-r = éè	‘help’
(c)	L	ḍùr-rū	ḍùr-r = í	ḍùr-rù	ḍùr-r = ñ	‘bury’
(d)	HL	pâr-rō	pâr-r = í	pâr-rò	pâr-r = ñ	‘attach’
(e)	HM	bél-ḍá	bél-ḍ = é	bél-ḍà	bél-ḍ = éè	‘name’
(f)	ML	bũṅ-ḍō	bũṅ-ḍ = í	bũṅ-ḍò	bũṅ-ḍ = ñ	‘make-big’
(g)	MH	kǎḍ-ḍó	kǎḍ-ḍ = í	kǎḍ-ḍò	kǎḍ-ḍ = ñ	‘strike’

In the third singular and plural incomplete imperfect verbs of (60), the initial High tone of the third singular =í and third plural =ñ(ggò) imperfect clitics does not

(60) **Third singular =í and plural =ñ(ggò) imperfect clitics on incomplete verbs**

	Root	INCP	IPF INCP	INCP	IPF INCP	
	tone	3sN	3SN	3pN	3pN	
(a)	H	fír	fír = í	f ír	fír = ñ(ggò)	‘smell’
(b)	M	cōr	cūr = í	cōr	cūr = ñggò	‘help’
(c)	L	ḍùr	ḍùr = í	ḍùr	ḍùr = ñ(ggò)	‘bury’
(d)	HL	pǎ́r	pâr = í	pâr	pâr = ñ(ggò)	‘attach’
(e)	HM	bé́l	bíl = í	bél	bíl = ñ(ggò)	‘name’
(f)	ML	bũn-ḍū	bũṅ-ḍ = í	bũṅ-ḍù	bũṅ-ḍ = ñ(ggò)	‘make-big’
(g)	MH	kǎḍ	kǎḍ = í	kǎ ḍ	kǎḍ = ñ(ggò)	‘strike’

alternate.

In (61), the third singular = \acute{E} and third plural = $\acute{E}\acute{E}$ ($gg\acute{A}$) imperfect clitics, both with underlying Low tone, are attached to continuous past verbs without alternation.

(61) **Third singular = \acute{E} and plural = $\acute{E}\acute{E}$ ($gg\acute{A}$) imperfect clitics on continuous past verbs**

	Root	CONT.P	IPF CONT.P	CONT.P	IPF CONT.P	
	tone	3sN	3sN	3pN	3pN	
(a)	H	fír-ǎn	fír-ǎn = ì	fír-ǎ n	fír-ǎn = ì(ɡɡà)	‘smell’
(b)	M	cōr-án	cōr-án = è	cōr-ân	cōr-án = èè(ɡɡà)	‘help’
(c)	L	ḍùr-ǎn	ḍùr-ǎn = ì	ḍùr-ên	ḍùr-ǎn = ì(ɡɡà)	‘bury’
(d)	HL	pór-ǎn	pór-ǎn = ì	pór-ǎ n	pór-ǎn = ì(ɡɡà)	‘attach’
(e)	HM	bél-án	bél-án = è	bél-á n	bél-án = èè(ɡɡà)	‘name’
(f)	ML	būj-ḍ-ǎn	būj-ḍ-ǎn = ì	būj-ḍ-ǎ n	būj-ḍ-ǎn = ì(ɡɡà)	‘make-big’
(g)	MH	kǎḍ-ǎn	kǎḍ-ǎn = ì	kǎḍ-ǎ n	kǎḍ-ǎn = ì(ɡɡà)	‘strike’

10.7 Subordinate verb-final clitic

In 4.1.10, 7.7, and 8.3.8, clause-final subordinate clitics were discussed. In this section, verb-final subordinate clitics are discussed, which differ in form and function from clause-final subordinate clitics. Whereas clause-final subordinate clitics mark the end of subordinate clauses, verb-final subordinate clitics mark verbs as being in a subordinate clause and in which type of subordinate clause. There are three verb-final subordinate clitics which appear with different subordinating conjunctions introducing the clause. Third person subordinate clitics are listed in table 50 and are shown in example clauses which follow. The first verb-final subordinate clitic listed is introduced by either the conjunctions ‘when’ or ‘because’.

Table 50: Subordinate clitics on completive verbs

	clause-final	verb-final		
		‘when, because’	‘if’	‘but’
	SBO	SBO1	SBO2	SBO3
3sN	= \acute{E}	= \grave{I}	= \acute{E}	= \acute{E}
3pN	= \acute{E}	= $\hat{I}gg\grave{I}$	= \acute{E}	= \acute{E}

In (62), three subordinate clauses are sentence-initial, all marked with the clause-final subordinate clitic = \acute{E} (SBO). The verb-final clitics = \grave{I} (SBO1) and = \acute{E} (SBO2) are attached to verbs in the same clause with the clause-final clitic. In (a-b), the verb-final subordinate clitic = \grave{I} (SBO1) attaches in clauses introduced with the conjunctions \acute{e} $g\grave{a}r\acute{a}$ ‘when’ or \acute{e} $k\grave{o}r\acute{a}$ ‘because’. In (c), the verb-final subordinate clitic = \acute{E} (SBO2) attaches in the conditional ‘if’ clause, not introduced by any

conjunction. In conditional ‘if’ clauses, the subject pronoun $\bar{\epsilon}$ ‘he’ is required between the noun subject and verb. The verb $w\acute{a}r = \grave{\iota}$ ‘take=3sAM’ in the result clauses of (a-b) has incompletive aspect and the verb $w\acute{a}r - s = \grave{\epsilon}$ ‘take-COMP=3sA’ in the result clause of (c) has completive aspect. In addition, the object pronoun attached to the verbs in the result clause of (a-b) is the marked [+ATR] object clitic $= \grave{\iota}$, whereas in (c) is the unmarked [-ATR] object clitic $= \grave{\epsilon}$.

(62) **Sentence-initial subordinate clauses**

- (a) $\acute{\epsilon}$ $\acute{g}\acute{a}r\acute{a}$ $j\acute{a}\acute{a} = n$ $\eta\grave{\alpha}\eta - s = \grave{\iota}$ $p\acute{a}r\acute{\epsilon} = n = \acute{\epsilon}$, \acute{a} $l\acute{\epsilon}\bar{\epsilon}$ $w\acute{a}r = \grave{\iota}$
 (GP) person / $\eta\acute{a}n$ /file-COMP bag=DEF 1SN come. take.INCP
 when =DEF =SBO1 =SBO INCP =3sAM
 ‘**When** the person has filed/sanded/rubbed the leather bag, I will come take it.’
- (b) $\acute{\epsilon}$ $k\acute{o}r\acute{a}$ $j\acute{a}\acute{a} = n$ $\eta\grave{\alpha}\eta - s = \grave{\iota}$ $p\acute{a}r\acute{\epsilon} = n = \acute{\epsilon}$, \acute{a} $l\acute{\epsilon}\bar{\epsilon}$ $w\acute{a}r = \grave{\iota}$
 GP person file-COMP bag=DEF 1SN come. take.INCP
 because =DEF =SBO1 =SBO INCP =3sAM
 ‘**Because** the person has filed the bag, I will come take it.’
- (c) $j\acute{a}\acute{a} = n$ $\bar{\epsilon}$ $\eta\grave{\alpha}\eta - s = \grave{\epsilon}$ $p\acute{a}r\acute{\epsilon} = n = \acute{\epsilon}$, \acute{a} $l\acute{\epsilon}\bar{\epsilon}$ $w\acute{a}r - s = \grave{\epsilon}$
 person 3sN file-COMP bag=DEF 1SN come. take-COMP
 =DEF =SBO2 =SBO INCP =3sA
 ‘**If** the person filed the leather bag, I will come take it.’

The clause-final subordinate clitic $= \grave{\epsilon}$ (SBO) attaches to the final word of the clause, regardless of word category, except that it does not usually attach when the clause-final element is a verb. The clause-final clitic $= \grave{\epsilon}$ (SBO) attaches in (a), but not in (b) where the verb-final ‘if’ clitic $= \grave{\epsilon}$ (SBO2) attaches to a clause-final verb.

(63) **Clause-final subordinate clitic $= \grave{\epsilon}$**

- (a) $j\acute{a}\acute{a} = n$ $\bar{\epsilon}$ $\eta\grave{\alpha}\eta - s = \grave{\epsilon}$ $p\acute{a}r\acute{\epsilon} = n$ $n\acute{a}$ $w\acute{\epsilon}d = \acute{\epsilon}\acute{\epsilon}n = \acute{\epsilon}$, \acute{a} . . .
 person 3sN file-COMP bag=DEF REL good=RDM=SBO 1SN
 =DEF =SBO2
 ‘If the person filed the leather bag which is good, I . . .’
- (b) $j\acute{a}\acute{a} = n$ $\bar{\epsilon}$ $\eta\grave{\alpha}\eta - s = \acute{\epsilon}$, \acute{a} $l\acute{\epsilon}\bar{\epsilon}$
 person=DEF 3sN file-COMP=SBO2 1SN come.INCP
 ‘If the person filed, I will come.’

However, as will be discussed in 14.7, the relative clause definite clitic $= \acute{\epsilon}$ (RDM) and clause-final subordinate clitic $= \grave{\epsilon}$ (SBO) can both be attached to verbs when clause-final in definite relative clauses. In 15.3, it will be shown that the clause-final subordinate clitic $= \acute{\epsilon}$ (SBO) attaches in interrogative clauses when interrogative pronouns are pre-verbal. In 15.3, it will also be shown that when an interrogative

pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =ɿ (SBO1) is attached to the verb.

The same distinctions are made by verb-final clitics when the subordinate clause is sentence-final as when the subordinate clause is sentence-initial.

(64) **Sentence-final subordinate clauses**

(a) á líí, é gārá jāā = n ɳǎn-s = ɿ páré = n = é
 1sN come.COMP GP when person = file-COMP = bag = DEF =
 DEF SBO1 SBO
 ‘I came **when** the person had filed the bag.’

(b) á líí, é kōrá jāā = n ɳǎn-s = ɿ páré = n = é
 1sN come.COMP GP person = file-COMP = bag = DEF =
 because DEF SBO1 SBO
 ‘I came **because** the person had filed the bag.’

(c) ā líí, jāā = n ē ɳǎn-s = ē páré = n = é
 1sN come.COMP person = DEF 3sN file-COMP = bag = DEF =
 SBO2 SBO
 ‘I will come **if** the person has filed the bag.’

As shown in (65), the same verb-final subordinate ‘when’ (SBO1) clitic agrees in person with the subject when attached to completive, subjunctive, incomplete, and continuous past verbs.

(65) **Subordinate ‘when’ paradigms on completive, subjunctive, incomplete, and continuous past verb ‘file’**

	COMP=SBO1	SBJV=SBO1	INCP=SBO1	CONT.P=SBO1	
	‘when’	‘when’	‘while’	‘when’	
á	ɳǎn-s = ē	ɳǎn = ē	ɳǎn = ē	ɳǎn-án = ē	1sN
ō	ɳǎn-s = ī	ɳǎn = ī	ɳǎn = ī	ɳǎn-ón = ī	2sN
ē	ɳǎn-s = ɿ	ɳǎn-ɖ = ɿ	ɳǎn = ɿ	ɳǎn-ón = ɿ	3sN
āgg	ɳǎn-s = ā	ɳǎn-ɖ = ā	ɳǎn = ā	ɳǎn-án = ā	1pN
ōgg	ɳǎn-s = ū	ɳǎn-ɖ = ū	ɳǎn = ū	ɳǎn-ón = ū	2pN
ēggà	ɳǎn-s = ŋggĩ	ɳǎn-ɖ = ŋggĩ	ɳǎn = ŋggĩ	ɳǎn-ón = ŋggĩ	3pN

As shown in (66), the verb-final subordinate clitic introduced by the conjunction ‘because’ is the same clitic as that introduced by the conjunction ‘when’ (SBO1).

(66) **Subordinate ‘because’ paradigm**

COMP=SBO1 ‘because’

ηājn-s = ē	1sN
ηājn-s = ī	2sN
ηājn-s = ǐ	3sN
ηājn-s = ā	1pN
ηājn-s = ū	2pN
ηājn-s = ŋggĩ	3pN
‘file’	

For the verb-final subordinate ‘if’ (SBO2) clitic, there is more variance from one grammatical verb form to another than with the subordinate ‘when’ (SBO1) clitic. As in imperfect clitics attached to incomplete forms, all subjunctive ‘if’ persons except first plural have [+ATR] clitics. In subordinate ‘if’ verbs, tone differs on subjunctive suffixes from that of other verb forms. Continuous past subordinate ‘if’ forms are like infinitive forms, in that all person forms are the same.

(67) **Subordinate ‘if’ paradigms on complete, subjunctive, incomplete, and continuous past verb ‘file’**

	COMP=SBO2 ‘if’	SBJV=SBO2 ‘if’	INCP=SBO2 ‘if’	CONT.P=SBO2 ‘if’	
āān ā	ηājn-s = ē	ηājn = é	ηājn = ǐ	ηājn = ágā	1sN
āān ā	ηājn-s = ǐ	ηājn = í	ηājn = ǐ	ηājn = ágā	2sN
ēēn ē	ηājn-s = ē	ηājn-ǔ = é	ηājn = ǐ	ηājn = ágā	3sN
āggá à	ηājn-s = ā	ηājn-ǔ = á	ηājn = ā	ηājn = ágā	1pN
ōggó ò	ηājn-s = ū	ηājn-ǔ = ú	ηājn = ū	ηājn = ágā	2pN
ēggà è	ηājn-s = ē	ηājn-ǔ = ē	ηājn = ǐ	ηājn = ágā	3pN

The subordinate ‘but’ (SBO3) clitic is similar to the subordinate ‘if’ (SBO2) clitic, but its paradigm differs from that of the ‘if’ clitic in root tone and in the third singular clitic. In subjunctive verbs, the subordinate ‘but’ clitic is the same as the subordinate ‘when’ (SBO1) clitic.

(68) **Subordinate ‘because, but’ paradigms on complete and subjunctive verbs**

COMP=SBO1 ‘because’	COMP=SBO3 ‘but’	SBJV=SBO3 ‘but’	
ηājn-s = ē	ηājn-s = ē	gàl = ē	1sN
ηājn-s = ī	ηājn-s = ǐ	gəl = ǐ	2sN
ηājn-s = ǐ	ηājn-s = é	gəl-ǔ = ǐ	3sN
ηājn-s = ā	ηājn-s = ā	gəl-ǔ = ā	1pN
ηājn-s = ū	ηājn-s = ú	gəl-ǔ = ū	2pN
ηājn-s = ŋggĩ	ηājn-s = ē	gəl-ǔ = ŋggĩ	3pN
‘file’	‘file’	‘ram’	

As with imperfect clitics, underlying tone on subordinate ‘when’ and ‘but’ clitics does not alternate. In (69), the first singular subordinate ‘when’ (SBO1) clitic = \bar{E} with underlying Mid tone and the third singular clitic = $\check{\gamma}$ with LM tone are attached to completive verbs without alternation. Mid clitic tone does not assimilate to preceding Low tone in (c,d,f) ({M9} does not apply). In third singular forms, third singular High tone is not present on the completive suffix since Low root tone in (c) becomes Mid {M8} and the M of HM root tone in (e) assimilates to the subordinate clitic initial Low tone {M7}.

(69) **First singular = \bar{E} and third singular = $\check{\gamma}$ subordinate ‘when’ (SBO1) clitic on completive verbs**

Root tone	COMP 1sN	SBO1 COMP 1SN	COMP 3sN	SBO1 COMP 3SN	
(a) H	fír-s \bar{o}	fír-s=i	fír-s \acute{o}	fír-s= $\check{\gamma}$	‘smell’
(b) M	c \bar{o} r-s \bar{o}	c \bar{o} r-s= \bar{e}	c \bar{o} r-s \acute{o}	c \bar{u} r-s= $\check{\gamma}$	‘help’
(c) L	ḍ \bar{u} r-s \bar{u}	ḍ \bar{u} r-s=i	ḍ \bar{u} r-s \bar{u}	ḍ \bar{u} r-s= $\check{\gamma}$	‘bury’
(d) HL	p \hat{a} r-s \bar{o}	p \hat{a} r-s=i	p \hat{a} r-s \bar{o}	p \hat{a} r-s= $\check{\gamma}$	‘attach’
(e) HM	b \acute{e} l-ḍ \bar{a}	b \acute{e} l-ḍ= \bar{e}	b \acute{e} l-ḍ \acute{a}	b \acute{u} l-ḍ= $\check{\gamma}$	‘name’
(f) ML	d \bar{o} s-s \bar{o}	d \bar{o} s-s= \bar{e}	d \bar{o} s-s \bar{o}	d \bar{u} s-s= $\check{\gamma}$	‘stand’
(g) MH	k \bar{s} s-s \bar{o}	k \bar{s} s-s=i	k \bar{s} s-s \acute{o}	k \bar{s} s-s= $\check{\gamma}$	‘strike’

Similar tone assignment takes place for incomplete forms with the same subordinate clitics.

(70) **First singular = \bar{E} and third singular = $\check{\gamma}$ subordinate ‘when’ (SBO1) clitic on incomplete verbs**

Root tone	INCP 1sN	SBO1 INCP 1SN	INCP 3sN	SBO1 INCP 3SN	
(a) H	f \acute{r}	fír=i	fír	fír= $\check{\gamma}$	‘smell’
(b) M	c \bar{o} r	c \bar{o} r= \bar{e}	c \bar{o} r	c \bar{u} r= $\check{\gamma}$	‘help’
(c) L	ḍ \bar{u} r	ḍ \bar{u} r=i	ḍ \bar{u} r	ḍ \bar{u} r= $\check{\gamma}$	‘bury’
(d) HL	p \hat{a} r	p \hat{a} r=i	p \acute{o} r	p \hat{a} r= $\check{\gamma}$	‘attach’
(e) HM	b \acute{e} l	b \acute{e} l= \bar{e}	b \acute{e} l	b \acute{u} l= $\check{\gamma}$	‘name’
(f) ML	d \bar{o} s	d \bar{o} s= \bar{e}	d \bar{o} s	d \bar{u} s= $\check{\gamma}$	‘make-big’
(g) MH	k \bar{s} ḍ	k \bar{s} s=i	k \bar{s} ḍ	k \bar{s} s= $\check{\gamma}$	‘strike’

In (71), the third plural subordinate ‘when’ (SBO1) clitic = $\hat{n}gg\check{\gamma}$ with HL, LM tone is attached to completive and incomplete verbs without alternation.

(71) **Third plural = $\hat{n}gg\hat{i}$ subordinate**
‘when’ (SBO1) clitic on complete and incomplete verbs

	Root	COMP	SBO1 COMP	INCP	SBO1 INCP	
	tone	3pN	3pN	3pN	3pN	
(a)	H	fír-sə̀	fír-s = $\hat{n}gg\hat{i}$	f ír	fír = $\hat{n}gg\hat{i}$	‘smell’
(b)	M	cōr-sə̀	cūr-s = $\hat{n}gg\hat{i}$	cōr	cūr = $\hat{n}gg\hat{i}$	‘help’
(c)	L	ḡūr-sù	ḡūr-s = $\hat{n}gg\hat{i}$	ḡūr	ḡūr = $\hat{n}gg\hat{i}$	‘bury’
(d)	HL	pâr-sə̀	pâr-s = $\hat{n}gg\hat{i}$	pâr	pâr = $\hat{n}gg\hat{i}$	‘attach’
(e)	HM	bêl-ḡá	bîl-ḡ = $\hat{n}gg\hat{i}$	bêl	bîl = $\hat{n}gg\hat{i}$	‘name’
(f)	ML	dṑs-sə̀	dū̀s-s = $\hat{n}gg\hat{i}$	dṑs	dū̀s = $\hat{n}gg\hat{i}$	‘make-big’
(g)	MH	kās-sə̀	kās-s = $\hat{n}gg\hat{i}$	kā̀ ò	kās = $\hat{n}gg\hat{i}$	‘strike’

In (72), the third singular subordinate ‘but’ (SBO3) clitic = \acute{E} with underlying H tone is attached to complete verbs, also without alternation.

(72) **Third singular = \acute{E} subordinate**
‘but’ (SBO3) clitic on complete verbs

	Root	COMP	SBO3 COMP	
	tone	3sN	3SN	
(a)	H	fír-sá	fír-s = í	‘smell’
(b)	M	cōr-só	cór-s = é	‘help’
(c)	L	ḡūr-sū	ḡūr-s = í	‘bury’
(d)	HL	pâr-sə̀	pâr-s = í	‘attach’
(e)	HM	bêl-ḡá	bêl-ḡ = é	‘name’
(f)	ML	dṑs-sə̀	dṑs-s = é	‘stand’
(g)	MH	kās-sá	kās-s = í	‘strike’

Unlike subordinate ‘when’ and ‘but’ clitics, in the subordinate ‘if’ (SBO2) clitic, tone does alternate according to the tone lowering rule {M9}. In (73), the third singular = \acute{E} and second plural = \acute{u} subordinate ‘if’ clitics, both with underlying HM tone, are attached to complete verbs. The clitic-initial High tone becomes Mid following Low tone in (c,d,f). Further, Mid root tone melody becomes MH as in (b), just as

(73) **Third singular = \acute{E} and second plural = \acute{u} subordinate**
‘if’ (SBO2) clitic on complete verbs

	Root	COMP	SBO2 COMP	COMP	SBO2 COMP	
	tone	3sN	3SN	2pN	2pN	
(a)	H	fír-sá	fír-s = í	fír-sə̀	fír-s = \acute{u}	‘smell’
(b)	M	cōr-só	cōr-s = é	cūr-sū	cūr-s = \acute{u}	‘help’
(c)	L	ḡūr-sū	ḡūr-s = í	ḡūr-sù	ḡūr-s = \acute{u}	‘bury’
(d)	HL	pâr-sə̀	pâr-s = í	pâr-sə̀	pâr-s = \acute{u}	‘attach’
(e)	HM	bêl-ḡá	bêl-ḡ = é	bîl-ḡə̀	bîl-ḡ = \acute{u}	‘name’
(f)	ML	dṑs-sə̀	dṑs-s = é	dū̀s-sù	dū̀s-s = \acute{u}	‘stand’
(g)	MH	kās-sá	kās-s = í	kās-sə̀	kās-s = \acute{u}	‘strike’

Mid root tone melody was shown to become MH when the agented passive clitic is attached in (8).

10.8 Perfect verbs

Perfect verbs are the counterpart of imperfect verbs. They are used for past or present actions that remain or result in the present or future. In (74a), the clitic indicates that the government did not leave after they became established in Faath area, even to the time of telling the narrative. In (b), the perfective clitic indicates that the money had already been given and should not need to be given again. In (c), the clitic, although on the noun object instead of the verb, indicates that the action of cutting remains and will not need to be done again.

(74) Perfect examples

- (a) ʔāén m̀̀rā=n líín àw-sā=r fááǎ-āŋ.
 then government = /lé/arrive. /àb/sat-COMP = PF Faath-body
 DEF INCP
 ‘Then the government (forces) arrived
 and became established in Faath area.’ (Fand16-17)
- (b) ē lā gǎf=i wá, ē gǎù-s-ŋ=r.
 3sN UNC /gǎf/give.INCP = 3sAM not 3sN /gǎf/give-COMP-IPF = PF
 ‘He would not give it (money), (since) he had already given.’ (Fand3)
- (c) ē wár-r kǎlèèǎ ā kóm-ǎ́ jǎg=ǎ=r.
 3sN took-INF (sword) SBJV cut-SBJV.3sN people = DEF = PF
 ‘He took a koleez sword to kill (hack up completely) the people.’ (Fand5)

The perfect clitic is attached to verbs in (74a-b), but to a noun in (c). The same meaning in (c) results when the clitic attaches to the verb (*kóm-ǎ́=r*) and not on the noun object (*jǎg=ǎ*). When the perfect clitic attaches to a completive imperfect verb as in (75b), the meaning can be distant past action. The difference between the completive with perfect clitic and the completive imperfect with perfect clitic is distance between event time and speech time.

(75) Perfect completive and completive imperfect verbs

- (a) á gǎǎ-sà=r COMP = PF ‘I had given.’
 (b) á gǎǎ-s-éé=r COMP-IPF = PF ‘I had given a long time ago.’

Completive, subjunctive, and completive imperfect paradigms with perfect clitic are the same as without the clitic except that completive imperfect singular person forms have lengthened vowel when the clitic is added.

(76) **Perfect verb paradigms on completive, subjunctive, and completive imperfect verbs**

COMP=PF	SBJV=PF	COMP-IPF=PF	
àw-sà = r	kóm-ā = r	gàð-s-éē = r	1sN
əw-sə = r	kúm-ā = r	gəù-s-íí = r	2sN
àw-sā = r	kóm-ḍá = r	gàðr-s-éē = r, gəù-s-î = r	3sN
əw-sà = r	kóm-ḍā = r	gàðr-s-áā = r	1pN
əw-sə = r	kúm-ḍā = r	gəù-s-úú = r	2pN
āw-sà = r	kóm-ḍà = r	gàðr-s-éé(ggà) = r	3pN
'had remained'	'had cut'	'had given'	

The perfect also occurs on incompleted, continuous, and imperatives, although with different forms of the bound morpheme. In (77a-b), the non-past continuous verb *gàf-àn* 'give-CONT.N' is contrasted with the non-past continuous perfect form with clitic =Ar. In (c-d), the simple imperative verb *bèl* 'beat' is contrasted with the imperative perfect form with the suffix -CAr. As will be shown shortly, the perfect morpheme on incompleted and imperative verbs is a suffix which attaches to underlying root-final segments, rather than a clitic which attaches to surface-final segments.

(77) **Perfect continuous non-past and imperative**

(a)	ā	gàf-àn	mī	INCP-CONT.N	'I will be giving a goat.'
(b)	ā	gàf-àn = ār	mī	INCP-CONT.N=PF	'I will give a goat (and not take it back).'
(c)		bèl	ǰó!	IMP	'Just beat!'
(d)		bèl-lār	ǰó!	IMP-PF	'Just beat completely! (so that it won't need to be beaten again).'

Perfect incompleted and non-past continuous paradigms are in given in (78).

(78) **Perfect verb paradigms on incompleted and continuous non-past verbs**

CONT.N=PF	INCP-PF	
cōr-án = ār	cúr-rēr	1sN
cūr-ón = ər	cúr-rēr	2sN
cōr-án = ár	cúr-rér	3sN
cōr-án = ār	cúr-rēr	1pN
cūr-ón = ər	cúr-rēr	2pN
cōr-án = àr	cúr-rèr	3pN
'will have helped'	'have tied'	

Perfect morphemes are listed in table 51. The incomplete and imperative perfect is a suffix attaching to the root, whereas the perfect on other forms is a clitic attaching to the stem.

Table 51: Perfective morphemes

Incomplete, imperative	-C <u>A</u> r
Continuous non-past	= <u>A</u> r
Other verb forms	=r

In (79), the perfect suffix *-CAr* is attached to incomplete verbs. The suffix-initial consonant takes on all the features of the root-final consonant and becomes the dental plosive *ɟ* when attached to vowel-final roots. The resulting geminate plosives surface as single segments. If the perfect morpheme were a clitic attaching to the surface-final segments, among other differences the short vowel of *pā-ɟár* ‘guard’ in (o) would be long.

(79) **Third singular perfect incomplete clitic *-CAr***

	UR	INCP 3sN	PF INCP 3sN	
(a)	/ab/ L	àḅ	àb-bār	‘sit’
(b)	/kaɟ/ H	káé	káɟ-jár	‘bring’
(c)	/ciɡ/ M	cīi	cīɡ-gór	‘wear’
(d)	/cuɟ/ M	cūɟ	cūɟ-ɟór	‘climb’
(e)	/lɔf/ L	lḅf	lḅf-fār	‘do magic’
(f)	/las/ M	lās	lās-sár	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām-már	‘break’
(h)	/ɡɔn/ L	ɡḅn	ɡḅn-nār	‘grab’
(i)	/ɡuɲ/ L	ɡūɲ	ɡūɲ-ɲór	‘agree’
(j)	/mal/ M	māl	māl-lár	‘gather’
(k)	/wɛr/ M	wēr	wēr-rár	‘watch’
(l)	/ɲaw/ H	ɲáḵ-(n)	ɲáw-wár	‘request’
(m)	/kɔy/ H	kḵé-(n)	kḵy-yár	‘cook’
(n)	/fɛð/ H	fḵð-(n)	fḵð-ðár	‘release’
(o)	/pa/ M	pāā	pā-ɟár	‘guard’

Perfect bound morphemes have no underlying tone and Mid, High, or Low tone is assigned to the perfect morphemes with vowels according to subject person inflection. In the third singular incomplete perfect verbs of (80), the third singular High tone assigned to the perfect suffix becomes Mid following Low tone {M9} in (c,d,f).

(82) **Incompletive relative clause paradigm ‘__ who files is good.’**

(a)	INCP.RC (Unmarked for definiteness)						(b)	INCP.RC=RDM (Definite)					
	āān	ná	ŋāŋ	á	wēđān	1sN		ŋāŋ = é			1sN		
	ōōn	ná	ŋāŋ	ú =	wíđōn	2sN		ŋāŋ = é			2sN		
	ēēn	ná	ŋāŋ	(é)	wēđán	3sN		ŋāŋ = é			3sN		
	āggá	nà	ŋāŋ	āgg	wíōggō	1pN		ŋāŋ = è			1pN		
	ōggó	nà	ŋāŋ	ōgg	wíōggō	2pN		ŋāŋ = è			2pN		
	ēggà	nà	ŋāŋ	(ēggà)	wíōggò	3pN		ŋāŋ = è			3pN		
	PRON	REL		file.	PRON	good				file.			
			INCP							INCP=RDM			

Similarly, paradigms of other verb forms in relative clauses are given in (83). Relative clause incompletive, completive, and continuous past verbs unmarked for definiteness do not have person tone marking assigned to the final syllable, but subjunctive forms do. In each of the verb forms in definite relative clauses, a definite clitic with High tone marks singular person subject and a definite clitic with Low tone marks plural person subject. Subjunctive relative clause definite verbs add a long clitic =ÉÉ, =ÈÈ, whereas other verbs add a short clitic. In past continuous relative clause forms, the definite clitic =É does not elide the continuous suffix vowel -a of ŋāŋ-ā. = é ‘file-CONT.P.RC=RDM’ and is an exception to {M1} of 3.1.

(83) **Completive, continuous, subjunctive relative clause paradigms of ‘file’**

COMP.	COMP.	CONT.P.	CONT.P.	SBJV.	SBJV.	
RC	RC=RDM	RC	RC=RDM	RC	RC=RDM	
ŋāŋ-sá	ŋāŋ-s = é	ŋāŋ-ā	ŋāŋ-ā. = é	ŋáŋā	ŋáŋ = ēé	1sN
ŋāŋ-sá	ŋāŋ-s = é	ŋāŋ-ā	ŋāŋ-ā. = é	ŋáŋā	ŋáŋ = íí	2sN
ŋāŋ-sá	ŋāŋ-s = é	ŋāŋ-ā	ŋāŋ-ā. = é	ŋáŋ-đá	ŋáŋ-đ = éé	3sN
ŋāŋ-sá	ŋāŋ-s = ê	ŋāŋ-ā	ŋāŋ-ā. = è	ŋáŋ-đā	ŋáŋ-đ = èè	1pN
ŋāŋ-sá	ŋāŋ-s = ê	ŋāŋ-ā	ŋāŋ-ā. = è	ŋáŋ-đā	ŋáŋ-đ = ìì	2pN
ŋāŋ-sá	ŋāŋ-s = ê	ŋāŋ-ā	ŋāŋ-ā. = è	ŋáŋ-đā	ŋáŋ-đ = èè	3pN

As shown in (84), the relative clause singular definite clitic =É attaches to the surface forms of (non-relative clause) incompletive forms rather than to unmarked relative clause incompletive verbs, which are infinitive forms. If the clitic were attached to infinitive forms, among other differences, the long vowel of *cīī. = í* ‘wear=RDM’ in (c) would be short and the geminate *gg* would surface.

(84) **Relative clause singular definite clitic =É on incomplete verbs with various root-final segments**

		Unmarked	Definite		
	INCP 3SN	INCP.RC 3sN	RDM INCP.RC 3sN		
		(INF)			
(a)	/ab/ L	àḵ	àb-b	àḵ. = ē, àw = ē	‘sit’
(b)	/kaʃ/ H	káé	káʃ-ʃ	káē. = é, káy = é	‘bring’
(c)	/ciɡ/ M	cīī	cīɡ-g	cīī. = í	‘wear’
(d)	/cuḍ/ M	cūḍ	cūḍ-ḍ	cūḍ = í	‘climb’
(e)	/lɔf/ L	lɔf	lɔf-f	lɔf = ē	‘do magic’
(f)	/las/ M	lās	lās-s	lās = é	‘roll-up’
(g)	/ɲam/ M	ɲām	ɲām-m	ɲām = é	‘break’
(h)	/ɡɔn/ L	ɡɔn, ɡḵḵ	ɡɔn-n	ɡɔn = ē, ɡḵḵ. = ē	‘grab’
(i)	/ɡuɲ/ L	ɡuɲ	ɡuɲ-ɲ	ɡuɲ = í	‘agree’
(j)	/mal/ M	māl	māl-l	māl = é	‘gather’
(k)	/wɛr/ M	wēr	wēr-r	wēr = é	‘watch’
(l)	/ɲaw/ H	ɲáḵ-(n)	ɲáw-w	ɲáḵ. = é, ɲáḵ-n = é	‘request’
(m)	/kɔy/ H	kḵé-(n)	kóy-y	kḵē. = é, kḵē-n = é	‘cook’
(n)	/fɛð/ H	fḵḵ-(n)	fḵḵ-ḵ	f ḵḵ = é, f ḵḵ-n = é	‘release’
(o)	/pa/ M	pāā, pāḍ	pā-ḍ	pāā = é, pā-ḍ = é	‘guard’
(p)	/bɛɛ/ L	bḵḵ-(n)	bḵḵ	bḵḵ. = ē	‘say’

In (85), third singular complete and incomplete verbs of definite and unmarked relative clauses are shown. The unmarked complete verbs have Mid tone assigned to the complete suffix which assimilates to preceding Low {M9} in (c,d,f). For unknown reasons, High tone is assigned to the complete suffix of Mid root tone melodies as in (b). Unlike complete verbs of nuclear clauses, in complete verbs of definite relative clauses, the complete suffix tone remains even though the suffix vowel is elided. The underlying High tone of the definite clitic lowers to Mid when assigned along with complete Low tone {M9} in (c,d,f). In unmarked incomplete forms, there is no evidence of Mid tone added to the root. However, Mid tone surfaces on incomplete roots with High root tone melodies as in (a) when

(85) **Relative definite marker clitic =É on third singular complete and incomplete verbs**

Root	COMP.RC	RDM COMP.RC	INCP.RC	RDM INCP.RC		
tone	3sN	3sN	3sN	3sN		
(a)	H	fīr-sḵ	fīr-s = í	fīr	f īr = í	‘smell’
(b)	M	cḵr-sḵ	cḵr-s = é	cḵr	cḵr = é	‘help’
(c)	L	ḍūr-sḵ	ḍūr-s = í	ḍūr	ḍūr = í	‘bury’
(d)	HL	pḵr-sḵ	pḵr-s = í	pḵr	pḵr = í	‘attach’
(e)	HM	bḵl-ḍā	bḵl-ḍ = é	bḵl	bḵl = é	‘name’
(f)	ML	dḵḵs-sà	dḵḵs-s = ḵ	dḵḵs	dḵḵs = ē	‘make-big’
(g)	MH	kḵs-sḵ	kḵs-s = í	kḵḵ	kḵḵ = í	‘strike’

- (c) **bāō** ǝ̄n wēđán (d) **bāō-ǝgg** ǝnǝgǝ wīǝ-ggǝ
 throwing 1sPs good.SG throwing-PL 1sPp good-PL
 ‘My throw is good.’ ‘My throws are good.’

The verbal noun is not used as such in counting as are other nouns. It is not possible to say ‘one throw’ or ‘many throws’. Rather, the countable action is communicated with the verb and the word *ǝgg* ‘place/time’ as in the phrases of (88).

- (88a) á bās-sā ǝgg ǝmán (b) á bās-sā ǝgg ǝlǝg
 1sN throw- time one 1sN throw- time many
 COMP
 ‘I threw once.’ ‘I threw many times.’

Singular verbal nouns have the same segmental form as the incomplete, although often with different tone. Plural verbal nouns are formed by attaching one of four clitics to the incomplete surface form, depending on the surface-final segment, and altering the tone.

Table 53: Plural verbal noun clitics

	VN PL clitic
Surface-final sonorant, vowel	= gg
Underlying root-final obstruents	= Agg
Underlying root-final sonorant	= Agg, = EEgg, = AAgg

As shown in (89), singular verbal nouns have the same segmental forms as the incomplete, which optionally attach the suffix *-n* to roots with root-final approximants *y*, *w* and some root-final vowels. The plural clitic =gg is attached to singular incomplete forms with surface-final sonorants or vowels. If the plural marker were attached to underlying-final segments, among other differences, the

(89) **Plural verbal noun clitic =gg**

	INF	INCP 3SN	VN SG	VN PL	
(b)	/dǝj/ L	đǝj-ǝ	đǝē	đǝē = gg	‘throw stones’
(c)	/cag/ H	cág-g	cáá	cāā = gg	‘bathe, wash’
(g)	/kǝm/ H	kǝm-m	kǝm	kǝm = g	‘cut, destroy’
(h)	/ceen/ L	cēēn-n	cēēn	cēēn = g	‘play’
(i)	/ǝǝj/ M	ǝǝj-ǝ	ǝǝj	ǝǝj = g	‘file, sand’
(j)	/bel/ L	bēl-l	bēl	bēl = g	‘hit, beat’
(k)	/ar/ M	ār-r	ār	ār = g	‘scrape’
(l)	/ǝaw/ H	ǝáw-w	ǝáǝ-(n)	ǝāǝ-(n) = g	‘request’
(m)	/kǝy/ H	kǝy-y	kǝē-(n)	kǝē-(n) = g	‘cook’
(o)	/ba/ M	bā-ǝ	bāā	bāā = gg	‘throw, hit’
(p)	/beε/ L	bēē	bēē-(n)	bēē-n = g	‘say’

long vowel of *bāā=gg* ‘throw=PL’ in (o) would be short.

The plural clitic =*Agg* is attached to root-final obstruents *ɟ*, *f*, *s* as in (90a-c), to the sonorants *ð* and *ɲ* as in (d-e), and occasionally to other sonorants as in (f-i). For unknown reasons, the segment *g* is inserted before root-final *ɟ* in plural verbal nouns such as *cūgɟ=ūg* ‘climb’ in (a).

(90) **Plural verbal noun clitic =*Agg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/cuɟ/ M	cūɟ-ɟ	cūɟ	---	cūgɟ=ūg	‘climb’
(b)	/lɔf/ L	lɔf-f	lɔf	lɔf-ð	lɔf=ðgg	‘do magic’
(c)	/las/ M	lās-s	lās	lās	lās=āgg	‘roll-up’
(d)	/kuuð/ H	kūūð-ð	kūūð	kūūð	kūūð=ūgg	‘build’
(e)	/gəɲ/ L	gəɲ-ɲ	gəɲ	gəɲ	gəɲ=àg	‘laugh’
(f)	/ber/ H	bér-r	bér	bēr	bēr=āgg	‘tell’
(g)	/bel/ M	bēl-l	bēl	bēl	bēl=āgg, bēl=g	‘have, possess’
(h)	/ɲam/ H	ɲám-m	ɲám	ɲāð-(n)	ɲám=āgg	‘want, love’
(i)	/bɔn/ L	bɔn-n	bɔn	bɔn	bɔn=ðgg	‘wait’

The verbal noun clitic =*Agg* attaches to the incompletive surface form such as *ɲám* ‘want’ instead of to the singular verbal noun surface form *ɲāð-(n)*, as evidenced by the *m* in *ɲám=āgg*.

A few plural verbal nouns with root-final sonorants attach the clitics =*AAgg* or =*EEgg*.

(91) **Plural verbal noun clitic =*AAgg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/ɲel/ H	ɲél-l	ɲél	ɲēl	ɲēl=āāg	‘know’

(92) **Plural verbal noun clitic =*EEgg***

	Root	INF	INCP 3SN	VN SG	VN PL	
(a)	/kɔr/ H	kór-r	kór	kɔr	kɔr=ēēgg	‘speak, say’
(b)	/kaam/ HL	káām-m	káām	kàðáām	kàðáām=èègg	‘work, deal’

Verbal noun clitics have no underlying tone. However, the root tone melody changes in verbal noun forms, as seen by the tone changes in table 54. Verbs with root tone melodies L, HL, and ML have ML tone melody in verbal nouns. Verbs

Table 54: Verbal noun tone changes

Root tone melody	Verbal noun tone melody
L, HL, ML	ML
all other melodies	M

with all other root tone melodies have Mid tone in verbal nouns.

In (92), the clitic =*Agg* is attached to verbal nouns with various root tone melodies. Verbal nouns have tone melodies as described in table 54. Since the clitic =*Agg* has no underlying tone, the Low tone of ML root melodies reassigns to the clitic {M6} in (d,f) and Mid tone spreads to the clitic in other forms {M5}.

(92) **Verbal noun plural clitics =*Agg*, =*gg***

	Root tone	INF	VN tone	VN SG	VN PL	
(a)	H	pál-l	M	pāl	pāl = āgg, pāl = g	‘cut’
(b)	M	bēl-l	M	bēl	bēl = āgg, bēl = g	‘possess’
(c)	L	f èl-l	ML	f èl	f èl = āgg, f èl = g	‘tell’
(d)	HL	pîr-r	ML	pîr	pîr = ðgg, pîr = g	‘deceive’
(e)	HM	bēl-l	M	bēl	bēl = āgg	‘name’
(f)	ML	dōs-s	ML	---	dōgs = ðgg	‘stand’
(g)	MH	kōð-ð	M	kōn	kōð = āgg	‘strike’

10.11 Adjectival verbs

Adjectives can be used as verbs, although not always with the same syntax or morphology as true verbs, as compared in 4.3. The long form of the subject pronoun precedes the adjectival verb instead of the short subject pronoun as in true verbs. The plural adjective suffix *-gg* and copular clitic =*A* attach to adjectival verbs of plural persons. These features mark adjectival verbs as being different than active verbs. The verbs of (93) have subject tone inflection (final Mid for second person, final High for third singular, final Low for third plural) and [+ATR] second person forms as do other verbs. However, in some adjectival verbs, person inflection is not as regular.

(93) **Adjectival verb paradigms**

(a) ‘___ am/are/is clean.’			(b) ‘___ am/are/is beautiful.’		
āān	bēr	1sN	āān	kāyāār	1sN
ōōn	bîr	2sN	ōōn	kāyōōr	2sN
ēēn	bér	3sN	ēēn	kāyáár	3sN
āggá	bér-g = ā	1pN	āggá	kāyáár-g = ā	1pN
ōggó	bîr-g = ð	2pN	ōggó	kāyōōr-g = ð	2pN
ēggà	bér-g = à	3pN	ēggà	kāyáár-g = à	3pN

Adjectival infinitive forms often surface the same as adjectives modifying singular nouns. Underlying-final geminate segments of infinitive forms surface as single segments. Many infinitive forms of adjectives such as (94e, i, j) are irregular in that they do not have a final geminate consonant but a different suffix.

(94) **Adjectival infinitive forms**

	ADJ SG	ADJ PL	INF	
(a)	bér	bér-g	bēr-r	‘clean’
(b)	gààl	gààl-g	gààl-l	‘far’
(c)	âè	âè-gg	àʃ-ʃ	‘sour’
(d)	cúú	cúú-g	cūū	‘sweet’
(e)	fāā	fān-g	fān-g	‘old’
(f)	bānḍāl	bānḍāl-g	bānḍāl-l	‘weak’
(g)	kóófār	kóófār-g	kòòfār-r	‘thin’
(h)	kāyáár	kāyáār-g	kāyáár-r	‘beautiful’
(i)	wēḍán	wíḍ-gg	wēḍá-ḍ	‘good’
(j)	lūsú	lūsú-gg	lùùs-ḍḍ	‘hot’
(k)	ḍḍmḍ	ḍḍmḍ-gg	ḍḍḍm-m	‘blind’
(l)	nāán	nāā-lgégé	nāān-n	‘young’

In (95), first and third singular and second and third plural forms of incomplete adjectival verbs are shown. The suffix *-n* is common in singular person suffixes, and the suffix *-gg* is required in all plural person suffixes. Although third singular High tone and third plural Low tone generally occur word-finally on adjectives, second person Mid tone is not as regular on second plural forms, as second plural forms of (b,c,h) have final Low tone. Further, second person [+ATR] quality is not as regular as in true verbs, as second plural forms of (b,c,g) have [-ATR] quality ({M3} is not applied). Among the adjectival verbs attested, those of (95) are the most regular in final segment alternations, tone and vowel quality. Others are even more irregular.

(95) **Incomplete person forms of adjectival verbs**

	INF	INCP 1sN	INCP 3SN	INCP 2pN	INCP 3pN	
(a)	bēr-r	bēr	bér	bír-g = ɔ̄	bér-g = à	‘clean’
(b)	gààl-l	gààl	gàāl	gààl-g = à	gààl-g = à	‘far’
(c)	àʃ-ʃ	áè-n	áè-n	áè-gg = à	áè-gg = à	‘sour’
(d)	cūū	cūū-n	cúú-n	cú-gg = ū	cú-gg = ù	‘sweet’
(e)	---	î-n	î-n	î-gg = ò	î-gg = ò	‘heavy’
(f)	fān-g	fāān	fāān	fān-g = ɔ̄	fān-g = à	‘old’
(g)	bānḍāl-l	bānḍāl	bānḍāl	bānḍāl-g = ā	bānḍāl-g = à	‘weak’
(h)	kòòfār-r	kóófār	kóófār	kúúfār-g = ò	kóófār-g = à	‘thin’
(i)	kāyáár-r	kāyáār	kāyáár	kāyáár-g = ɔ̄	kāyáár-g = à	‘beautiful’
(j)	wēḍá-ḍ	wēḍán	wēḍán	wíḍ-gg = ɔ̄	wíḍ-gg = ò	‘good’
(k)	lùùs-ḍḍ	lūsú-n	lūsú-n	lūsú-gg = ū	lūsú-gg = ù	‘hot’
(l)	ḍḍḍm-m	ḍḍḍm-ḍ-n	ḍḍḍm-ḍ-n	ḍḍḍm-gg = ɔ̄	ḍḍḍm-gg = ò	‘blind’
(m)	nāān-n	nāān	nāān	nāā-lgígíg = ɔ̄	nāā-lgégég = à	‘young’

Adjectival verbs have various grammatical forms such as the incomplete, complete, and continuous past forms of (96).

(96) **Third singular incomplete, completive and continuous past adjectival verbs**

	INF	INCP 3sN	COMP 3sN	CONT.P 3sN	
(a)	bēr-r	bér	bēr-sá	bér-án	‘clean’
(b)	gààl-l	gàāl	gààl-ḍà	gààl-ān	‘far’
(c)	àṭ-ṭ	áé-n	àṭ-jā	āy-án	‘sour’
(d)	cūū	cúú-n	cúū-n-sú	cúú-n-ón	‘sweet’
(e)	---	íí-n	ìṭ-ṭḍ	íy-ón	‘heavy’
(f)	fān-g	fāān	fān-gā-sā	fāān-án	‘old’
(g)	bānḍāl-l	bānḍāl	bānḍāl-sá	bānḍāl-án	‘weak’
(h)	kòḍfār-r	kóóf ār	kòḍfār-sā	kóófār-án	‘thin’
(i)	kāyáár-r	kāyáár	kāyáár-sá	kāyáár-án	‘beautiful’
(j)	wēnḍá-ḍ	wēḍán	wēnḍá-sá	wēḍán-án	‘good’
(k)	lùùs-ḍḍ	lūsú-n	lūsú-n-sú	lūsú-n-ón	‘hot’
(l)	ḍḍèḍm-m	ḍḍèḍmḍ-n	ḍḍèḍmḍ-sḍ	ḍḍèḍmḍ-gg-ón	‘blind’
(m)	nāān-n	nāán	nāán-sá	nāán-án	‘young’

11 Prepositions

Preposition is a lexical category including four independent prepositions and one prepositional prefix. Prepositions introduce noun phrases which function as modifiers or adjuncts of the preceding noun or verb. Four independent prepositions can have the same segmental form *ɛ* but differ in tone or grammatical marking on the prepositional phrase. The animate accompaniment preposition *è* ‘with’ has Low tone, the inanimate preposition *ē* ‘with’ has Mid tone, and the general preposition *é, í* (GP) has High tone. The general preposition has free variation in vowel quality regardless of the [ATR] quality of surrounding words. When the general preposition is used to introduce a genitive phrase, the noun following the preposition undergoes a tone change. The preposition marker prefix *ɔ-* is used for introducing phrases with initial pronouns.

Table 55: Prepositions

<i>è</i>	‘with’	Animate accompaniment preposition
<i>ē</i>	‘with’	Inanimate accompaniment preposition
<i>é, í</i>	GP; ‘to, from, in, at, by, of’	General preposition: Goal, source, time, location, instrument, or genitive
<i>ɔ-</i>	‘to, from, in, by’	Pronoun preposition marker

11.1 Animate accompaniment preposition

The preposition *è* ‘with’ having Low tone is used for introducing animate accompaniment phrases. In such phrases, the accompaniment marker clitic =*Ē* attaches to the final word of the accompaniment phrase. The accompaniment marker =*Ē* for consonant-final stems is attached to the noun *āɫɔ=ē* ‘fox’ in (1a) and to *kūūɔ=ī* ‘person.name’ in (b).

(1) **Animate accompaniment preposition *è* ‘with’**

(a) *sàlāɔ=ā è āɫɔ=ē ē bèè*
 hyena = DEF with fox = ACM 3pN said.INF
 ‘Hyena and Fox said . . .’ (Nyee16)

(b) *jāfāri = n è mōīɔ kūūɔ=ī wāj-jà é wīlòns*
 Jafari = DEF with old.man person. went GP hunting.GEN
 name = ACM
 ‘Jafari and an older man of the Kuud clan went on a hunt.’ (Jafr1)

11.2 Inanimate accompaniment preposition

The preposition *è* ‘with’ having Mid tone is used for introducing inanimate accompaniment adjunct phrases. The accompaniment marker clitic is not attached

to such phrases.

(2) **Inanimate accompaniment preposition** $\bar{\epsilon}$ ‘with’

- (a) $\bar{\epsilon}$ máà iij̄ $\bar{\epsilon}$ àn-n m̄sðr ɔ̄l
 3sN prides.INF 3sR 3sN stay-INF horse up
 ‘. . . taking pride in himself as he sits up on the horse

$\bar{\epsilon}$ páré = n é m̄j̄n̄l = ð d-éès
 with skin.bag = DEF GP /m̄j̄n̄l/devil.GEN = DEF PP-hand.3sPs
 with an animal-skin bag having demonic power in his hand.’ (Minj14-15)

- (b) ānēndá T̄él $\bar{\epsilon}$ kúnd = ú $\bar{\epsilon}$ áđ $\bar{\epsilon}$ wáēdá,
 then God 3sPs heart = DEF 3sN becomes with joy
 ‘Therefore God will be pleased
 (lit. God’s heart becomes with joy).’ (Womn17)

11.3 General preposition

The preposition $\acute{\epsilon}$, ‘to, from, in, at, by’ introduces adjunct phrases that indicate goal, time, location, or instrument/source. Goal phrases can be used along with a following locative adverb $\acute{\epsilon}$ ‘there’ as in (3a) or along with a preceding adverbial locative $\acute{\epsilon}$ *dumuun* ‘far’ as in (b). The first prepositional phrase $\acute{\epsilon}$ *nāāndá* ‘in day’ of (b) has the role of time. In (c), the prepositional phrase has the role of location,

(3) **General preposition** $\acute{\epsilon}$ *f*(GP)

- (a) ḡl f̄nd̄i b̄gs̄n = in líj̄j̄ $\acute{\epsilon}$ k̄rt̄ūm t̄è.
 just Fandi caught.by-them arrived GP Khartoum here
 ‘Fandi was captured by them and brought here to Khartoum.’ (Fand6)
- (b) á wāj-jā $\acute{\epsilon}$ nāāndá m̄n d̄m̄ùn $\acute{\epsilon}$ d̄àl
 1sN went-COMP GP day certain towards GP (valley name)
 ‘One day I went to Dal Valley.’ (Jooj1)
- (c) āgg b̄j̄ āgg ḡl-g = ɔ̄ nà dáāgg èèn $\acute{\epsilon}$ n̄ōgg
 1pN left 1pP friend-PL = DEF REL.PL two 3sN GP behind
 ‘We left our other two companions behind.’ (Thng5-6)
- (d) é d̄j̄-j̄ āāggá $\acute{\epsilon}$ m̄īd-óg f̄r̄ójj̄ wá b̄ = i
 3sN stone-INF 1pA GP stone-PL few not oh = SBO
 ‘When it pelted us with a lot of stones, . . .’ (Thng20)
- (e) ḡàr cúó . . . nām-án = $\bar{\epsilon}$ $\acute{\epsilon}$ káé-gg = à
 pork sweet /nam/eat-CONT.P=PAS.A GP witchdoctor-PL=DEF
 ‘Sweet pork . . . was being eaten by witchdoctors.’

in (d), the role of instrument, and in (e), the role of agent.

This preposition is also used in the formation of two conjunctions: *é gārā* ‘when, while (lit. by place.DEF)’, *é kārā* ‘because (lit. by word.DEF)’. Conjunction is another lexical category and discussed in 15.2. In 13.4, it will be shown that the general preposition introduces prepositional phrases used as adjuncts indicating time *é nāānd = á yān* ‘another day (lit. at day another)’.

The general preposition is also used to introduce genitive phrases which indicate possession, or close relation of certain objects or actions. In such phrases, the noun following the preposition undergoes a tone change and is the possessor of the noun preceding the preposition, or is the noun to which the preceding noun is closely related. In (4a), the *nēērēmā = n* ‘devil.GEN=DEF’ is the possessor of *nālg* ‘children’. In (b), the word preceding the genitive phrase is a verb and the genitive phrase functions as an adjunct. As discussed in 6.5, the tone of each genitive noun has Mid-Low or High-Low, regardless of the root tone.

(4) **General preposition *é*, *f*(GP)**

- (a) *ā gār-rā ā nám-dá nālg é nēērēmā = n*
 SBJV be.able- SBJV eat-SBJV. children GP /nēērēmān/
 SBJV.3sN 3sN devil.GEN = DEF
 ‘... so as to eat the nyeerma offspring.’ (Nyee10)
- (b) *ē gōms-óggō mīi = n ē nāā é fōl*
 3sN found-M.COMP goat = DEF 3sN laying.INCP GP /fōl/hole.GEN
 ‘He discovered the goat down in the well.’ (Goat10)
- (c) *càdr néé-n é sālād = à è âld è jēgg*
 tale this- GP /sālād = à/ with /âld/ with /jēg/
 DEF hyena.GEN = COP fox.GEN thing.PL.GEN
 ‘This story is about a hyena, fox, and some
- é lēēl-ēēg = à bíigg nà àn léél-éēgg = è*
 GP /léél-éēg/grass. some REL.PL stay forest-PL = RDM
 GEN-PL = COP
 wild forest animals.’ (Nyee1-2)

In (4c), there are three possessors (*sālādā* ‘hyena’, *âld* ‘fox’, *jēgg* ‘things’) of a single item (*càdr néén* ‘this tale’) introduced by the general preposition *é* (GP) with High tone and two animate accompaniment prepositions *è* ‘with’ with Low tone. There is no animate accompaniment clitic = *É* attached to the nouns *âld* ‘fox’ and *jēgg* ‘things’ possibly because the general preposition *é* (GP) with genitive use has scope over them, causing them to undergo genitive tone change. The object *lēēlēēggà* ‘grasses’ in the genitive phrase *jēgg é lēēlēēggà* ‘things of grasses’ is

11.5 Adverbs functioning as prepositions

Some adverbs of direction have the syntactic function of prepositions, introducing a noun phrase. In (7a), the adverb *ḡūmùùn* ‘towards’ introduces the noun phrase *wāālg* ‘water.source in’. Sometimes adverbs of direction introduce other adverbs of direction as in (b), where the first adverb functions as a preposition, and the second functions as a noun phrase. In both example (a) and (b), the prepositional phrase functions as an adjunct, describing the location of the action.

(7) **Adverbs of direction functioning as prepositions**

(a) \bar{e} dōs \bar{e} wāḡ **ḡūmùùn** wāāl = g
 3sN started 3sN go towards water.source = in
 ‘He set out for the well.’ (Goat2)

(b) \bar{i} gg = ó \bar{e} māl = ínō **fān** ṭād
 milk = DEF 3sN gathered = 3sD on down
 ‘Milk accumulated for him underneath.’ (Nyee24)

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) ē àn ǔfú ʒʒl dēēnē.
 3sN staying tree up only
 ‘. . . as he remained in the tree.’ (Nyee35)

In (1), ʒʒl ‘up’ is a body part locative with the same segmental form as ʒʒl ‘your head (2sPs)’. The noun ʒʒl ‘your head’ is a second person singular inherently possessed singular body part requiring a person marker vowel. In contrast, the locative ʒʒl ‘up’ is used with the third singular noun ǔfú ‘tree’, and the vowel ə 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 ʒʒl ‘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 (*ʒēn lúɖ* ‘person’s leg’) instead of following and in the genitive case (*gàdǎáé é ʒēn* ‘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 ʒʒl ‘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 *ɣ-* is attached, as discussed shortly. As to which of the three vowel-person forms the grammaticalized 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	Noun		LOC	LOC	
	SG	PL		SG	PL	
(a)	ēēlg	ìil-g	‘stomach.3P’	éélg	îilg	‘in, inside of’
(b)	ṣṣl	ùùl-g	‘head.2P’	óól	úùlg	‘above, over, on’
(c)	āāp/ ēēp	ààp-g/ ìip-g	‘back.1P/ back.3P’	ááp/ éép	ââp îipg	‘behind, in back of’
(d)	bāl	bàl-g	‘vagina’	bāl	bàlg	‘under, beneath’
(e)	mūū	mùù-gg	‘face’	mūū	mùùgg	‘before, in front of’
(g)	bèp-ɟ	bèp-āāgg	‘side’	bèpɟ	bèpāāgg	‘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 = níl gār = ā súùgg **îilg** é gārā fěđáná jègg = ā
2pN = know place = DEF market in where placed things = DEF
‘Do you know the place in the market where things . . .’ (Fand27)
- (b) ē máà īīp ē àn mōsōr **ṣṣl**
3sN prides 3sR 3sN stay horse up
‘. . . taking pride in himself as he sits up on the horse.’ (Minj14)
- (c) fāā ná bēl cđđpđđ.-èèn, ē àn gōi **bāl**
old REL.SG called Joojo-3sO 3sN staying tree.type beneath
‘An old man named Joojo was sitting under a Gai tree.’ (Jooj3)
- (d) ē rāgg fōl **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 *ɟ-* ‘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 =*l* attaches to the verb. The prepositional prefix *ɟ-* marks the body part locative as indicating a pronoun as well as a location,

and thus the vowel *εε* indicates the third person singular pronoun (*ɔ-έέη* ‘to behind him’).

- (4) $\bar{a}l\bar{d} = \acute{a}$ $\bar{\epsilon}$ $p\hat{a}r\bar{d} = \grave{i}$ $\bar{d}-\acute{\epsilon}\acute{\epsilon}\eta$
 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 *ɔ-δδη* (PP-behind.2sO; locative prepositional pronoun) would have been used. If the meaning were ‘Fox jumped on his back’ the construction *ɔ-εεη* (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 *p\hat{a}r\bar{d}\bar{\epsilon} \bar{u}f\acute{u} \acute{\epsilon}\acute{\epsilon}\eta* (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 *τε* ‘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)	$\acute{\epsilon}\acute{\epsilon}lg$	$\hat{u}lg$	‘in, inside of’
(b)	$\acute{\acute{\acute{a}}l}$	$\acute{u}ul\bar{g}$	‘above, over, on’
(c)	$\acute{\acute{\acute{a}}}\eta/\acute{\acute{\acute{a}}}\eta$	$\acute{\acute{\acute{a}}}\eta\bar{g}$	‘behind, in back of’
(d)	$b\bar{\acute{a}}l$	$b\grave{\acute{a}}lg$	‘under, beneath’
(e)	$m\bar{u}\bar{u}$	$m\grave{u}\grave{u}gg$	‘before, in front of’
(g)	$b\grave{\epsilon}\eta\eta$	$b\grave{\epsilon}\eta\bar{\acute{a}}gg$	‘next to, beside’

12.1 Segmental formation of body part locatives

The body part locatives *έέlg* ‘in’ and *άάl* ‘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 *ááj/ééj* ‘behind’ is separate from singular nouns as vowel quality of the locative never changes.

(6) **Singular body part locatives *éélg* ‘in’, *óól* ‘above’, *ááj/ééj* ‘behind’ on singular nouns with stem-final *ð***

	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
(a)	jááð	jááð = éélg	jááð = óól	jááð ááj	jááð ééj ‘old clothes’
(b)	mᵋᵋð	mᵋᵋð = ílg	mᵋᵋð = úúl	mᵋᵋð ááj	mᵋᵋð ééj ‘grandfather’
(c)	mᵋᵋð	mᵋᵋð = éélg	mᵋᵋð = óól	mᵋᵋð ááj	mᵋᵋð ééj ‘tree type’
(d)	kūūð	kūūð = ílg	kūūð = úúl	kūūð ááj	kūūð ééj ‘shadow’
(e)	yààð	yààð = ēēlg	yààð = òól	yààð āáj	yààð ēēj ‘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 *óól* ‘above’ take the [ATR] quality of the noun to which they attach. However, the body part locative *ááj/ééj* ‘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’, *óól* ‘above’, *ááj/ééj* ‘behind’ on monosyllabic underlying approximant-final stems**

Stem-final	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
(a)	aɔ /aw/	káð	káw = ēēlg	ká. = òól	káw āáj ‘hyena’
(b)	aaɔ /aaw/	bààð	bààw = ēēlg	bàà. = òól	bààw āáj ‘father’
(c)	ɛɔ /ɛw/	bēð	bēw = ēēlg	bē. = òól	bēw āáj ‘tree type’
(d)	aɛ /ay/	ṭāè	ṭā. = ēēlg	ṭā = òól	ṭāy āáj ‘giraffe’
(e)	aaɛ /aay/	sāāē	sāā = éélg	sāā. = óól	sāāy ááj ‘coconut’
(f)	əɔi /əɔy/	mᵋᵋðì	mᵋᵋð.í = ílg	mᵋᵋðì. = úúl	mᵋᵋðì āáj ‘farm fence’
(g)	ui /uy/	mūī	mū.í = ílg	mūī. = úúl	mūī ááj ‘wildebeest’
(h)	uui /uuy/	ṅūūì	ṅūū. = ílg	ṅūūì. = úúl	ṅūūì āáj ‘leopard’

Similarly, in monosyllabic long vowel-final stems, the vowel of the locatives *éélg* ‘in’ and *óól* ‘above’ take the [ATR] quality of the noun to which they attach, but *ááj/ééj* ‘behind’ is separate.

(8) **Singular body part locatives *éélg* ‘in’, *óól* ‘above’, *ááj/ééj* ‘behind’ on monosyllabic long vowel-final stems**

Stem-final	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
ɛ	rēē	rēē. = éélg	rēē. = óól	rēē ááj	rēē ééj ‘cotton’
a	māà	māà. = ēēlg	māà. = òól	māà āáj	māà ēēj ‘house’
ɔ	ṭóó	ṭóó. = éélg	ṭóó. = óól	ṭóó ááj	ṭóó ééj ‘cow’

Stem-final	N SG	N SG	N SG	N SG	N SG	
		‘in’	‘above’	‘behind’		
i	jĩ	jĩ. = iĩlg	jĩ. = uũl	jĩ āāɲ	jĩ ēēɲ	‘turkey’
ə	wəṣṣ	wəṣṣ. = íĩlg	wəṣṣ. = úúł	wəṣṣ ááɲ	wəṣṣ ééɲ	‘shade’
u	bùù	bùù. = iĩlg	bùù. = uũl	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 *śśl* ‘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’, *śśl* ‘above’, *ááɲ/ééɲ* ‘behind’ on polysyllabic vowel-final stems**

	Stem-final	N SG	N SG	N SG	N SG	
			‘in’	‘above’	‘behind’	
(a)	εε	ābbéé	ābbéé = lg	ābbéé śśl	ābbéé ááɲ	‘uncle’
(b)	ii	ūrīī	ūrī.í = ílg	ūrīī śśl	ūrīī ááɲ	‘ostrich’
(c)	aa	wááyáá	wááyáá = lg	wááyáá śśl	wááyáá ááɲ	‘bird type’
(d)	əə	gəũłdḁḁ	gəũłdḁḁ ēēlg	gəũłdḁḁ ʋʋl	gəũłdḁḁ āāɲ	‘fish’
(e)	ɔɔ	mélṣṣ	mélṣṣ éélg	mélṣṣ śśl	mélṣṣ ááɲ	‘sugar cane’
(f)	uu	əyúú	əyúú éélg	əyúú śśl	əyúú ááɲ	‘tooth brush’
(g)	a	ṭááḁḁ	ṭááḁ = ēēlg	ṭááḁ ʋʋl	ṭááḁ āāɲ	‘grandmother’
(h)	ə	əɲḁ	əɲḁ ēēlg	əɲḁ ʋʋl	əɲḁ āāɲ	‘little girl’
(i)	ɔ	ḁnsḁ	ḁns = ēēlg	ḁnsḁ ʋʋl	ḁnsḁ āāɲ	‘cooking plate’
(j)	u	kúúfú	kúúf = ílg	kúúf = úúł	kúúfú ááɲ	‘crushed beans’
(k)	uə	būḁ	būḁ ēēlg	būḁ ʋʋl	būḁ 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’, *óól* ‘above’, *ááŋ/ééŋ* ‘behind’ on singular nouns with stem-final consonants**

Stem-final	N SG	N SG	N SG	N SG	
		‘in’	‘above’	‘behind’	
(a) bb	jílòbb	jílòbb = ìilg	jílòbb óól	jílòbb ááŋ	‘water spring’
(b) ɖ	māāɖ	māāɖ = éélg	māāɖ óól	māāɖ ááŋ	‘snake type’
(c) d	dɔd	dɔd = éélg	dɔd óól	dɔd ááŋ	‘bird type’
(d) ʃ	bìmiríʃ	bìmiríʃ = íilg	bìmiríʃ óól	bìmiríʃ ááŋ	‘bird type’
(e) gg	kàmàlògg	kàmàlògg = ēēlg	kàmàlògg óól	kàmàlògg ááŋ	‘woman’
(f) s	márɔs	márɔs = éélg	márɔs óól	márɔs ááŋ	‘spider’
(g) m	ɖɔm	ɖɔm = íilg	ɖɔm óól	ɖɔm ááŋ	‘Arab’
(h) n	séèn	séèn = ēēlg	séèn óól	séèn ááŋ	‘ruler’
(i) ɲ	ɲéèŋ	ɲéèŋ = ēēlg	ɲéèŋ óól	ɲéèŋ ááŋ	‘spear type’
(j) r	púr	púr = íilg	púr óól	púr ááŋ	‘flower’
(k) l	ɖòŋòl	ɖòŋòl = ēēlg	ɖòŋòl óól	ɖòŋòl ááŋ	‘millipede’

Regardless of the stem-final segments, the plural body part locatives *îilg* ‘in’, *úùlg* ‘above’, and *ééŋ* ‘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 *îilg* ‘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 îilg	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá-lg	wááyáá-gg îilg	‘bird’
-gg	kúúfú	kúúfú-gg	kúúf-íilg	kúúfú-gg îilg	‘beans’
-Āgg	céld	céld-āgg	céld éélg	céld-āg îilg	‘broom’
-ÉĒgg	púr	púr-îigg	púr-íilg	púr-îigg îilg	‘flower’
-ĀĀgg	îl	îl-ààgg	îl èēlg	îl-ààgg îilg	‘horn’
-ĀĀɖ	kàmàlògg	kàmàlògg-ààɖ	kàmàlògg ēēlg	kàmàlògg-ààɖ îilg	‘woman’
-ɖ	ābbéé	ābbéé-ɖ	ābbéé-lg	ābbéé-ɖ îilg	‘uncle’
-ɖ/-gg	gèrmù-ɖ	gèrmù-gg	gèrmù-ɖ ēēlg	gèrmù-gg îilg	‘insect’
-Ed/-gg	jíŋ-íd	jíŋ-g	jíŋ-íd-íilg	jíŋ-g îilg	‘louse’

(12) **Body part locative ʒól ‘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 ʒól	wáār-g úùlg	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá ʒól	wááyáá-gg úùlg	‘bird’
-gg	kúúfú	kúúfú-gg	kúúf = úúf	kúúfú-gg úùlg	‘beans’
-Āgg	céld	céld-āgg	céld ʒól	céld-āgg úùlg	‘broom’
-ÉĒgg	púr	púr-īgg	púr ʒól	púr-īgg úùlg	‘flower’
-AAgg	íl	íl-àgg	íl ʒól	íl-àgg úùlg	‘horn’
-AAđ	kàmàlògg	kàmàlògg-ààđ	kàmàlògg ʒól	kàmàlògg-ààđ úùlg	‘woman’
-đ	ābbéé	ābbéé-đ	ābbéé ʒól	ābbéé-đ úùlg	‘uncle’
-đ/-gg	gèrmù-đ	gèrmù-gg	gèrmù-đ ʒól	gèrmù-gg úùlg	‘insect’
-Ed/-gg	jíŋ-íd	jíŋ-g	jíŋ-íd ʒól	jíŋ-g úùlg	‘louse’

(13) **Body part locative ááŋ/ééŋ ‘behind’ and ʒəŋg ‘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 ááŋ	wáār-g ʒəŋg	‘insect’
-gg	wááyáá	wááyáá-gg	wááyáá ááŋ	wááyáá-gg ʒəŋg	‘bird’
-gg	kúúfú	kúúfú-gg	kúúfú ááŋ	kúúfú-gg ʒəŋg	‘beans’
-Āgg	céld	céld-āgg	céld ááŋ	céld-āg ʒəŋg	‘broom’
-ÉĒgg	púr	púr-īgg	púr ááŋ	púr-īgg ʒəŋg	‘flower’
-AAgg	íl	íl-àgg	íl āāŋ	íl-àgg ʒəŋg	‘horn’
-AAđ	kàmàlògg	kàmàlògg-ààđ	kàmàlògg āāŋ	kàmàlògg-ààđ ʒəŋg	‘woman’
-đ	ābbéé	ābbéé-đ	ābbéé ááŋ	ābbéé-đ ʒəŋg	‘uncle’
-đ/-gg	gèrmù-đ	gèrmù-gg	gèrmù-đ āāŋ	gèrmù-gg ʒəŋg	‘insect’
-Ed/-gg	jíŋ-íd	jíŋ-g	jíŋ-íd ááŋ	jíŋ-g ʒəŋg	‘louse’

12.2 Tonal formation of body part locatives

The singular body part locatives *éélg* ‘in’, *ʒól* ‘above’, *ááŋ/ééŋ* ‘behind’ have underlying High tone and the plural body part locatives *úùlg* ‘in’, *úùlg* ‘above’, *ʒəŋg* ‘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 éélg ‘in’, ʒól ‘above’, ááŋ/ééŋ ‘behind’
on stem-final ɔ nouns with three tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	jááð	jááð = éélg	jááð = ʒól	jááð ááŋ	‘old clothes’
M	māðð	māðð = ílg	māðð = úúf	māðð ááŋ	‘grandfather’
L	yààð	yààð = ēēlg	yààð = ʒól	yààð āāŋ	‘sister’

(15) **Singular body part locatives *éélg* ‘in’, *śól* ‘above’, *ááj/ééj* ‘behind’ on monosyllabic approximant-final stems with various tone melodies**

Tone	N SG	N SG ‘in’	N SG ‘above’	N SG ‘behind’	
H	ááé	áá.é = élg	áá. = śólg	ááy = ááj	‘honey’
M	mūī	mū.í = ílg	mūī. = úúl	mūī ááj	‘wildebeest’
L	bààð	bààw = ēēlg	bàà. = śól	bààw = āāj	‘father’
HL	káð	kâw = ēēlg	kâ. = śól	kâw = āāj	‘hyena’
ML	ɲūū	ɲū. = īlg	ɲūū. = ūūl	ɲūū āāj	‘leopard’

(16) **Singular body part locatives *éélg* ‘in’, *śól* ‘above’, *ááj/ééj* ‘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. = śól	cáá ááj	‘wild cat’
M	mīī	mīī. = ílg	mīī. = úúl	mīī ááj	‘goat’
L	ɖīī	ɖīī. = īlg	ɖīī. = ūūl	ɖīī āāj	‘rat’
HL	máà	máà. = ēēlg	máà. = śól	máà āāj	‘house’
ML	ɟīī	ɟīī. = īlg	ɟīī. = ūūl	ɟīī āāj	‘turkey’

(17) **Singular body part locatives *éélg* ‘in’, *śól* ‘above’, *ááj/ééj* ‘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. = śól	áðá ááj	‘dog’
M	ūrīī	ūrī.í = ílg	ūrīī śól	ūrīī ááj	‘ostrich’
L	ðnsð	ðns = ēēlg	ðnsð śól	ðnsð āāj	‘cooking plate’
HL	báɖà	báɖ. = ēēlg	báɖà śól	báɖà āāj	‘gourd cup’
ML	gāfà	gāf. = ēēlg	gāfà śól	gāfà āāj	‘farm, field’
MH	mṵṵṵ	mṵṵ. = éélg	mṵṵṵ śól	mṵṵṵ ááj	‘locust’

(18) **Singular body part locatives *éélg* ‘in’, *śól* ‘above’, *ááj/ééj* ‘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 śól	wáár ááj	‘insect type’
M	ɖṵm	ɖṵm. = ílg	ɖṵm śól	ɖṵm ááj	‘Arab’
L	kààm	kààm. = ēēlg	kààm śól	kààm āāj	‘cow type’
HL	séèn	séèn. = ēēlg	séèn śól	séèn āāj	‘ruler’
HM	ǰórgāāl	ǰórgāāl. = éélg	ǰórgāāl śól	ǰórgāāl ááj	‘bird type’
ML	kṵðèl	kṵðèl. = ēēlg	kṵðèl śól	kṵðèl āāj	‘baboon’
LH	àggáár	àggáár. = éélg	àggáár śól	àggáár ááj	‘hunter, rider’
LM	gṵèn	gṵèn. = éélg	gṵèn śól	gṵèn ááj	‘metal worker’
MH	bāár	bāár. = éélg	bāár śól	bāár ááj	‘tribe member’

(19) **Plural body part locatives *ñilg* ‘in’, *ùùlg* ‘above’, *ṣṣṅg* ‘behind’ on nouns with various tone melodies**

Tone	N PL	N PL ‘in’	N PL ‘above’	N PL ‘behind’	
H	wáár-g	wáár-g ñilg	wáár-g úùlg	wáár-g ṣṣṅg	‘insect type’
M	ḍḍm-g	ḍḍm-g ñilg	ḍḍm-g úùlg	ḍḍm-g ṣṣṅg	‘Arab’
L	kààm-g	kààm-g ñilg	kààm-g úùlg	kààm-g ṣṣṅg	‘cow type’
HL	séèn-g	séèn-g ñilg	séèn-g úùlg	séèn-g ṣṣṅg	‘ruler’
HM	ǰǰrgāāl-g	ǰǰrgāāl-g ñilg	ǰǰrgāāl-g úùlg	ǰǰrgāāl-g ṣṣṅg	‘bird type’
ML	kṣṣḍèl-g	kṣṣḍèl-g ñilg	kṣṣḍèl-g úùlg	kṣṣḍèl-g ṣṣṅg	‘baboon’
LH	àggáár-g	àggáár-g ñilg	àggáár-g úùlg	àggáár-g ṣṣṅg	‘hunter, rider’
LM	gḍḍēn-g	gḍḍēn-g ñilg	gḍḍēn-g úùlg	gḍḍēn-g ṣṣṅg	‘metal worker’
MH	bāár-g	bāár-g ñilg	bāár-g úùlg	bāár-g ṣṣṅg	‘tribe member’

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

(20) **Singular body part locatives *bəl* ‘under’, *mūū* ‘in front of’, *bèñj* ‘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 bəl	wáár mūū	wáár bèñj	‘insect type’
M	ḍḍm	ḍḍm bəl	ḍḍm mūū	ḍḍm bèñj	‘Arab’
L	kààm	kààm bəl	kààm mùù	kààm bèñj	‘cow type’
HL	séèn	séèn bəl	séèn mùù	séèn bèñj	‘ruler’
HM	ǰǰrgāāl	ǰǰrgāāl bəl	ǰǰrgāāl mūū	ǰǰrgāāl bèñj	‘bird type’
ML	kṣṣḍèl	kṣṣḍèl bəl	kṣṣḍèl mùù	kṣṣḍèl bèñj	‘baboon’
LH	àggáár	àggáár bəl	àggáár mūū	àggáár bèñj	‘hunter, rider’
LM	gḍḍēn	gḍḍēn bəl	gḍḍēn mūū	gḍḍēn bèñj	‘metal worker’
MH	bāár	bāár bəl	bāár mūū	bāár bèñj	‘tribe member’

The plural body part locatives *bəlg* ‘under’, *mùùgg* ‘in front of’, *bèñnāagg* ‘beside’ also have initial Low tone which is not affected by any tone.

(21) **Plural body part locatives *bəlg* ‘under’, *mùùgg* ‘in front of’, *bèñnāagg* ‘beside’ on nouns with various tone melodies**

Tone	N PL	N PL ‘under’	N PL ‘in front of’	N PL ‘beside’	
H	wáár-g	wáár-g bəlg	wáár-g mùùgg	wáár-g bèñnāagg	‘insect’
M	ḍḍm-g	ḍḍm-g bəlg	ḍḍm-g mùùgg	ḍḍm-g bèñnāagg	‘Arab’
L	kààm-g	kààm-g bəlg	kààm-g mùùgg	kààm-g bèñnāagg	‘cow’
HL	séèn-g	séèn-g bəlg	séèn-g mùùgg	séèn-g bèñnāagg	‘ruler’
HM	ǰǰrgāāl-g	ǰǰrgāāl-g bəlg	ǰǰrgāāl-g mùùgg	ǰǰrgāāl-g bèñnāagg	‘bird’

Tone	N PL	N PL 'under'	N PL 'in front of'	N PL 'beside'	
ML	kɔ̃ðɛ̀l-g	kɔ̃ðɛ̀l-g b̀lɔ̃g	kɔ̃ðɛ̀l-g mùùgg	kɔ̃ðɛ̀l-g beɲāāgg	'baboon'
LH	àggáār-g	àggáār-g b̀lɔ̃g	àggáār-g mùùgg	àggáār-g beɲāāgg	'hunter'
LM	g̀d̃ɛ̀n-g	g̀d̃ɛ̀n-g b̀lɔ̃g	g̀d̃ɛ̀n-g mùùgg	g̀d̃ɛ̀n-g beɲāāgg	'metal worker'
MH	bāár-g	bāár-g b̀lɔ̃g	bāár-g mùùgg	bāár-g beɲāāgg	'tribe m.'

13 Adverbs

Another lexical category—adverbs, describes the action of the clause, the clause predicate or the entire clause. There is a strong case for both adjectives and adverbs; different modifiers are normally used to describe verbs than those used to describe nouns. The adjective *wēḡán* ‘good.SG’ of (1a) cannot be used in (b) to describe the verb *fīḡ-ḡō* ‘hear’, and the adverb *māḡ* ‘well’ of (b) cannot be used to describe the noun *sālāām* ‘peace’ in (a). Furthermore, the adjective *wēḡán* agrees in number with the noun it modifies, whereas the adverb *māḡ* is unchangeable, and therefore not a noun or any other word category with number distinction.

(1a) *sālāām* *é* *ṭél* ***wēḡán***
 peace GP God good.SG
 ‘The peace of God is good.’

(b) *bù* *fīḡ-ḡō* *kōr=é* ***māḡ***
 let.IMP hear-SBJV.3pN word=RDM well
 ‘Let them hear this message well!’ (Womn25)

In this chapter, all attested words are presented which have the function of describing the action of the clause, the clause predicate or the entire clause. These words which are lexically categorized as adverbs can be grouped semantically according to manner, direction, place, time, or none of these. Adverbs of manner, direction, and place always follow the verb, whereas other adverbs are moveable outside of the verb phrase and may occur before the verb. When more than one kind of adverb is present, it is most common for manner and directional adverbs to precede adverbs of place, time, and other adverbs. The negative particle can also be analysed as an adverb since it has the same function as adverbs and always occurs clause-finally.

13.1 Adverbs of manner

Adverbs of manner, which describe how the action takes place, immediately follow the verb or any verb complements.

(2a) *ā* *bā* *káḡ* *wāḡ-ḡá* ***bír***
 SBJV /bag/collect.SBJV multitude /waḡ/go-SBJV openly
 ‘. . . to gather the multitude (of people) scattered about.’

(b) *ò* *ḡēn=á* . . . *bō=ì* ***ḡùùl***
 and person=DEF . . . send=3sAM difficult
 ‘The person . . . to send is difficult (to find).’ (Assa9-10)

A few attested adverbs of manner are given in (3).

(3) **Adverbs of manner**

bír	‘openly’	sù	‘deeply’
rēggāād	‘loudly’	ṭifiṭṭ	‘quickly’
māṅ	‘well’	ǰáám	‘wrongly’
ḍùùl	‘difficult’		

13.2 Adverbs of direction

Adverbs of direction, indicating the direction of the action, may describe the verb without any further verb modifiers as in (4a). However, it is common for adverbs of direction to occur along with adverbs of place, which normally follow adverbs of direction as in (b).

(4a)

ēgg	bōfō	ēgg	léē	ṭàḍ
3pN	sing	3pN	going	up

‘They sang as they went up.’ (Fand25)

(b)

á	wīr-ōn	áfáḍ	mān	ṭáḍ	ṭè
1sN	slaughter-CONT	blood	certain	down	here

‘I am making a sacrifice here (lit. slaughtering down a certain living creature here).’ (Jooj9)

A list of some adverbs of direction is provided in (5).

(5) **Adverbs of direction**

ṭáḍ	‘down’	ṭàḍ	‘up’
sím	‘in, down’	ṭú	‘out, away, through’
cābb	‘up’	fān	‘on, to’
ḍūmùùn	‘towards’		

13.3 Adverbs of place

Adverbs of place can reference physical or figurative locations of verbs. They can describe the verb by themselves or along with another adverb. Other adverbs, such

(6a)

mósí	néé	nór-r-ōn	ṭè
insect	this	drools-CAUS-CONT.N	here

‘This insect drools here.’ (Jooj10)

(b)

ò	á	ǰām	ā	ṭál	kōr	é	mūn	ṭè	ǰō
and	1sN	want	SBJV	create	speech	GP	time	here	only

‘And now I will stop talking here.’ (Tifa14)

- (c) gùrūūs-úgg = ú t̄ā t̄ù wá
 money-PL = DEF COP there not
 ‘There is no money.’ (Fand16)

as ʃō ‘only’ in (6b), follow adverbs of place.

Attested adverbs of place are listed in (7). The same three-way distinction as in demonstratives in 8.1.3—near a speaker, near an addressee, and away from both speaker and addressee—also occur in adverbs, as well as a presentational adverb as in (6c).

(7) **Adverbs of place**

Long	Short		
t̄èèðé	t̄è	‘here’	near speaker
t̄ààðá	t̄à	‘there’	near addressee
t̄ììðí	t̄ì	‘there’	away from both
	t̄ù	‘there’	presentational

13.4 Adverbs of time

Adverbs of time normally occur as part of the verb phrase as in (8a, b), but may precede the clause entirely as in (c).

- (8a) ò ú = ɲōm ɲíí **bārè** ā
 and 2sN = want what now QM
 ‘And what do you want now?’ (Jooj7)
- (b) āgg wāj-ʃā wāā = lg **fěédǎǎl** ʃō
 1pN went-COMP water = in early.morning only
 ‘We also went to the water valley early in the morning.’ (Thng17)
- (c) ò **bārè** ú = b̄ur ú-ə̀n = ī bà
 and now 2sN = remain.INCP 2sN = /an/live.INCP = IPF oh
 ‘And are you still living (with good health)?’

Attested adverbs of time are listed in (9).

(9) **Adverbs of time**

bārè	‘now’
kāēn	‘yesterday’
fěédǎǎl	‘early morning’

Prepositional phrases introduced with the general preposition *é, í* (GP) of 11.3 can be used as adjuncts indicating time. In (10a), the phrase *é nāāndá mán* ‘on a certain day’ describes the time of the verb *wāḥḥā* ‘went’. Such phrases are also common at the beginning of the clause as in (b).

- (10a) á wāḥḥā **é nāāndá = á mán** dūmùùn é dāàl.
 1sN went GP day = DEF certain towards GP (valley name)
 ‘One day I went to Dal Valley.’ (Thng1)
- (b) **é nāāndá = á yāàn,** āld = á ē áḍággā ē fáàm
 GP day = DEF other Fox = DEF 3sN came 3sN thought
 ‘Another day, Fox brought another idea . . .’ (Nyee30)

Attested prepositional phrases used as adjuncts indicating time are shown in (11).

- (11) **Prepositional phrases used as adjuncts indicating time**
- | | |
|---------------|----------------|
| é fōgg | ‘tomorrow’ |
| é yāāgg | ‘a while’ |
| é kááy-ēēgg | ‘at night’ |
| é nāāndá yāàn | ‘another day’ |
| é gārāndá | ‘at that time’ |

13.5 Other adverbs

Other adverbs are found to modify verbs, verb predicates, or the entire clause. Although they most commonly occur following the verb, some precede the verb when emphasizing noun subjects or even introduce the clause. The adverbs in (12a, b) show the most typical position, following the verb. In (c), the adverb *ḵḵ* ‘just’,

- (12a) mōrāā ḵḵ = í **ḵḵān**
 government came = IPF again
 ‘The government came again.’ (Fand10)
- (b) ḵḵ, wéé dār **ḵḵ** ā gāḍ-dā īggó nālg = ān
 oh go hide only SBJV give-SBJV.1pN milk.DEF children = DAT
 ‘Let’s just go hide in order to give this milk to the children.’ (Nyee26)
- (c) ḵāfari = n é mánē **ḵḵ** ḍàḍ-sā càḍr-ēēgg = á yōōsá.
 Jafari = DEF alone just killed-COMP rabbits-PL = DEF four
 ‘Jafari, by himself, killed four rabbits.’ (Jafr7)
- (d) bēl-án gīrḵéēn **ḵḵ**.
 having-CONT.P two.piasters(Ar) only
 ‘He had only two piasters.’ (Fand1-2)

emphasizes the subject, whereas in (d), the adverb emphasizes the object.

The remaining attested adverbs are listed in (13).

(13) **Other adverbs**

đí	‘also, in addition to’	páđ	‘suddenly, always, forever’
jō	‘only, no more, just’	rē	‘very’
đēēnē	‘only’	ānà	‘like this’
ťáān	‘again, another time’	ánēén	‘like this’
mārèè	‘somehow’	gōl	‘just, in that way’
mā	‘even’		

13.6 Negation

The negative particle *wá* always occurs clause-finally and modifies or negates the preceding verb, verb predicate or clause. Since neither its position nor function differs from adverbs, the negative particle can also be analyzed as an adverb. As in (14a), the negative particle occurs as the last word of the verb phrase and may be separated from the verb by verb complements or adjuncts. The negative particle may also negate an adverb of manner as in (b) or a prepositional phrase functioning as an adverb as in (c).

(14) **Negative examples**

- (a) mōīđ kūūđ = ū đàđ-sā jèèm đéé **wá**
 old.man person.name = DEF kill-COMP thing any not
 ‘The old man Kuud didn’t kill anything.’ (Jafr8)
- (b) mássēē jīs-ōn = ō māj **wá**
 sickness treating-CONT.N = 1sD carefully not
 ‘The massee sickness is not treating me well.’ (Assa2)
- (c) jèèm ār-s āān ánēén é nāānd-á māj **wá**
 something frightened-COMP 1sA like.this GP day-DEF certain not
 ‘There has never been a day I was as frightened as this.’ (Thng14)

14 Clause-level syntax

14.1 Introduction

In the previous chapters, various morphemes have been shown to be distinct in form. We now present many of the same morphemes in their syntactic context to show their function. Agentive passive, agentless passive, antipassive, and causative verb forms are shown to be syntactically distinct. In non-verbal clauses, copular clitics are shown to take the place of separate copula particles, which are functionally equivalent but different in form. Relative clauses are morphologically marked for definiteness and grammatical function, and they receive the marking instead of the head noun they modify.

In this chapter, we first discuss grammatical function of constituents in 14.2 and word order in 14.3, then verbal clauses in 14.4 and verbal valency in 14.5, followed by non-verbal clauses in 14.6, relative clauses in 14.7, evidentiality in 14.8, and finally noun phrases in 14.9.

14.2 Grammatical function of constituents

Nouns function as subjects, objects, indirect objects, or objects of prepositional phrases. In (1), *mèēn* ‘youth’ has the role of agent and functions as the subject of the clause. The noun *nāmsá* ‘food’ has the role of a theme, functioning as an object, whereas *mā̄sā* ‘grandfather’ is the recipient and indirect object.

- (1) *mèēn* *mā̄r-sá* *nāms-á* *mā̄sā = ān*
 youth.leader /mar/buy-COMP food-DEF grandfather=DAT
 ‘The youth leader bought the food for the grandfather.’

Case marking does not occur on subject or object nouns, but dative nouns take the clitic =*Ān* as shown in (1) and (2) and have the role of beneficiary or recipient. In (2), the noun *kááy-ēēgg = é* ‘night-PL=RDM’ functions as the object of the general preposition *é* (GP).

- (2) *ð* *ná* *bér-s = āná* *nālg = ān* *é* *kááy-ēēgg = é*
 and REL explain-COMP=PAS small.ones=DAT GP night-PL=RDM
 ‘. . . and that which is explained (fable) to children at night.’

Objects and indirect objects are verb complements, whereas prepositional phrases, locative phrases and adverbs are verb adjuncts. In (2), the prepositional phrase *é kááy-ēēgg = é* ‘at night’ is an adjunct to the verb *bérsāná* ‘explain’ expressing time. In (3), the locative phrase *ūfú sál* ‘in the tree’ and adverb *ḡēēnē* ‘only’ are both adjuncts to the verb *ān* ‘stay’ expressing location.

- (3) ē àn ūfú s̄ól d̄ēēnē.
 3sN staying tree up only
 ‘... as he remained in the tree.’ (Nyee35)

14.3 Word order

Gaahmg word order is SVO, as in (4).

- (4) bāárg-á ḡás-ǎ n nā-lg nà ñn-g = ì
 Baggara-DEF search-CONT.P girl-PL REL.PL young-PL = RDM
 ‘The Baggara (people group) were kidnapping young girls.’ (Minj2)

As shown in (5), verb complements—objects and indirect objects—immediately follow the verb, and adjuncts follow verb complements. Adverbs are least connected with the verb and the most moveable of the adjuncts, sometimes being fronted before the verb, although not usually before the subject. When more than one kind of adverb is present, manner and directional adverbs normally precede adverbs of place, time, and other adverbs. Negation markers can be analyzed as adverbs, since they follow the verb and its adjuncts and have the same function as adverbs. They are always sentence-final and cannot be fronted before the verb as some adverbs can.

- (5) Word order of complements and adjuncts
 (ADV_[Adjunct]) V (NP_[O]) (NP_[IO]) ({LP, PP, ADV}_[Adjunct])

The examples of (6) show the common word order of verb complements and adjuncts. In (a), the object *kōr* ‘speech’ is followed by a prepositional phrase *é mūn* ‘by time’, which is followed by an adverb of place *t̄è* ‘here’, and then followed by the adverb *ǰḡ* ‘only’. In (b), the verb is followed by the locative phrase *mḡsḡr ḡḡl* ‘on a horse’, by the prepositional phrase *ē páré = n é mḡḡil = ḡ* ‘with animal skin of the devil’ which is a prepositional phrase within a phrase, and finally by the prefixed prepositional phrase *d̄-éēs* ‘in his hand’.

- (6a) ā t̄āl kōr é mūn t̄è ǰḡ.
 SBJV create.SBJV.1sN speech by time here only
 ‘... and I will stop talking here.’ (Tifa14)
- (b) ē àn mḡsḡr ḡḡl ē páré = n é mḡḡil = ḡ d̄-éēs.
 3sN stay horse up with skin.bag = GP devil.GEN = PP-
 DEF DEF DEF hand.3sPs
 ‘He rides on a horse with an animal-skin bag of the devil in his hand.’
 (Minj14-15)

14.4 Verbal clauses

Verbal clauses with underived verbs can be transitive, intransitive or dative (three-argument). The intransitive clauses of (7) have the subjects as their only argument. Intransitive verbs are not uncommon in Gaahmg.

(7) **Intransitive (1 argument)**

(a) $\bar{a}lq = \acute{a}$ \bar{e} $w\bar{a}j\text{-}j$ $t\acute{u}$.
 fox = DEF 3sN /wāj/go-INF out
 ‘The fox went out.’ (Goat16-17)

(b) $m\bar{d}r\bar{a}\bar{a}$ $\acute{s}\bar{d}\text{-}\acute{d}\text{-}\acute{i}$ $t\bar{a}\bar{a}n$
 government /šd/come.INF-IPF again
 ‘The government came again.’ (Fand10)

Transitive verbs have the arguments subject and object which in the clause of (8) have the semantic roles of agent and theme. In Gaahmg, there is no morphological distinction between transitive and intransitive verbs.

(8) **Transitive (2 arguments)**

AGENT		THEME			
$j\bar{a}d\bar{e}\bar{e}r = \bar{a}$	$w\bar{a}r\text{-}s\acute{a}$	$k\bar{a}j$	$\acute{f}i\bar{n}\bar{i} = n$	\bar{e}	$m\bar{a}d\bar{a}$.
Jader = DEF	/wār/carry-COMP	group	3sPs = DEF	with	big.size

‘Jader led his very large group.’ (Fand24-25)

Dative verbs have the arguments subject, object, and indirect object which in the clause of (9) have the semantic roles of agent, theme, and recipient. The presence of a recipient or beneficiary in a clause requires the presence of an agent or experiencer and patient or theme. In other words, a dative cannot be present without a subject and object. The dative verbs attested are /gâf/ ‘give’, /bêê/ ‘tell, say’, /bâg/ ‘bring’.

(9) **Dative (3 arguments)**

AGENT		THEME		RECIPIENT
$j\bar{e}n$	$g\bar{a}\bar{d}\text{-}s\bar{a}$	$m\bar{i}\bar{i} = n$	$k\bar{a}m\bar{a}l\bar{o}gg = \bar{a}n$	
person	give-COMP	goat=DEF	woman=DAT	

‘The person gave the woman the goat.’

14.5 Verbal valency

Although there is no morphological distinction between transitive and intransitive verbs, there are four valency-decreasing morphemes and one valency-increasing morpheme attached to verbs. The functions of each are shown by the examples in following sections.

Table 56: Verb derivational markers

	SG	PL	
Agented passive	= \bar{E}	= $\bar{E}\bar{E}$	valency- decreasing
Middle	[+ATR], tone change	[+ATR], tone change	
Passive	= $\bar{A}n\acute{A}$, = \acute{A}	= $\bar{A}n\acute{A}$, = \acute{A}	
Antipassive	-An	-An	valency- increasing
Causative	[+ATR], - \bar{d}^+A	[+ATR], - \bar{d}^+A	

14.5.1 Agented passive

The agented passive clitic decreases the valency of the clause by demoting the agent to non-argument status, although an explicit expression of the agent is still required. In clauses with agents encoded by post-verbal constructions, an agented passive clitic = \bar{E} / = $\bar{E}\bar{E}$, which agrees with a genitive agent in number, is attached to the verb stem. The clauses of (10-11) have singular and plural agents in pre- and post-verbal positions.

(10) Pre-verbal agents

	AGENT		PATIENT		AGENT		PATIENT	
(a)	jên	nām-sá	gùlḍūn		(b)	jōgg	nām-sà	gùlḍūn
	person	break-	branch.DEF			people	break-	branch.DEF
		COMP					COMP	
	‘The person broke the branch.’				‘The people broke the branch.’			

(11) Post-verbal agent, agented passive verb

	PATIENT		AGENT		PATIENT		AGENT	
(a)	gùlḍūn	nām-s = \bar{E} ³⁸	jên		(b)	gùlḍūn	nām-s = $\bar{E}\bar{E}$	jōgg
	branch	break-	person.			branch	break-	people.GEN
		COMP=PAS.A	GEN				COMP=PAS.A	
	‘The branch was broken by the person.’				‘The branch was broken by the people.’			

Third person encodings of agents or experiencers follow the verb when objects are in focus, being pre-verbal. In such clauses, nouns with the role of agent or experiencer can be introduced with the general preposition \acute{e} (GP) as in (12a). Pronouns with such roles can be introduced with the prefix \bar{d} - ‘by’ as in (b). A noun with these roles following a verb without a preposition is in genitive case, marked by a tone change, as in (c). The noun *aggáár* ‘hunter’ of (c) has LH root tone melody which switches to ML tone melody in genitive case.

³⁸ As discussed in 10.2.2, root tone of Mid root tone melodies becomes MH in incomplete and complete verbs with agented passive clitic.

(12) **Clauses with agented passives**

- (a) gààr cúó . . . nām-án = ɛ́ ɛ́ káé-gg = à
 pork sweet /nam/eat-CONT.P=PAS.A GP witchdoctor-PL=DEF
 ‘Sweet pork . . . was being eaten by witchdoctors.’
- (b) jāām kóðm-s = ɪ́ ɔ́-éēn wá.
 someone /káàm/bothered.CAUS-COMP = PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)
- (c) nāms ɲáó-s = ɛ́ ǎggààr
 food /ɲaw/need-COMP=PAS.A hunter.GEN
 ‘Food is needed by the hunter.’

14.5.2 Middle

The verb of (13) has a middle form where the speaker indicates that it is unknown whether there is an implied agent or not. The middle form is distinguished from the active form by the vowel specified as [+ATR] and by a tone change, which is the same tone change as in clauses with post-verbal agents such as (11). Because of lack of data collected, it cannot be determined if first or second person subjects are possible with middle verbs.

(13) **Middle (with or without an implied agent)**

- (a) gùlḍūn ɲǎm-só (b) gùlḍūgg ɲǎm-sò
 branch.DEF break.MID-COMP branch.PL break.MID-COMP
 ‘The branch broke.’ ‘The branches broke.’

14.5.3 Passive

In agentless passive verbs, the speaker indicates an implied, unstated agent which could be known or unknown. The clitic = ǎnǎ attaches to stems with vowel-final suffixes and the clitic = ǎ attaches to stems with consonant-final suffixes or suffixless stems. Passive clitics do not agree in number with the syntactic subject (semantic patient), and do not attach the agented passive clitic.

(14) **Passive (implied agent)**

- (a) gùlḍūn ɲām-s = ǎnǎ (b) gùlḍūgg ɲām-s = ǎnǎ
 branch break-COMP=PAS branch.PL break-COMP=PAS
 ‘The branch was broken.’ ‘The branches were broken.’

In passive clauses, a noun with the role of theme or patient normally takes the place of the syntactic subject, occurring before the passive verb, as in (15a). However, when there is focus on the passive verb, the noun follows the verb, as in (b).

(15) **Passive clauses**

- (a) kólóḍ-ḍ ḍùr-s = **ānḍ**
 egg-DEF /ḍur/bury-COMP=PAS
 ‘The egg was buried.’ (Fand21)
- (b) fěḍ-ān = **á** jègg = ā ṭáḍ
 /fɛ/put-CONT.P-PAS things=DEF down
 ‘Things were being laid down.’ (Fand27-28)

14.5.4 Antipassive

In antipassive clauses, the speaker indicates an implied, unknown object (patient, theme, or experiencer). Such verb forms are marked by the antipassive suffix *-An* which attaches to the verb root before inflectional suffixes are added. As in active clauses, agents can also be post-verbal in antipassive clauses. In such clauses, verbs are marked with the agented passive clitic = \acute{E} /= $\acute{E}\acute{E}$ as shown in (17).

(16) **Antipassive (unknown patient)**

- (a) jēn nām-**án**-sá (b) jōgg nām-**án**-sà
 person break-ANTIP-COMP people break-ANTIP-COMP
 ‘The person broke something.’ ‘The people broke something.’

(17) **Antipassive, agented passive verb (unknown patient)**

- (a) nām-**án**-s = **ē** jēn (b) nām-**án**-s = **ēē** jōgg
 break-ANTIP- person. break-ANTIP- people.
 COMP=PAS.A GEN COMP=PAS.A GEN
 ‘Something was broken by the person.’ ‘Something was broken by the people.’

Further, passive antipassive clauses are used to indicate an implied agent and unknown patient, being marked by the antipassive suffix *-An* and passive clitic = $\acute{A}n\acute{A}$.

(18) **Passive antipassive (implied agent, unknown patient)**

- nām-**án**-s = **āná**
 break-ANTIP-COMP=PAS
 ‘Something was broken.’

14.5.5 Causative

Causative clauses are used to indicate the reason or initiative of the action being a different argument than that which does the action. Causative verbs then add a second argument to intransitive clauses and a third argument to transitive clauses. They are marked by the vowel specified as [+ATR] and by the causative suffixes

-s⁺A, -ǵ⁺A.

In (19), the reason or initiative for breaking is from *àggáár* ‘hunter’, but the actual breaking is done by *jēn* ‘person’. As shown in (20), causative clauses can also have post-verbal agents, being marked by the agented passive clitic =*Ē*.

(19) **Causative (3 arguments)**

AGENT		EXPERIENCER	PATIENT
àggáár	ɲǎm-só	jēn	gùlǵū = n
hunter	break.CAUS-COMP	person	branch=DEF

‘A hunter made the person break the branch.’

(20) **Causative, agented passive verb (3 arguments)**

gùlǵū = n	ɲǎm-s-ǵ	àggāâr(-è)	jēn
branch=DEF	break.CAUS-COMP-PAS.A	hunter.GEN	person

‘A branch was broken by a hunter making the person break it.’

When dative clauses become causative, a fourth argument is added as shown in (21).

(21) **Causative dative (4 arguments)**

AGENT		EXPERIENCER	THEME	RECIPIENT
àggáár	gǎ̀- <i>s</i> ó	jēn	mīi	kàmàlǵg = ān
hunter	give.CAUS-COMP	person	goat	woman=DAT

‘A hunter made the person give a goat to the woman.’

Antipassive causative clauses indicate that one or more of the non-agent arguments are unknown. The same verb form is used regardless of which of the non-agent arguments or how many of them are unknown. Antipassive causative clauses with post-verbal agents also have the same form regardless of which non-agent argument or how many are unknown. In (22-23) the patient is unknown, in (24-25) the experiencer is unknown, and in (26-27) the patient and experiencer are unknown.

(22) **Antipassive causative (unknown patient)**

àggáár	ɲǎm- <i>ǎn</i> -só	jēn
hunter	break.CAUS-ANTIP-COMP	person

‘A hunter made the person break something.’

(23) **Antipassive causative, agented passive verb (unknown patient)**

jēn	ɲǎm- <i>ǎn</i> -s = ǵ	àggāâr(-è)
person	break.CAUS-ANTIP-COMP=PAS.A	hunter.GEN

‘The person was made to break something by a hunter.’

- (24) **Antipassive causative (unknown experiencer)**
 àggáár nóm-ǫn-só gùlǫ̀n
 hunter break.CAUS-ANTIP-COMP branch.DEF
 ‘A hunter made someone break the branch.’
- (25) **Antipassive causative, agented passive verb (unknown experiencer)**
 gùlǫ̀n nóm-ǫn-s=ǐ āggā̀r(-è)
 branch.DEF break.CAUS-ANTIP-COMP=PAS.A hunter.GEN
 ‘The branch was broken by a hunter making someone break it.’
- (26) **Antipassive causative (unknown patient & experiencer)**
 àggáár nóm-ǫn-só
 hunter break.CAUS-ANTIP-COMP
 ‘A hunter made someone break something.’
- (27) **Antipassive causative, agented passive verb (unknown patient & experiencer)**
 nóm-ǫn-s=ǐ āggā̀r(-è)
 break.CAUS-ANTIP-COMP=PAS.A hunter.GEN
 ‘Something was broken by a hunter making someone break it.’

Passive causative clauses are used to indicate an implied, unstated agent of a causative verb. The patient such as *gùlǫ̀n* ‘branch’ in (28) is the syntactic subject. The noun *jēn* ‘person’ is an experiencer which does the action at the initiative of an unstated agent such as *àggáár* ‘hunter’.

- (28) **Passive causative (implied agent)**
 gùlǫ̀n nóm-s=ǎnǎ́ jēn
 branch.DEF break.CAUS-COMP-PAS person
 ‘The person was made to break the branch.’

Finally, passive causative antipassive clauses indicate an implied agent and one or

- (29) **Passive causative antipassive (implied agent, unknown patient)**
 jēn nóm-ǫn-s=ǎnǎ́
 person break.CAUS-ANTIP-COMP=PAS
 ‘The person was made to break something.’
- (30) **Passive causative antipassive (implied agent, unknown experiencer & patient)**
 nóm-ǫn-s=ǎnǎ́
 break.CAUS-ANTIP-COMP=PAS
 ‘Someone was made to break something.’

more unknown non-agent arguments.

14.6 Non-verbal clauses

There are two sets of copulas with which all non-verbal clauses are formed. The most common set of copulas are shown in table 57 and are used for adjectival, possessive, and equative clauses. A second set is used for locative and presentational clauses, which will be presented shortly. With the limited data collected, it could not be determined how existential clauses, if possible, are constructed.

Table 57: Common copulas

	Non-past SG	Non-past PL	Past continuous
Copula	tā	tā	tā-án
Copular clitic on consonant-final noun phrases	---	= Ǻ	
Copular clitic on vowel-final noun phrases	= n		

In non-verbal clauses, the copula *tā* can be used as in (31a) or the past continuous copula *tā-án* can be used. However, it is also common for a copular clitic = Ǻ to attach to the final word of a clause as in (c). Although the independent past continuous copula *tā-án* can be used for past reference, the copular clitic cannot.

(31) **Non-verbal clauses**

- (a) gùrūūs-úgg-ú **tā** tù wá
 money-PL-DEF COP there not
 ‘There is no money.’ (Fand16)

- (b) Bḕ̀l mán **tā-án** tù
 metal certain COP-CONT.P there
 ‘There was a certain metal token’ (Fand8)

- (c) t́́-gg-ó d̀̀mā-gg=Ǻ
 cow-PL-DEF blind-PL=COP
 ‘The cows are blind.’

In answer to the question *jīn néé* ‘What is this?’ or *jíggì néé* ‘What are these?’, the copular clitic attached to a single noun is a clause in itself.

- (32a) t́́= n (b) t́́-gg=Ǻ
 cow = COP cow-PL = COP
 ‘(This) is a cow.’ ‘(these) are cows.’

As will be seen, there is no difference in the clausal construction between adjectival clauses and nominal non-verbal clauses. However, as mentioned in 8.3.1, there is a morphological difference in the copular clitic attached to consonant-final nouns (=A) and the copular clitic attached to consonant-final adjectives (no marking).

14.6.1 Adjectival clauses

In (33), singular and plural adjectival clauses are shown—with the copula *tā* in (a-b) and with the copular clitic in (c-d). There is no copular clitic marking on singular consonant-final adjectives as in (c). The clitic on vowel-final singular adjectives is =*n* as in (e). The clitic =*A* on plural adjectives takes the [ATR] quality of the adjective word.

(33) Adjectival clauses

- | | |
|---------------------------|------------------------------|
| (a) t̥s̥s̥ t̥ā s̥ɛ̃g̃g̃ār | (b) t̥s̥-gg t̥ā s̥ɛ̃g̃g̃ār-g |
| cow COP strong | cow-PL COP strong-PL |
| ‘A cow is strong.’ | ‘Cows are strong.’ |
| (c) t̥s̥s̥ s̥ɛ̃g̃g̃ār | (d) t̥s̥-gg s̥ɛ̃g̃g̃ār-g = ǎ |
| cow strong | cow-PL strong-PL = COP |
| ‘A cow is strong.’ | ‘Cows are strong.’ |
| (e) t̥s̥s̥ ɖ̥əm̥ = n | (f) t̥s̥-gg ɖ̥əm̥-gg = ǎ |
| cow blind = COP | cow-PL blind-PL = COP |
| ‘A cow is blind.’ | ‘Cows are blind.’ |

In the adjectival clauses of (34), the initial noun phrases are marked for definiteness.

(34) Definite adjectival clauses

- | | |
|------------------------------------|--|
| (a) t̥s̥s̥ = n s̥ɛ̃g̃g̃ār | (b) t̥s̥-gg-ǎ s̥ɛ̃g̃g̃ār-g = ǎ |
| cow = DEF strong | cow-PL-DEF strong-PL = COP |
| ‘The cow is strong.’ | ‘The cows are strong.’ |
| (c) c̥s̥l s̥ɛ̃g̃g̃ār = ǎ ɖ̥əm̥ = n | (d) c̥s̥l-ēēgg s̥ɛ̃g̃g̃ār-g = ǎ ɖ̥əm̥-gg = ǎ |
| donkey strong = blind = | donkey- strong- blind- |
| DEF COP | PL PL = DEF PL = COP |
| ‘The strong donkey is blind.’ | ‘The strong donkeys are blind.’ |

Demonstratives are not used pronominally. Instead, the indefinite adjective *mān/ b̥iigg* ‘certain’ can be used as in (35a-b). Otherwise, demonstratives can be used as in (c-f).

(35) **Demonstratives in copular clauses**

- | | |
|--|--|
| <p>(a) ተሥ ሙን ቢሙ = n
 cow certain blind = COP
 ‘A certain cow is blind.’
 ‘This is a blind cow.’</p> | <p>(b) ተሥ-ገገ ሙን ቢሙ-ገገ = ፈ
 cow-PL certain.PL blind-PL = COP
 ‘Certain cows are blind.’
 ‘These are blind cows.’</p> |
| <p>(c) ተሥ ከቢ ቢሙ = n
 cow this blind = COP
 ‘This cow is blind.’
 ‘This is a blind cow.’</p> | <p>(d) ተሥ-ገገ ከቢ ቢሙ-ገገ = ፈ
 cow-PL these blind-PL = COP
 ‘These cows are blind.’
 ‘These are blind cows.’</p> |
| <p>(e) ተሥ ከቢ ልሙ = ፈ
 cow this 1sPs = COP
 ‘This cow is mine.’
 ‘This is my cow.’</p> | <p>(f) ተሥ-ገገ ከቢ ልሙገገ = ፈ
 cow-PL these 1sPp = COP
 ‘These cows are mine.’
 ‘These are my cows.’</p> |

14.6.2 Possessive clauses

Clause-initial noun phrases of possessive copular clauses can be unmarked for definiteness as in (36a-b) or marked for definiteness as in (c-f).

(36) **Possessive copular clauses**

- | | |
|--|--|
| <p>(a) ተሥ ልሙ = ፈ
 cow 1sPs = COP
 ‘a cow is mine.’</p> | <p>(b) ተሥ-ገገ ልሙገገ = ፈ
 cow-PL 1sPp = COP
 ‘cows are mine.’</p> |
| <p>(c) ተሥ = n ልሙ = ፈ
 cow = DEF 1sPs = COP
 ‘The cow is mine.’</p> | <p>(d) ተሥ-ገገ = ፍ ልሙገገ = ፈ
 cow-PL = DEF 1sPp = COP
 ‘The cows are mine.’</p> |
| <p>(e) ተሥ = n ሰገገር ልሙ = ፈ
 cow = strong 1sPs =
 DEF COP
 ‘The strong cow is mine.’</p> | <p>(f) ተሥ-ገገ ሰገገር-ገገ = ፈ ልሙገገ = ፈ
 cow-PL strong-PL = 1sPp =
 DEF COP
 ‘The strong cows are mine.’</p> |

It is also possible to have two copular clitics attached to two coordinate constituents

- (37a) ተሥ ከቢ ቢሙ = **n** ልሙ = **ፈ**
 cow this blind = COP 1sPs = COP
 ‘This cow is blind and mine.’
- (b) ተሥ-ገገ ከቢ ቢሙ-ገገ = **ፈ** ልሙገገ = **ፈ**
 cow-PL these blind-PL-COP 1sPp = COP
 ‘These cows are blind and mine.’

of the predicate.

With the limited data collected, it could not be determined if nominal predicates are possible in possessive clauses. However, they are possible in equative clauses as shown in (38a-b) below.

14.6.3 Equative clauses

The copular clitic is also used in equative clauses. As in other past tense non-verbal clauses, past tense equative clauses are formed with the past continuous copula *tā-án* as in (38b).

(38) **Equative copular clauses**

- (a) *jēn* *bàà.ṽ = n* (b) *jēn* *tāán* *bààḽ*
 person father=COP person COP.CONT.P father
 ‘The person is a father.’ ‘The person was a father.’

- (c) *fēēt̃fā = n* *jēn* *dù.ī = n*
 Feetfā=DEF person black=COP
 ‘Feetfā is a black person.’

There is no difference in the clausal construction between adjectival clauses as in (33) of 14.6.1 and the nominal non-verbal clauses in (38).

14.6.4 Locative clauses

Non-past locative and presentational non-verbal clauses are formed with a different set of copulas. Past tense locative clauses are formed with the past continuous copula *tā-án*.

Table 58: Non-past locative and presentational copulas

	SG	PL
Locative copula	<i>íin, éēn</i>	<i>ēggàn</i>
Locative copular clitic in noun phrase	<i>= Ān</i>	<i>= Ān</i>
Locative copular clitic in relative clause	<i>= ÉĒn</i>	<i>= ÈÈ</i>

The singular locative copula *íin, éēn* has free variation in vowel quality independent of the [ATR] quality of the words surrounding it. The noun phrase of locative clauses can be unmarked for definiteness as in (39a-b) or definite as in (c-d). In either, the copular clitic *=Ān* can take the place of *íin*.

(39) **Singular locative clauses**

- (a) *jāā* *bānḍāl* ***fin*** *wéé* *bèŋɲ*
 person weak LCM house beside
 ‘A weak person is beside a house.’
- (b) *jāā* *bānḍāl* = ***ān*** *wéé* *bèŋɲ*
 person weak=LCM house beside
 ‘A weak person is beside a house.’
- (c) *jāā* = n *bānḍāl* = (***ā***) ***fin*** *wéé* *bèŋɲ*
 person=DEF weak=(DEF) LCM house beside
 ‘The weak person is beside a house.’
- (d) *jāā* = n *bānḍāl* = ***ān*** *wéé* *bèŋɲ*
 person=DEF weak=LCM house beside
 ‘The weak person is beside a house.’

The plural locative copula is *ēggàn*. The copular clitic =*Ān* can take the place of *ēggàn* when attached to noun phrases unmarked for definiteness as in (40a-b) or when attached to definite noun phrases as in (c-d).

(40) **Plural locative clauses**

- (a) *jōgg* *bānḍāl-g* ***ēggàn*** *wéé* *bèŋɲ*
 people weak-PL LCM house beside
 ‘Weak people are beside a house.’
- (b) *jōgg* *bānḍāl-g* = ***ān*** *wéé* *bèŋɲ*
 people weak-PL=LCM house beside
 ‘Weak people are beside a house.’
- (c) *jōgg* *bānḍāl-g* = ***à*** ***ēggàn*** *wéé* *bèŋɲ*
 people weak-PL=DEF LCM house beside
 ‘The weak people are beside a house.’
- (d) *jōgg* *bānḍāl-g* = ***ān*** *wéé* *bèŋɲ*
 people weak-PL=LCM house beside
 ‘The weak people are beside a house.’

14.6.5 Presentational clauses

Presentational clauses are formed with the same copulas as locative clauses, along with the adverb *ɲù* ‘there’. The copular clitic =*Ān* can take the place of *fin* when attached to an unmarked noun phrase as in (41b) or when attached to a definite noun phrase as in (d).

(41) **Singular presentational clauses**

- (a) ʔóó sèggār **īn** ʔù (b) ʔóó sèggār = **ān** ʔù
 cow strong LCM there cow strong=LCM there
 ‘There is a strong cow.’
- (c) ʔóó = n sèggār **īn** ʔù (d) ʔóó = n sèggār = **ān** ʔù
 cow=DEF strong LCM there cow=DEF strong=LCM there
 ‘There is the strong cow.’

Similarly, the copular clitic =*Ān* can take the place of *ēggàn* when attached to an unmarked plural noun phrase as in (42b) or when attached to a definite plural noun phrase as in (d).

(42) **Plural presentational clauses**

- (a) ʔó-gg sèggār-g **ēggàn** ʔù (b) ʔó-gg sèggār-g = **ān** ʔù
 cow-PL strong-PL LCM there cow-PL strong-PL=LCM there
 ‘There are strong cows.’
- (c) ʔó-gg sèggār-g = **à** **ēggàn** ʔù (d) ʔó-gg sèggār-g = **ān** ʔù
 cow-PL strong- LCM there cow-PL strong- there
 PL=DEF PL=LCM
 ‘There are the strong cows.’

Past tense presentational clauses must use the copula *ʔā-án*.

(43) **Past tense presentational clauses**

- (a) ʔóó **ʔāán** ʔù (b) ʔó-gg **ʔāán** ʔù
 cow COP.CONT.P there cow-PL COP.CONT.P there
 ‘There was a cow.’ ‘There were cows.’

14.6.6 Non-verbal question clauses

The question marker *à* indicates a question with a yes/no response and can mark non-verbal or verbal question clauses. This section discusses how it is used in non-verbal questions and section 15.3 presents its use in verbal questions. Question clauses have the same construction as equivalent declarative clauses except for the question marker.

The question marker for non-verbal clauses is most commonly clause-final. The question marker *à* is independent from stems, evidenced by lack of [ATR] quality change in the question marker in (44b).

- (44a) $\text{ʔʕʕ} = \text{n}$ $\text{s}\bar{\text{e}}\text{g}\bar{\text{a}}\text{r}$ $\bar{\text{a}}$ (b) $\text{ʔʕʕ} = \text{n}$ $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}} = \text{n}$ $\bar{\text{a}}$
 cow = DEF strong QM cow = DEF blind = COP QM
 ‘Is the cow strong?’ ‘Is the cow blind?’

When the copular clitic = $\bar{\text{A}}$ is at the same place in the clause as the question marker, it is joined to the question marker (45b) instead of to the word it follows as in declarative clauses such as (45a).

- (45a) $\text{ʔʕ-gg} = \text{ʕ}$ $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}}\text{-g} = \text{ɔ}$ (b) $\text{ʔʕ-gg} = \text{ʕ}$ $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}}\text{-g}$ $\bar{\text{a}} = \bar{\text{a}}$
 cow-PL = blind- cow-PL = strong-PL COP = QM
 DEF PL = COP DEF
 ‘The cows are blind.’ ‘Are the cows blind?’

The question marker is shown in demonstrative copular clauses (46a-b), adjectival clauses (c-f), equative clauses (g-h), and presentational clauses (i-j). In (e-f), the predicate is fronted for focus, and the copula and question marker are fronted along with it.

(46) **Non-verbal question clauses**

- (a) $\text{ʔʕʕ} = \text{n}$ ($\text{n}\bar{\text{e}}\bar{\text{e}}\bar{\text{e}}$) $\bar{\text{a}}$ (b) $\text{ʔʕ-gg} = \text{ɔ}$ ($\text{n}\bar{\text{e}}\bar{\text{e}}$) $\bar{\text{a}}$
 cow = COP this QM cow-PL = COP these QM
 ‘Is this a cow?’ ‘Are these cows?’
- (c) $\text{ʔʕʕ} = \text{n}$ $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}} = \text{n}$ $\bar{\text{a}}$ (d) $\text{ʔʕ-gg} = \text{ʕ}$ $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}}\text{-g}$ $\bar{\text{a}} = \bar{\text{a}}$
 cow = DEF blind = COP QM cow-PL = DEF strong-PL COP = QM
 ‘Is the cow blind?’ ‘Are the cows blind?’
- (e) $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}} = \text{n}$ $\bar{\text{a}}$ ʔʕʕ-n (f) $\text{ɖ}\bar{\text{a}}\text{m}\bar{\text{o}}\text{-g}$ $\bar{\text{a}}\text{-}\bar{\text{a}}$ $\text{ʔʕ-gg} = \text{ʕ}$
 blind = COP QM cow-DEF strong-PL COP-QM cow-PL = DEF
 ‘Is the cow blind?’ ‘Are the cows blind?’
- (g) $\text{j}\bar{\text{e}}\bar{\text{e}}\text{m}$ $\text{n}\bar{\text{e}}\bar{\text{e}}$ $\text{ʔʕʕ} = \text{n}$ $\bar{\text{a}}$ (h) $\text{j}\bar{\text{e}}\text{gg}$ $\text{n}\bar{\text{e}}\bar{\text{e}}$ $\text{ʔ}\text{gg}$ $\bar{\text{a}}\text{-}\bar{\text{a}}$
 thing this cow = COP QM things these cow-PL COP-QM
 ‘Is this thing a cow?’ ‘Are these things cows?’
- (i) $\text{ʔʕʕ} = \text{n}$ $\text{ʔ}\bar{\text{u}}$ $\bar{\text{a}}$ (j) $\text{ʔʕ-gg} = \text{ʕn}$ $\text{ʔ}\bar{\text{u}}$ $\bar{\text{a}}$
 cow = LCM there QM cow-PL = LCM there QM
 ‘Is there a cow?’ ‘Are there cows?’

14.6.7 Non-verbal negative clauses

The negative particle *wá* is clause final and does not attach to the word it follows. Non-verbal negative clauses have the same construction as equivalent affirmative clauses except for the negative marker. The negative marker is shown in

demonstrative copular clauses (47a-b), adjectival clauses (c-d), presentational clauses (e-f), and past presentational clauses (g-h).

(47) **Non-verbal negative clauses**

- (a) ʔóɔ̃ = n wá (b) ʔó-gg = ð wá
 cow = COP not cow-PL = COP not
 ‘(This) is not a cow.’ ‘(These) are not cows.’
- (c) ʔóɔ̃ = n ðòmō = n wá (d) ʔó-gg = ó ðòmō-g = ð wá
 cow = DEF blind = COP not cow-PL = DEF strong-PL = COP not
 ‘The cow is not blind.’ ‘The cows are not blind.’
- (e) ʔóɔ̃ = n ʔù wá (f) ʔó-gg = ɔ̃n ʔù wá
 cow = LCM there not cow-PL = LCM there not
 ‘There is no cow.’ ‘There are no cows.’
- (g) ʔóɔ̃ = n ʔāán ʔù wá (h) ʔó-gg = ɔ̃n ʔāán ʔù wá
 cow = COP. there not cow- COP. there not
 LCM CONT.P PL = LCM CONT.P
 ‘There was no cow.’ ‘There were no cows.’

14.7 Relative clauses

Relative clauses are introduced with the relativizer *ná/nà* ‘who, which, that’ which agrees in number with the head noun it follows. Relative clauses have been attested to modify noun subjects as in (48), objects as in (49), and copular complements as in (50).

- (48) jēn ná ón = í ē pəl-i táɖ ɖ-ŋ-mù-ɖ-gg.
 person REL.SG bad = RDM 3sN fall-it down PP-3pO-front-PL
 ‘The person which was bad fell down in front of them.’ (Thng7-8)
- (49) kórá kōr ná ón = í.
 speaks word REL.SG bad = RDM
 ‘She speaks rudely (lit. the word which bad).’ (Assa6)
- (50a) càr néé = n é sālāɖ = à è âɖ è jēgg
 tale this = DEF of hyena.GEN = COP of fox.GEN of thing.PL.GEN
 ‘This story is about a hyena, fox, and some
- (b) é lēl-ēēgg = à bígg nà àn-n léél-éēgg = è
 of grass.GEN-PL = COP some REL.PL stay-INF grass-PL = RDM
 wild forest animals (lit. some things that live in the grass).’ (Nyee1-2)

The relativizer *ná/nà* can also be used pronominally as in (51).

- (51) **nà** āgg biɣɣə dáāgg é ɲɔ̄ɔ̄gg=í
 REL.PL 1pN left two in behind=SBO
 ‘Those which we left behind . . .’ (Thng7)

Relative clauses differ from subordinate clauses in the conjunctions introducing the clause, in the clause-final clitics, and in marking for definiteness. As will be discussed in 15.2, the subordinate conjunctions *é gārā* ‘when, while’, *é kōrā* ‘because’, (*ār*) ‘if’, *wār* ‘but’ introduce subordinate clauses instead of the relativizer *ná/nà*. As shown in 7.7 and 8.3.8, the clause-final subordinate clitic is always =É̄ with High tone, whereas the relative clause clitic agrees in number with the head noun =É̄/=Ē̄. Finally, subordinate clauses are not distinguished for definiteness, but many relative clauses are.

Relative clauses can take the place of noun modifiers which are either marked or unmarked for definiteness. Thus, relative clauses are also marked or unmarked for definiteness. In (48-50), the relative clauses are definite, whereas in (51) the relative clause is unmarked for definiteness. Most commonly the head noun is unmarked for definiteness if the relative clause has a definite clitic. Singular definite clitics on relative clauses have High tone and plural definite clitics have Low tone.

Table 59: Definite relative clause clitics

	SG	PL
Short	=É̄	=Ē̄

In noun phrases with dative, accompaniment, and subordinate clitics, there is no marking for definiteness and the noun phrases are ambiguous for definiteness. However, in relative clauses with such nouns, there is a definiteness distinction, except with dative relative clauses which cannot attach a dative clitic to semantically indefinite relative clauses. Some clitics such as the dative merge with the definite relative clause clitic (=É̄=Ān becomes =É̄Ē̄n), but other clitics such as the accompaniment and subordinate follow the definite relative clause clitic (=É̄=nĒ̄ becomes =É̄Ē̄=nĒ̄, where =nĒ̄ is the accompaniment clitic attaching to vowel-final stems). This definite marking is shown in (52) where the same definite relative clause clitics attach to clause-final nouns, adjectives and verbs—all consonant-final. Dashes indicate there are no clitics on the clause-final word, whereas an x indicates the word category cannot occur as definite.

(52) **Definite with dative, accompaniment, and subordinate markers on consonant-final words**

Final	SG		PL		SG		PL	
			DEF	DEF	REL	REL	RDM	RDM
N	---	-gg	=Á	=Á	---	---	=É	=È
ADJ	---	-gg	=Á	=À	---	---	=É	=È
V	H	L	x	x	---	---	=É	=È
N DAT	=Án	=Án	=Án	=Án	x	x	=ÉÈn	=ÈÈn
ADJ DAT	=Án	=Án	=Án	=Án	x	x	=ÉÈn	=ÈÈn
V DAT	x	x	x	x	---	---	=ÉÈn	=ÈÈn
N ACM	=É	=É	=É	=É	=É	=É	=ÉÉ=nÈ	=ÈÈ=nÈ
ADJ ACM	=É	=É	=É	=É	=É	=É	=ÉÉ=nÈ	=ÈÈ=nÈ
V ACM	x	x	x	x	---	---	=ÉÉ=nÈ	=ÈÈ=nÈ
N SBO	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÈ
ADJ SBO	=É	=É	=É	=É	=É	=É	=ÉÉ=nÉ	=ÈÈ=nÈ
V SBO	x	x	x	x	---	---	=ÉÉ=nÉ	=ÈÈ=nÈ

In (53), nouns, adjectives and verbs are shown at the end of noun phrases and at the end of relative clauses. Each phrase is also shown unmarked and marked for definiteness. The singular definite relative clause marker is =É and the plural definite relative clause marker is =È.

(53) **Definite markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár	àggáár = á	'hunter'
	jāā ná àggáár	jāā ná àggáár = é	'person who is hunter'
ADJ SG	jāā bánḍāl	jāā = n bánḍāl = (á)	'weak person'
	jāā ná bánḍāl	jāā ná bánḍāl = é	'person who is weak'
V SG	jāā ḥāḥ	jāā = n ḥāḥ	'person files'
	jāā ná ḥāḥ	jāā ná ḥāḥ = é	'person who files'
N PL	àggáár-g	àggáár-g = á	'hunters'
	jōgg nà àggáár-g	jōgg nà àggáár-g = è	'people who are hunters'
ADJ PL	jōgg bánḍāl-g	jōgg = (ḍ) bánḍāl-g = à	'weak people'
	jōgg nà bánḍāl-g	jōgg nà bánḍāl-g = è	'people who are weak'
V PL	jōgg ḥāḥ	jōgg = ó ḥāḥ	'people file'
	jōgg nà ḥāḥ	jōgg nà ḥāḥ = è	'people who file'

In (54), nouns, adjectives and verbs are again shown at the end of noun phrases and at the end of relative clauses, this time with the dative clitic. In noun phrases with an attached dative clitic, the phrase is ambiguous for definiteness, as the dative clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. And, the distinction cannot be made by adding a definite marker to the head noun in noun phrases with adjectives, such as in *jāā-n bánḍāl-ān. In relative clauses, unlike other clitics, semantically indefinite dative nouns modified by a

relative clause are impossible, such as **jāā ná bāṇḍāl = ān*. When the dative clitic attaches to definite relative clauses, it merges with the definite relative clause marker: =É=Ān becomes =ÉĒn in singular clauses and =Ē=Ān becomes =ĒĒn in plural clauses.

(54) **Dative markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár = ān	àggáár = ān	‘to hunter’
	*jāā ná àggáár = ān	jāā ná àggáár = éĒn	‘to person who is hunter’
ADJ SG	jāā bāṇḍāl = ān	jāā bāṇḍāl = ān	‘to weak person’
	*jāā ná bāṇḍāl = ān	*jāā = n bāṇḍāl = ān	
		jāā ná bāṇḍāl = éĒn	‘to person who is weak’
V SG	jāā ná ṇāṇ	jāā ná ṇāṇ = éĒn	‘to person who files’
N PL	àggáár-g = ān	àggáár-g = ān	‘to hunters’
	*jōgg nà àggáár-g = ān	jōgg nà àggáár-g = èĒn	‘to people who are hunters’
ADJ PL	jōgg bāṇḍāl-g = ān	jōgg bāṇḍāl-g = ān	‘to weak people’
		*jōgg = ś bāṇḍāl-g = ān	
	*jōgg nà bāṇḍāl-g = ān	jōgg nà bāṇḍāl-g = èĒn	‘to people who are weak’
V PL	jōgg nà ṇāṇ	jōgg nà ṇāṇ = èĒn	‘to people who file’

As with dative clitics, in noun phrases with an attached accompaniment clitic =Ē, the phrase is ambiguous for definiteness, as the accompaniment clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. However unlike dative clitics in relative clauses, there is a definiteness distinction for accompaniment nouns modified by a relative clause, as unmarked relative clauses attach the accompaniment clitic alone and definite relative clauses attach the accompaniment clitic (for vowel-final stems =nĒ) following the definite relative clause clitic: =ÉĒ=nĒ in the singular clauses and =ĒĒ=nĒ in plural clauses.

(55) **Accompaniment markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár = ē	àggáár = ē	‘with hunter’
	jāā ná àggáár = ē	jāā ná àggáár = éé = nē	‘with person who is hunter’
ADJ SG	jāā bāṇḍāl = ē	jāā bāṇḍāl = ē	‘with weak person’
		*jāā = n bāṇḍāl = ē	
	jāā ná bāṇḍāl = ē	jāā ná bāṇḍāl = éé = nē	‘with person who is weak’
V SG	jāā ná ṇāṇ	jāā ná ṇāṇ = éé = nē	‘with person who files’

Final	Unmarked	Definite	
N PL	àggáār-g = ɛ̃	àggáār-g = ɛ̃	‘with hunters’
	jɔ̃gg nà àggáār-g = ɛ̃	jɔ̃gg nà àggáār-g = ɛ̃ɛ̃ = nɛ̃	‘with people who are hunters’
ADJ PL	jɔ̃gg bánḍāl-g = ɛ̃	jɔ̃gg bánḍāl-g = ɛ̃	‘with weak people’
	jɔ̃gg nà bánḍāl-g = ɛ̃	*jɔ̃gg = ɔ̃ bánḍāl-g = ɛ̃ jɔ̃gg nà bánḍāl-g = ɛ̃ɛ̃ = nɛ̃	‘with people who are weak’
V PL	jɔ̃gg nà n̄ān	jɔ̃gg nà n̄ān = ɛ̃ɛ̃ = nɛ̃	‘with people who file’

Similarly, in noun phrases with an attached subordinate clause-final clitic, the phrase is ambiguous for definiteness, as the subordinate clitic and no other is attached regardless of whether the phrase is semantically definite or indefinite. However, in relative clauses, there is a definiteness distinction, as unmarked relative clauses attach the subordinate clitic alone and definite relative clauses attach the subordinate clitic (for vowel-final stems = *nÉ*) following the definite relative clause clitic: = *ÉÉ = nÉ* in singular clauses and = *ÈÈ = nÈ* in plural clauses where subordinate marker High tone is lowered following Low tone.

(56) **Subordinate *é gārā* markers on consonant-final words**

Final	Unmarked	Definite	
N SG	àggáár = ɛ̃	àggáár = ɛ̃	‘when . . . hunter’
	jāā ná àggáár = ɛ̃	jāā ná àggáár = ɛ̃ɛ̃ = nɛ̃	‘when . . . person who is hunter’
ADJ SG	jāā bánḍāl = ɛ̃	jāā bánḍāl = ɛ̃	‘when . . . weak person’
	jāā ná bánḍāl = ɛ̃	*jāā = n bánḍāl = ɛ̃ jāā ná bánḍāl = ɛ̃ɛ̃ = nɛ̃	‘when . . . person who is weak’
V SG	jāā ná n̄ān	jāā ná n̄ān = ɛ̃ɛ̃ = nɛ̃	‘when . . . person who files’
N PL	àggáār-g = ɛ̃	àggáār-g = ɛ̃	‘when . . . hunters’
	jɔ̃gg nà àggáār-g = ɛ̃	jɔ̃gg nà àggáār-g = ɛ̃ɛ̃ = nɛ̃	‘when . . . people who are hunters’
ADJ PL	jɔ̃gg bánḍāl-g = ɛ̃	jɔ̃gg bánḍāl-g = ɛ̃	‘when . . . weak people’
	jɔ̃gg nà bánḍāl-g = ɛ̃	*jɔ̃gg = ɔ̃ bánḍāl-g = ɛ̃ɛ̃ = nɛ̃ jɔ̃gg nà bánḍāl-g = ɛ̃ɛ̃ = nɛ̃	‘when . . . people who are weak’
V PL	jɔ̃gg nà n̄ān	jɔ̃gg nà n̄ān = ɛ̃ɛ̃ = nɛ̃	‘when . . . people who file’

When one or more relative clauses are within another relative clause, the definite relative clause marker can only attach to the final word of the final clause.

(57) **Definite markers on relative clauses within relative clauses**

Unmarked	Definite	
jāā ná bāṅḍāl ná àggáár	jāā ná bāṅḍāl ná àggáár = é *jāā ná bāṅḍāl = é ná àggáár *jāā ná bāṅḍāl = é ná àggáár = é	‘person who is weak who is hunter’
jōgg nà bāṅḍāl-g nà àggáár-g	jōgg nà bāṅḍāl-g nà àggáár-g = è *jōgg nà bāṅḍāl-g nà àggáár-g *jōgg nà bāṅḍāl-g nà àggáár-g = è	‘people who are weak who are hunters’

In genitive noun phrases or relative clauses, either marked or unmarked for definiteness, only the head noun undergoes a change in tone.

(58) **Genitive relative clauses**

Final	Unmarked	Definite	
ADJ SG	jāā bāṅḍāl jāā ná bāṅḍāl	jāā = n bāṅḍāl = (á) jāā ná bāṅḍāl = é	‘of weak person’ ‘of person who is weak’
ADJ PL	jōgg bāṅḍāl-g jōgg nà bāṅḍāl-g	jōgg = (ò) bāṅḍāl-g = à jōgg nà bāṅḍāl-g = è	‘of weak people’ ‘of people who are weak’

14.8 Evidentiality

The certainty of an action taking place is marked in the clause rather than on the verb. There are two degrees of certainty or evidentiality for both completive and incompleted verbs.

The normal completive form by itself is a statement of certainty. It states that it is certain the action is completed. Uncertainty in the completive form is indicated by the particle *lā* and optionally by the clause-final subordinate clitic =É. Both degrees of certainty in the completive are shown in (59).

(59) **Degrees of certainty in the completive**

- (a) ē kómsó māgàḍ ‘He cut.’ certainty
 (b) **lā** ē kómsó māgàḍ(=É) ‘He may have cut a stick.’ uncertainty

(60) **Completive uncertainty paradigms**

- (a) ‘may have bought’ (b) ‘may have buried’
- | | |
|-------------------------|-------------------------|
| lā á mār-sà 1sN | lā á ḍūr-sù 1sN |
| lā ó, ú = mār-sè 2sN | lā ó, ú = ḍūr-sù 2sN |
| lā ē mār-sā 3sN | lā ē ḍūr-sū 3sN |
| lā āgg mār-sà 1pN | lā āgg ḍūr-sù 1pN |
| lā ògg, ūg = mār-sè 2pN | lā ògg, ūg = ḍūr-sù 2sN |
| lā ēggà mār-sà 3pN | lā ēggà ḍūr-sù 3pN |
| PRON buy-COMP | PRON bury-COMP |

In (60), completive uncertainty paradigms show that the uncertainty particle occurs before the subject pronoun.

Similarly, the incomplete verb by itself is also a statement of certainty. It states that it is certain the action is ongoing or for certain will be ongoing. Adding the uncertainty particle *lā* before the incomplete verb or attaching the clause-final subordinate clitic =*Ē* indicates uncertainty in the future. With either marker, the other marker is optional.

(61) **Degrees of certainty in the incomplete**

- | | | | |
|-----|--------------------------------------|------------------------|-------------|
| (a) | kóm māgàḍ | ‘He will cut a stick.’ | certainty |
| (b) | é lā kóm māgàḍ(= Ē) | ‘He may cut a stick.’ | uncertainty |
| (c) | é (lā) kóm māgàḍ = Ē | ‘He may cut a stick.’ | uncertainty |

As mentioned in 9.6.2, tone is altered on subject pronouns of incomplete verbs to indicate future actions with certainty. The same future incomplete paradigms in 9.6.2 are given in (62) for ease of reference.

(62) **Future certainty incomplete paradigms**

- | | |
|-------------------------|--------------------------------------|
| (a) ‘will run’ | (b) ‘will bury the egg’ |
| ā gāl 1sN | ā ḍùr kólóḍ = ó 1sN |
| û = gəl 2sN | û = ḍùr kólóḍ = ó 2sN |
| é gāl 3sN | é ḍùr kólóḍ = ó 3sN |
| āggā gāl 1pN | āggā ḍùr kólóḍ = ó 1pN |
| ūggū = gəl 2pN | ūggū = ḍùr kólóḍ = ó 2sN |
| (Ēggà) é gāl 3pN | (Ēggà) é ḍùr kólóḍ = ó 3pN |
| PRON run. | PRON bury. egg=DEF |
| INCP | INCP |

Unlike in uncertain completive paradigms, in uncertain incomplete paradigms the uncertainty particle occurs after the subject pronoun. In second person forms, the particle attaches to the verb, thereby taking on [+ATR] quality. The same meaning

(63) **Future uncertainty incomplete paradigms**

- | | |
|---------------------------------|---|
| (a) ‘may run’ | (b) ‘may bury egg’ |
| á, ā lā gāl 1sN | (b) á, ā lā ḍùr kólóḍ = ó 1sN |
| ó, ̄, ú, û = l̄ = gəl 2sN | ó, ̄, ú, û = l̄ = ḍùr 2sN |
| ē, é lā gāl 3sN | ē, é lā ḍùr kólóḍ = ó 3sN |
| āgg(á) lā gāl 1pN | āgg(á) lā ḍùr kólóḍ = ó 1pN |
| ̄ggó, ̄ggó, 2pN | ̄ggó, ̄ggó, 2pN |
| ūgg(ú), ūggū = l̄ = gəl | ūgg(ú), ūggū = l̄ = ḍùr |
| ēggà lā gāl 3pN | ēggà lā ḍùr kólóḍ = ó 3pN |
| PRON run. | PRON bury. egg=DEF |
| INCP | INCP |

is communicated regardless of whether the future or non-future subject pronouns precede the uncertainty marker. Second person subject pronouns are optionally [+/- ATR] regardless of the [ATR] quality of the root vowel.

Although uncommon, it is possible for the subject pronoun to be repeated following the certainty marker and before the verb, as in (64).

- (64) á lā á gār fól
 1sN UNC 1sN dig.INCP hole
 ‘I may dig a hole.’

14.9 Noun phrases

14.9.1 Word order in the noun phrase

The noun phrase can be diagrammed in the order of (65). The head noun is followed by an optional possessive pronoun (POS), and one or more optional adjectives. More than one adjective in the same noun phrase is rare and no prescribed order in the noun phrase can be determined. It is also possible for demonstratives (DEM) to precede alienable possessive pronouns. The possessors of inalienable nouns—kinship terms and body parts—precede the possessed noun, and the possessors of alienable nouns follow the noun.

- (65) **Noun phrase word order**
 NP → (POS_{Inalienable}) N (POS_{Alienable}) ({DEM, NUM, ADJ_{Quan}, ADJ_{Qual}})

The adjectival clause of (66a) shows a noun phrase with three adjectives—a demonstrative, numeral, and adjective of quality. The possessive pronoun *ónègg = è* ‘mine=COP’ is a noun phrase complement of the non-verbal adjectival clause and the copula clitic is attached. In (b), the second singular possessive pronoun *ó* ‘your’ precedes the kinship term *yāā nāā* ‘aunt, younger mother (lit. mother girl)’—a compound noun phrase, which is followed by a demonstrative.

- (66) **Noun phrase word order**
 (a) ʔó-gg nì á sámán ɖùìgg = è ónègg = è
 cow-PL these five black=DEF 1sPp=COP
 ‘These five black cows are mine.’
 (b) è ó yāā nāā néé lèèn-án ɖūmùùn ɖ-ūūŋ ʔà
 and 2sPs mother girl this was.coming towards PP-2sO there
 ‘Your mother’s sister was coming to you there.’ (Assa3-4)

- (c) *bù* *fɪŋá-dǎ* *kɔ̄r* *ɔ̀n* *ní* *mā* *māŋ*
 let hear word 1sPs this very carefully
 ‘Listen carefully to what I am saying (lit. this my word)!’ (Womn3)
- (d) *bē-ēn* *ā* *wár-dā* *bààl-g=ā* *nèè* *ónègg* *kāē*
 /bɛg/say- SBJV /war/bring- instrument- these 1sPp all
 CONT.P SBJV PL=DEF
 ‘They were saying to bring all my wood instruments.’

In (c), the first singular possessive pronoun *ɔ̀n* ‘my’ follows the singular noun *kɔ̄r* ‘word’, being an alienable noun, and is followed by the demonstrative *ní* ‘this’. In (d), the third plural possessive pronoun *ónègg* ‘my’ follows the plural alienable noun *bààlgā* ‘instrument’. A demonstrative, possessive pronoun, and quantitative adjective are all present in the same noun phrase, where the demonstrative precedes the pronoun, possibly being fronted for emphasis.

Constructions with relative clauses are preferred above long noun phrases with multiple adjectives. In (67), the relativiser *nà* begins three separate relative clauses.

- (67) *ɬɔ̄gg* *ónègg* *nà* *ásámán* *nà* *wíðg* *nà* *ɖùigg=è* *ēggàn* *kālg*
 cows 1sPp REL five REL good REL black=RDM L.COP field
 ‘My five good black cows are in the field.’

14.9.2 Noun agreement

Adjectives, possessive pronouns, and demonstratives agree with nouns in number. Agreement is marked by the geminate velar segment *gg* or tone change. The plural adjective suffix *-gg* is shown in (68a-b) and the possessive pronouns *ónègg* and *ɔ̀yègg* are shown in (c-d). In (e-f), High tone in the demonstratives indicates a singular noun and Low a plural noun.

- (68) **Noun agreement**
- | | Noun SG | Noun PL | |
|-----|----------------------|--------------------------|------------------------|
| (a) | <i>kɔ̀lèèð ì</i> | <i>kɔ̀lèèð-g ì-gg</i> | ‘heavy sword’ |
| (b) | <i>ɬɔ̀ kɔ̀sɔ̀fār</i> | <i>ɬɔ̀gg kɔ̀sɔ̀fār-g</i> | ‘thin cow’ |
| (c) | <i>māā ɔ̀n</i> | <i>māā-gg ɔ̀nègg</i> | ‘my house’ |
| (d) | <i>māā ɔ̀yən</i> | <i>māā-g ɔ̀yègg</i> | ‘our house’ |
| (e) | <i>ɬɔ̀ néé</i> | <i>ɬɔ̀-<u>gg</u> nèè</i> | ‘this cow/ these cows’ |
| (f) | <i>ɬɔ̀ náá</i> | <i>ɬɔ̀-<u>gg</u> nàà</i> | ‘that cow/ those cows’ |

14.9.3 Possessive phrases

Possession of most nouns is expressed by the general preposition *ɛ̀* (GP) following the possessed noun and preceding the possessor. The possessor is in genitive case

which is marked only by a tone change. Examples (69b, d, f) are incorrect, but given for comparison with the examples of (70).

(69) **Noun possessive phrases**

- | | | | | | | |
|-----|---------------------|----|---------------|-----|--------|-----------|
| (a) | gàḍáàè | é | jên | (b) | *jēn | gàḍáàè |
| | basket | GP | person.GEN | | person | basket |
| | ‘basket of person’ | | | | | |
| (c) | gàḍáàè-gg | é | jên | (d) | *jēn | gàḍáàè-gg |
| | basket-PL | GP | person.GEN | | person | basket-PL |
| | ‘baskets of person’ | | | | | |
| (e) | gàḍáàè-gg | é | jôgg | (f) | *jôgg | gàḍáàè-gg |
| | basket-PL | GP | person.GEN-PL | | people | basket-PL |
| | ‘baskets of people’ | | | | | |

Although body part nouns can also be possessed by having the same construction as other nouns as shown in (70a, c, e), it is more common for the possessor of body part nouns to precede the body part without the general preposition and without being in genitive case as in (70b, d, f).

(70) **Body part noun possessive phrases**

- | | | | | | | |
|-----|------------------|----|---------------|-----|--------|--------|
| (a) | lúḍ | é | jên | (b) | jēn | lúḍ |
| | leg | GP | person.GEN | | person | leg |
| | ‘leg of person’ | | | | | |
| (c) | lú-ūgg | é | jên | (d) | jēn | lú-ūgg |
| | leg-PL | GP | person.GEN | | person | leg-PL |
| | ‘legs of person’ | | | | | |
| (e) | lú-ūgg | é | jôgg | (f) | jôgg | lù-ùgg |
| | leg-PL | GP | person.GEN-PL | | people | leg-PL |
| | ‘legs of people’ | | | | | |

In (71a), the possessor *ūfú* ‘tree’ precedes the body part noun *ḍḍḍ* ‘body’ it possesses. As seen in (71b), kinship terms may also form possession by the possessor preceding the possessed noun. In this case, the kinship term possessor *yáā* ‘mother’ precedes the noun *nāā* ‘girl’ it possesses.

- (71a) é gārā káhs-s=í ūfú-n=í, ē dḍḍs-s
 GP when struck-COMP=SBO1 hijliij.tree-DEF=SBO 3sN start-INF
 ‘When she struck the tree,

lôŋ ē wāŋ-ŋ sím ūfú ǝǝŋ.
 until 3sN went-INF down tree body
 (her horns) went deep into the tree (lit. into tree's body).' (Nyee 14-15)

- (b) ò ó yāā nāā néé lèèn-án ðūmùùn ɖ-ūūŋ ɬà
 and 2sPs mother girl this was.coming towards PP-2sO there
 'Your mother's sister (lit. your girl mother) was coming to you there.'
 (Assa3-4)

15 Sentence-level syntax

There is morphological marking in subordinate and interrogative clauses, and a discussion of sentence-level syntax is needed to understand these morphemes. In this chapter, we discuss types of clauses in sentences (15.1), coordinating and subordinating conjunctions (15.2), interrogative structures (15.3), as well as focus (15.4).

15.1 Clause combinations

Clauses may be nuclear (main, independent), pre-nuclear (dependent clause preceding a nuclear clause), or post-nuclear (dependent clause following a nuclear clause).

As in (1a), foregrounded nuclear clauses of narrative texts most commonly use infinitive verbs. However, in non-fiction narratives, a completive verb is also common, as shown in (b).

- (1a) $\bar{a}l\bar{d} = \acute{a}$ \bar{e} **d\bar{o}s-s** \bar{e} **b\bar{a}d-d** $b\bar{a}\bar{e} = n$ \acute{e} $s\bar{a}l\bar{a}d = \grave{a}$
 fox = 3sN start-INF 3sN break-INF jug = DEF GP hyena.
 DEF GEN = DEF
 ‘Fox punctured a hole in Hyena’s jug.’ (Nyee21)

- (b) $j\bar{a}d\bar{e}\bar{e}r = \bar{a}$ **w\bar{a}r-s\bar{a}** $k\bar{a}\eta$ $\hat{u}n\bar{i} = n$ \bar{e} $m\bar{a}d\bar{a}$
 Jader = DEF carried-COMP group 3sPs = DEF with big.size
 ‘Jadar led his very big group.’ (Fand23-24)

Pre-nuclear clauses are introduced with subordinate conjunctions, the most common of which is the conjunction \acute{e} *g\bar{a}r\acute{a}* ‘when’ which often introduces tail-head linkage. In the second line of (2), the subordinate clause refers to ‘an arrival at the well’ implied by the previous nuclear clause, before continuing with the next nuclear clause in the third line. In this way, the subordinate clause links new information with old information contained in the subordinate clause. The verbs of tail-head linkage are most commonly completive verbs, but can also be incomplete or past-continuous.

- (2) \bar{e} $d\bar{o}s-s$ \bar{e} $w\bar{a}j-j$ $\bar{d}\bar{u}m\bar{u}n$ $w\bar{a}\bar{a} = l\bar{g}$ \bar{a}
 3sN start-INF 3sN go-INF towards water.source = in SBJV
 ‘He set out for the well in order to

mā-ḍ = é fēgg. é gārā líj-j=ì wāā = lg = é,
 drink- water GP when /léj/went- water =
 SBJV = IPF COMP = SBO1 in = SBO
 get a drink. When he arrived at the well,

ē gōms-óggō fēgg = á ē nāā é fōl tód-ì.
 3sN found- water = 3sN lay. GP hole. down-
 D.COMP DEF INCP GEN 3sO
 he discovered that the water was very far down in the well.’ (Goat2-4)

Post-nuclear clauses are introduced by a subordinate conjunction as in (3a) or by a subjunctive verb as in (b). In (b), three subjunctive verbs in three separate post-nuclear clauses are introduced by the subjunctive particle *ā* and give the purpose of the nuclear clause. A further subjunctive clause (*ā māḍé fēgg* ‘to drink water’) is found in the first two lines of (2). Clauses may also be embedded such as the clause *fēgg-á ē nāā é fōl tód-ì* ‘water lay down in the hole’ of the final line of (2) which is a complement of the verb *gōms-óggō* ‘found’.

(3a) á wír-ōn áfād mān tād tē,
 1sN /wír/slaughter-CONT.P blood certain down here
 ‘I am making a sacrifice here because

é kōrá é mósí néé nór-r-ōn tē.
 GP because GP insect this /nár/drool-CAUS-CONT.N here
 because this insect drools here.’ (Jooj9-10)

(b) ānēndá ē dōs- ē bàg-g áṅé = n
 then 3pN start-INF 3pN grab-INF elephant = DEF
 ‘Then they elicited the help of an elephant

ā gəl-ḍ = íggèn é ūfú = n tād
 SBJV /gəl/ram-SBJV.3sN = 3pD GP Tabaldi.tree = DEF down
 in order to break down the Tabaldi tree for them

ā gār-rā ā nám-ḍá nālg é jēērēmā = n.
 SBJV be.able- SBJV eat-SBJV.3sN children GP devil.GEN =
 SBJV.3sN DEF
 so as to eat the nyeerma offspring.’ (Nye8-10)

15.2 Conjunctions

Conjunctions are a further lexical category, introducing either nuclear or non-nuclear (subordinate) clauses. The coordinate conjunctions of (4) are found to introduce nuclear clauses. Some references in texts from chapter 17 are listed for the

conjunctions. In addition, it is also possible to juxtapose nuclear clauses without any conjunction.

Table 60: Coordinate conjunctions

ð	‘and’	Nyee4, 27, Fand13, Assa1, 3, 9, 12
ɖɛ̀	‘then, since’	Fand20, 22, Womn11
tāén	‘then’	Fand28, Minj13
ānēndá	‘then, therefore’	Minj12, Womn11, 17, 24
énná	‘therefore, thus’	Fand5
mìntààðéé	‘thereafter’	Thng4
gâl	‘in that way’	Nyee28
lôŋ	‘then, until’	Goat6, 12, 16, Nyee15, Thng10

The conjunctions *ɖɛ̀* ‘then, since’ and *lôŋ* ‘then, until’ are analyzed as coordinate conjunctions, since subordinate marking in the clause never occurs with them. The conjunctions *ānēndá* ‘therefore’ and *ɖɛ̀* ‘then, since’ are shown in (4c); the conjunction *lôŋ* ‘then, until’ is shown in (5e).

(4) **Coordinate conjunctions**

- (a) jīnná wā-in = ñggè tú = í é kōrá
 that go-INCP = IPF out = SBO GP because
 ‘They remarry because’
- (b) ðððgg = ó nà óŋ tɛ̄ j̄is-ān = ñggè bèèñāɖ = éé = n.
 women = REL bad here /j̄is/make- wrongdoing =
 DEF CONT.N = 3pA SBO = DEF
 bad women (their first wives) make them do wrong.
- (c) **ānēndá**, bìì bìì-ɖə̀ bèèñāɖ = á àwɖàmàl̄ **ɖɛ̀**
 therefore /bìj̄/let. /bèè/say- wrongdoing = please since
 IMP IMP.PL DEF
 So let us please stop the wrongdoing since
- (d) bèèñāɖ = á t̄él ná t̄ál-ɖ̄ áāgg = é j̄óm = ì wá.
 wrongdoing = God REL /t̄ál/create-COMP /j̄ám/want. not
 DEF 1pA = RDM INCP = 3sAM
 God who created us doesn’t want us to do wrong.’ (Womn9-12)

The subordinate conjunction *wār* ‘but’ of table 61 has only been attested to introduce post-nuclear clauses, but the other conjunctions of table 61 introduce pre-nuclear and post-nuclear clauses.

Table 61: Subordinate conjunctions

é gārā	‘when, while’	Goat3, 7, 17, Fand 1, 7, 8, 15
é kārā	‘because’	Jooj9, Assa5, Tifa6, Womn9
(ār)	‘if’	Goat14, 15, Fand20, Thng21, Womn21
wār	‘but’	Nyee13

The subordinate marking in the clause occurs along with these conjunctions as a clitic on the verb, or clause finally, or both. It is more common for the conjunction *ār* ‘if’ to be absent from the clause than to be present, although there is subordinate marking regardless. As shown in 10.7, the verb-final subordinate clitic attached in ‘if’ clauses differs in tone from the clitic attached to verbs of other subordinate clauses.

In (5c), the conjunction *wār* ‘but’ occurs along with the verb-final subordinate clitic =*ī* (SBO3). In (d), the conjunction *é gārā* ‘when’ occurs along with the verb-final subordinate clitic =*ī* (SBO1) and the clause-final subordinate clitic =*É* (SBO). In (4a), the conjunction *é kārā* ‘because’ occurs along with the clause-final subordinate clitic =*É* on *bèènāq* = *éé* = *n* ‘wrongdoing = SBO = DEF’ where the definite clitic =*n* for vowel-final stems is also attached.

(5) **Subordinating conjunctions**

- (a) ē dōs-s ē bāgg kár = á dí
 3pN /dōs/start- 3pN /bāg/grab. wild.cow = also
 INF SBJV DEF
 ‘They also elicited the help of the buffalo

- (b) ē gəl-ḍ = īn ḍ-éēn ná tād dí,
 3sN /gəl/ram- PP-3sO REL down also
 SBJV.3sN = 3sD
 in order to break it down for them,

- (c) wār ā gār-rā ē gəl-ḍ = ī ḍ-éēn ná tād wá.
 but SBJV /gār/able- 3sN /gəl/ram- PP-3sO REL down not
 SBJV.3sN SBJV.3pN =
 SBO3
 but she was not able to break it down.

- (d) é gārā kāhs-s = ī ūfú = n = í, ē dōs-s
 GP when /kān/strike- hijliij.tree = 3sN /dōs/start-INF
 COMP = SBO1 DEF = SBO
 When she struck the tree,

- (e) l̩ŋ ē wāɣ-ɣ sɪm ũfú ɔ̃ŋ.
 until 3sN /wāɣ/go-INF down tree body
 (her horns) went deep into the tree.' (Nyeel 1-15)

15.3 Interrogatives

Questions are constructed using the question marker *à* or an interrogative pronoun. Only the interrogative pronouns of (6b-e) agree in number with the noun phrase which they replace. Some interrogative pronouns have a marked form when they replace words which occur in an uncommon position in the clause, but are otherwise unmarked. Other interrogative pronouns only have one form regardless of its position in the clause. When any of the interrogative pronouns are pre-verbal, the clause-final subordinate clitic =É (SBO) of 7.7 and 8.3.8 attaches sentence-finally. When an interrogative pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =ɪ (SBO1) of 10.7 is attached to the verb.

(6) Interrogatives

Unmarked		Marked		
SG	PL	SG	PL	
(a) à	à			QM
(b) ŋān	ŋānóòḍḍè			'who'
(c) ŋānān	ŋānāāḍḍān			'for whom'
(d) é ŋān	é ŋānāāḍ		é ŋōnè	'whose'
(e) níí	níígg	níínā	nííggè	'what'
(f) ná ísín	nà ísín			'which'
(g) tā ísí	tā ísí			'which'
(h) ḍḍì		ḍḍyín		'when'
(i) (fān) ḍá		fān ḍáēn		'where'
(j) (fān) ísí				'how'
(k) ɔ̃rɔ̃ŋ				'why'

In the example questions to follow, typical answers to the questions are in parentheses. The examples are all with singular interrogatives; plural interrogatives take similar constructions.

As discussed in 14.6.6, questions with yes/no responses have the question marker *à* sentence-finally.

- (7) jāā = n bānḍāl ɸír-só ɸóó ná sèggār = één à
 person = DEF weak kill-COMP cow REL strong = RDM QM
 'Did the weak person kill the strong cow?' (Yes./No.)

The relativizer *ná* along with the interrogative pronoun *isín* ‘which’ takes the place of a relative clause. When taking the place of a relative clause modifying a subject, it can be pre-verbal as in (12a) or post-verbal as in (b). When taking the place of a relative clause modifying an object, it can be post-verbal as in (c) or pre-verbal in (d). Another way of replacing a relative clause is with the copula *ǰā* and the interrogative pronoun *isí* ‘how’ as in (e).

- (12a) *jāā ná isín ǰír-só ǰḍḍ = n = ē*
 person REL which kill-COMP cow.GEN = DEF = SBO
 ‘Which person killed the cow?’ (The weak person killed the cow.)
- (b) *ǰḍḍ = n ǰír-s = ǰ jāā ná isín*
 cow = DEF kill-COMP = PAS.A person.GEN REL which
 ‘Which person killed the cow?’ (The weak person killed the cow.)
- (c) *jāā = n ǰír-só ǰḍḍ ná isín*
 person = DEF kill-COMP cow REL which
 ‘Which cow did the person kill?’ (The person killed the strong cow.)
- (d) *ǰḍḍ ná isín ǰír-s = ǰ jāā = n = ē*
 cow REL which kill-COMP = PAS.A person.GEN = DEF = SBO
 ‘Which cow did the person kill?’ (The person killed the strong cow.)
- (e) *ǰḍḍ = n ǰā isí ǰír-s = ǰ jāā = n = ē*
 cow = DEF COP how kill-COMP = PAS.A person.GEN = DEF = SBO
 ‘Which cow did the person kill?’ (The person killed the strong cow.)

The interrogative pronoun *ǰḍḍ* ‘when’ takes the place of adverbs of time. It is unmarked post-verbally as in (13a), but has a marked form in (b). As in (13b), when an interrogative pronoun replacing an adverb is pre-verbal, the verb-final subordinate clitic =*ǰ* (SBO1) used on ‘when’ clauses in 10.7 is attached to the verb *ǰír-s* ‘kill-COMP’.

- (13a) *jāā = n ǰír-só ǰḍḍ = n ǰḍḍ*
 person = DEF kill-COMP cow = DEF when
 ‘When did the person kill the cow?’
 (The person killed the cow yesterday.)
- (b) *ǰḍḍ yin jāā = n ǰír-s = ǰ ǰḍḍ = n = ē*
 when person = DEF kill-COMP = SBO1 cow.GEN = DEF = SBO
 ‘When did the person kill the cow?’
 (The person killed the cow yesterday.)

Similarly, the interrogative pronoun (*fān*) *ǰá* ‘where’ is a substitute for adverbs of place. It is unmarked post-verbally as in (14a), but has a marked form in (b), again with the verb-final subordinate clitic =*ɿ* (SBO1) attached to the verb *fír-sǰ* ‘kill-COMP’.

- (14a) *jāā* = n *fír-sǰ* *ǰó* = n (***fān***) ***ǰá***
 person = DEF kill-COMP cow = DEF towards where
 ‘Where did the person kill the cow?’
 (The person killed the cow near the house.)

- (b) ***fān*** ***ǰáēn*** *jāā* = n *fír-s* = ***ɿ*** *ǰǝ* = n = ***ē***
 towards where person = DEF kill-COMP = SBO1 cow.GEN = DEF = SBO
 ‘Where did the person kill the cow?’
 (The person killed the cow near the house.)

The interrogative pronoun (*fān*) *īsí* ‘how’ is a substitute for adverbs of manner. The interrogative pronoun *ǎrǎŋ* ‘why’ is a substitute for other verbal adjuncts.

- (15a) *jāā* = n *fír-sǰ* *ǰó* = n (***fān***) ***īsí***
 person = DEF kill-COMP cow = DEF towards how
 ‘How did the person kill the cow?’
 (The person killed the cow with force.)

- (b) *jāā* = n *fír-sǰ* *ǰó* = n ***ǎrǎŋ***
 person = DEF kill-COMP cow = DEF why
 ‘Why did the person kill the cow?’
 (The person killed the cow because it was ill.)

15.4 Focus

Focus is constructed by fronting the constituent which the speaker deems as the most important bit of information for the clause. Both subjects and objects can be fronted in focus.

Normally, prepositional phrases used as adjunct conjunctions such as *ē mūn náán* ‘at that time’ occur sentence-initially or following a conjunction.

- (16a) *ǝ* ***ē*** ***mūn*** ***náá* = n,**
 and with time that = DEF
 ‘At that time,

- (b) *bāárg* = *á* *ŋáó-ǎ* n *ŋā-lg* *nà* *ǎn-g* = *ì*
 Baggara = DEF /ŋáw/search.for-CONT.P girl-PL REL young-PL = RDM
 the Baggara (people group) were kidnapping young girls.’ (Minj1-2)

However, subjects are brought into focus when placed before such phrases, as in (17). In this concluding sentence of a narrative where a fox and hyena try throughout to capture and eat him, the devil creature is fronted in order to emphasize him as being the victor.

- (17) **jéérèmà = n** é gāránǎ ē áǎ-ǎǎ gā̀nà
 devil = DEF GP that.time 3sN became-SBJV.3sN laughing
 ‘The nyeerma, at that time, went on laughing.’ (Nyee34)

In the first line of the *Fandi* text, the main participant is marked as being salient, or most important, by fronting it. The noun subject *Fǎndi-n* which normally follows the subordinate conjunction *é gārǎ* ‘when’ is sentence-initial.

- (18) **fǎndi = n** é gārǎ ǎǎ-s = ǎ mǎrǎǎ-gg = ē = né
 Fandi = DEF GP when fight- COMP = IPF government-PL = ACM = SBO
 ‘When Fandi fought with the government, . . .’ (Fand1)

Objects are brought into focus by moving them to a pre-verbal position. The object *mí-n* ‘chicken’ in (19) is out of its normal post-verbal position to emphasize that it is the ‘chicken’ being thrown away and not the ‘goat’.

- (19) **mí = n** á gǎn tú
 chicken = DEF 1sN throw.INCP out
 ‘The chicken I am throwing away.’ (Jafr11)

In (20), the relative clause, describing a certain group of women, and functioning as the recipient of the transitive verb /gǎf/ ‘give’, is brought to the beginning of the sentence. The meaning is ‘It is those kinds of women and not others whom God blesses.’

- (20) **nà ǎn tǎ-yǎgg = ì** tǎl gǎf = ñggǎn jǎgg
 REL stay.INCP doors-theirs = RDM God gives.INCP = 3pD things
 ‘To those who stay in their homes, God gives them things.’ (Womn13)

Pre-verbal objects are emphasized when there is a post-verbal subject and agentive passive clitic attached to the verb. The sentence of (21) is the concluding remark of a personal story where a creature repeatedly tries to attack the narrator and other participants. The construction emphasizes the outcome of the object *jǎām* ‘someone’ (‘no one’ with negation).

- (21) **jǎām kǎm-s = ì** ǎ-éēn wá.
 someone /káām/bothered.CAUS-COMP = PAS.A PP-3sO not
 ‘No one was bothered by it.’ (Thng25)

16 Conclusion

Gaahmg is a morphologically rich language, employing many suffixes and clitics on nouns, adjectives, and verbs. [ATR] quality and tone distinguish a significant number of lexemes and grammatical functions. Several specific processes of consonant weakening, vowel elision, [+ATR] spreading, [+round] spreading, and morphological tone rules, account for the vast majority of alternations when morphemes are combined.

Gaahmg suffixes differ in alternation and function from clitics, where the former are mostly inflectional morphemes which attach to underlying root segments, whereas the latter are mostly functional, derivational or clausal morphemes which attach to surface stem segments.

All pronouns except interrogatives use vowel features to represent the person referred to, the three persons coinciding with the language's three vowel harmony pairs. Nouns may attach singular and plural suffixes, although plural suffixes are by far more common, and have various segmental and tonal allomorphs which mostly have no semantic correlation with the nouns to which they attach. Nouns and adjectives attach one or more of seven clitics to the stem, each with segmental or tonal allomorphs which depend on the stem-final segment.

The verb has five morpheme slots in addition to the root. Antipassive and causative morphemes attach immediately following the root, followed by modal and aspect morphemes which are also included in the stem. Derivational, pronominal, and clausal clitics attach to the verb stem, many of which have various segmental or tonal allomorphs depending on the subject person or inflectional verb form to which they attach. Gaahmg has morphological marking for both perfect and imperfect aspect, which can both attach to completive and incompletive verbs. Tone is added to verb stems for subject person inflection, tone distinguishes past from non-past tense in the continuous form, and tone replacement is used in the formation of antipassives, causatives, and verbal nouns.

Prepositions, body part locatives, adverbs, and conjunctions are distinct lexical categories. Body part locatives are similar in form and meaning to inherently possessed body part nouns, but are a distinct lexical category in that they do not refer to person and have different tone than body part nouns. Although they are separate morphemes, some of these locatives undergo the same segmental and tonal alternations as clitics, depending on the final segments of the preceding noun of reference.

Agentive passive, agentless passive, antipassive, and causative verb forms are syntactically and morphologically distinct and combine in nearly all possible ways.

In non-verbal clauses, copular clitics may take the place of separate copula particles, which are functionally equivalent but differ in form. Relative clauses are morphologically marked for definiteness and grammatical function in place of the marking on the head noun they modify. Subordinate clauses are morphologically marked clause-finally, and the verbs of subordinate clauses can also be marked according to the type of subordinate clause. Interrogative clauses attach the agented passive when an agent is post-verbal, the clause-final subordinate when any of the interrogative pronouns are pre-verbal, and the verb-final subordinate when an interrogative pronoun replacing an adverb is pre-verbal.

17 Texts

Ten texts of various genres are presented to show Gaahmg morphology and syntax in the context of natural language. There are two folk narratives, two historical narratives, two personal narratives, a conversation, an expository text, and two persuasive texts. The texts were originally recorded on cassette, transcribed, and glossed by speakers of the language, the recordings made from a variety of individuals in the home area. Later, the texts were extensively checked by the present author with speakers of the language and revised accordingly.

17.1 (Goat)

Folk Narrative: “The Goat and the Fox”

Author unknown; 2003; Transcribed by Hashim Orta

1. Mīi mān nām-án = ē é ūlg-ì māj wá.
goat certain beaten GP thirst.GEN-3sO well not
/nām/-CONT = PAS.A /ūlg/
There was once a very thirsty goat.
2. Ē dōs-s ē wāj-ɟ dūmùùn wāā = lg
3sN started 3sN go towards water.source = in
/dōs/-INF /wāj/-INF
He set out for the well
3. ā mā-d = é fēgg. É gārā líj-ɟ = ì wāā-lg = é
SBJV drink water GP when went water-in = SBO
/mā-d/-SBJV = IPF.3SN /léj/-COMP = SBO1
to get a drink. When he arrived at the well,
4. ē gōms-óggō fēgg = á ē nāā é fōl tōd-ì.
3sN found water = DEF 3sN laying GP hole.GEN down-3sO
/gōms/-COMP.D /nāg/INCP /fōl/ /tōd/
he discovered that the water was very far down in the well.
5. Ē pōr-d ē wál-l wāā = lg.
3sN jump 3sN fall well = in
/pōr/-CAUS.INF /wál/-INF
He jumped into the well

6. \bar{E} d̥d̥s-s ē mā-d̥ f̥egg=á l̥ŋ ē b̥ēd̥ér-r.
 3sN started 3sN drink water=DEF until 3sN satisfied
 /d̥d̥s/-INF /mā-d/-INF /b̥ēd̥ér/-INF
 and drank water until he was satisfied.
7. \acute{E} g̥ará w̥ir-s=ɪ ógg d̥ūmùùn t̥aw=ēē=n⁴⁰,
 GP when noticed place towards up=SBO=DEF
 /w̥ir/-COMP=SBO1
 When he looked up,
8. \bar{E} d̥ūgg s̥ōrmāh-gg. \bar{A} l̥d=á é yāāgg
 3sN lost wonderment-PL fox=DEF GP awhile
 /d̥ūg/-INF
 he was bewildered (at how far down he was). After a while, Fox
9. \bar{E} b̥ā-d̥-ággā n̥ám-m ā má-d̥á f̥egg d̥í.
 3sN appear want SBJV drink water also.
 /b̥ā-d̥/-COMP.D /n̥ám/-INF /mā-d̥/-SBJV.3sN
 appeared and also wanted a drink.
10. \bar{E} g̥ōms-óggō m̥ī=n ē n̥āā é f̥ōl.
 3sN found Goat=DEF 3sN laying GP hole.GEN
 /g̥ām/-COMP.D /n̥āg/-INCP /f̥ōl/
 He discovered the goat down in the well.
11. \bar{E} t̥ōrb⁴¹=ɪ “M̥īí⁴², m̥íí, t̥ā ísí?”
 3sN called goat goat COP how
 /t̥ār/-INCP=3sAM /m̥īí/
 He called out to him, “Goat, goat, how are you?”
12. \bar{A} l̥d=á ē p̥ōr-d̥=ɪ d̥-ééŋ, l̥ŋ ē mā-d̥ággā
 Fox=DEF 3sN jump PP-behind.3sO until 3sN drank
 /p̥ōr/-CAUS.INF=3sAM /mā-d̥/-COMP.D
 Fox jumped over him (into the well), and drank until

⁴⁰ The definite clitic attaches to adverbs such as *t̥aw* ‘up’ when they function as the object of a preposition as in (Goat7), where *d̥ūmùùn* ‘towards’ is an adverb functioning as a preposition. The definite clitic =n on vowel-final stems is attached after the subordinate clitic =ē. If the definite marker is taken off, the subordinate clitic is short.

⁴¹ Irregular INCP inflection; /t̥ār/ becomes *t̥ār-bá* in INCP.3sN

⁴² *M̥īí* is ‘goat’ in isolation but the tone changes to *m̥íí* in the vocative.

17.2 (Nyee)

Folk Narrative: “The Nyeerma and the Fox”

Author: Babakir Suliman; Oct 2003; Recorded and transcribed by Hashim Orta

1. Cà̀r n̄éé = n é sālā̀d = à è à̀l̄d è j̄ègg
 tale this = DEF GP hyena.GEN = COP with fox.GEN with thing.PL.GEN
 /sālād-à/ /à̀l̄d/ /jèg/
- This story is about a hyena, fox, and some
2. é l̄ēl-ēēgg = à b̄ígg nà àn-n léél-éēgg = è.
 GP grass.GEN-PL = COP some REL.PL stay forest-PL = RDM
 /léél-éēg/ /àn/-INF
- wild forest animals (lit. some things of grass
 which were staying in grass)
3. Sà̀lā̀d è ā̀l̄d = ē d̄ṑs-sò ē wā̀j-ɟ ā
 hyena with fox = ACM starts 3pN go SBJV
 /d̄ṑs/-COMP 3sN /wā̀j/-INF
- Hyena and Fox set out to
4. ɲā̀d-ɖā r̄ís-əgg m̄ān ð kár ɬā̀d-án è ɖ-ēgg = ē.
 look.for gift-PL (Ar) certain and wild- was with PP-3pO = ACM
 /ɲā̀d/-SBJV.3pN cow COP-CONT.P
- look for food and a wild buffalo was with them.
5. Ē d̄ṑs-s ē ḡōms-əggō ɲéérè̀mà = n
 3sN⁴⁴ get.up 3sN found devil.name = DEF
 /d̄ṑs/-INF /ḡōms/-D.COMP
- On their way they found (offspring of) a nyeerma devil
6. ē k̄ós-só ē àn-n ūfú = úl.
 3sN crying 3sN stayed Tabaldi.tree = up
 /k̄ón/-COMP /àn/-INF
- crying and resting in the Tabaldi (Ar. Hijliij) tree.
7. Ē b̄èè “Léē ā nām-ɖā ɲéérè̀mà = n!”
 3pN said come SBJV eat devil.name = DEF
 /b̄èè/INF /léj/IMP /nām/-SBJV.1pN
- They said, “Let’s eat the nyeerma!”

⁴⁴ The third singular subject pronoun is used twice in (Nyee5) as a third plural pronoun.

8. Ānēndá ē dḡḡs-s ē bāg-g áḡé = n
 then 3pN start 3pN grab elephant = DEF
 /ḡḡḡs/-INF /bāg/-INF
 Then they elicited the help of an elephant
9. ā gəl-ḡ = ḡḡḡn é ūfú = n táḡ
 SBJV ram-for.them GP Tabaldi.tree = DEF down
 /gəl/-SBJV.3sN = 3pD
 to break down the Tabaldi tree for them
10. ā gār-rā ā nám-ḡá nālg é nēērēmā = n.
 SBJV be.able SBJV eat children GP devil.GEN = DEF
 /gār/-SBJV.3sN /nám/-SBJV.3sN /nēērēmā/
 so as to eat the nyeerma offspring.
11. Ē dḡḡs-s ē bāg-g kár = á ḡí
 3pN starts 3pN grab wild.cow = DEF also
 /ḡḡḡs/-INF /bāg/-INF
 They also elicited the help of the buffalo
12. ē gəl-ḡ = ḡn ḡ-éēn ná táḡ ḡí,
 3sN ram-for.them PP-3sO REL.SG down also
 /gəl/-SBJV.3sN = 3sD⁴⁵
 in order to break it down for them,
13. wār ā gār-rā ē gəl-ḡ = ī ḡ-éēn ná táḡ wá.
 but SBJV able 3sN ram PP-3sO REL.SG down not
 /gār/-SBJV.3sN /gəl/-SBJV.3pN = SBO3
 but she was not able to break it down.
14. É gārā kās-s = ḡ ūfú = n = í, ē dḡḡs-s
 GP when struck hijlij.tree = DEF = SBO 3sN start
 /kās/COMP = SBO1 /ḡḡḡs/-INF
 When she struck the tree,
15. lōḡ ē wāj-ḡ sím ūfú ǎḡḡ.
 until 3sN went down tree body
 /wāj/-INF
 (her horns) went deep into the tree.

⁴⁵ As with subject pronouns, third singular dative pronouns are sometimes used for third plural referents.

16. Sàlàḍ = ā è āld = ē ē bèè
 hyena = DEF with fox = ACM 3pN said
 /bèè/INF
 Hyena and Fox said,
17. “1éē, ā ḍḍḍ-ḍḍ kár = á!”
 come SBJV milk wild.cow = DEF
 /léj/IMP /ḍḍn/-SBJV.1pN
 “Let’s milk this buffalo!”
18. Āld = á ē cúg-g ṭàagg mâ óḍl ē bèè
 Fox = DEF 3sN went door belonging.to hyena. 3sN said
 GEN
 /cúg/-INF /ḍḍl/ /bèè/INF
 Fox went to hyena’s (larger type of hyena than *salad*) house who said,
19. “Ágg cúr = ḍ ṭṣṣ mán ṭáḍ
 1pN tie cow certain down
 /cúr/INCP = IPF.1pN
 “We tied down a buffalo over there;
20. ágg ṇám ū = gḍḍ-ḍḍ bāè mán ā ḍḍ-ḍ = ì.”
 1pN want 2sN = give jug certain SBJV milk
 /ṇám/INCP /gḍf/-SBJV.2pN /ḍḍn/SBJV.3pN = 3sAM
 Please, will you give us a container for milking.”
21. Āld = á ē ḍḍḍs-s ē bāḍ-ḍ bāè = n é sālāḍ = à
 fox = DEF 3sN start 3sN break jug = DEF GP hyena.GEN = DEF
 /ḍḍḍs/-INF /bāḍ/-INF
 Fox punctured a hole in the bottom
22. ē bāl é fól. É gārā āld = á ḍḍn = ṭ īgg = í = n,
 3sP bottom GP hole GP when Fox = DEF milking milk = SBO
 = DEF
 /ḍḍn/INCP = SBO1
 of the hyena’s container. While Fox was milking,
23. kúḍ = n ē māl-l fān tàḍ,
 froth = DEF 3sN accumulate on top
 /māl/-INF
 froth formed in the pan and

32. “Sàlàḍ = ā”, ē bēè, “Ū = wór ūṽ cābb ánēén
Hyena = DEF 3sN say 2sN = carry 2sR up like.this
/bēè/INF /wár/IMP
“Hyena”, he said, “Make yourself upright and go
33. ū = bəg = gón⁴⁷ mṣṣ mán ā nám-ḍā kár ní.
2sN = grab.for.us fire certain SBJV eat cow this
/bəg/IMP = 1pD /nám/-SBJV 1pN
bring us some fire (so that) we may eat this buffalo.
34. jéérèmə = n é gāránḍá ē áḍ-ḍá gāṽà
devil = DEF GP that.time 3sN became laughing
/ád/-SBJV.3sN /gāṽà/NOM.SG
The nyeerma went on laughing
35. ē àn-n ūfú = úl ḍēēnē.
3sN stay tree = up only
/àn/-INF
as he remained in the tree.

17.3 (Fand)

Historical Narrative: “Fandi”

Author: Tugul Maktab; Oct 2003 in Khartoum;

Recorded and transcribed by Hashim Orta

1. Fónḍi = n é gārā ḍàḍ-s = ḍ mḍrāā-gg = ē = né, bēl-án
Fandi = DEF GP when fought government-
PL = ACM = SBO
/ḍāf/-COMP = IPF.3SN /bēl/-CONT.P
When Fandi fought the government, he had
2. gír|séēn jṣ. Más-sá jṣgg = ṣ gāl bēè
two.piasters(Ar) only refused people = DEF just said
/máḍ/-COMP /bēè/INF
only two piasters. He denied the people (local officials), saying
3. ē lā gḍf = ì wá, ē gḍù-s = ū = r.
3sN UNC give = it not 3sN gave
/gāf/INCP = 3sAM /gāf/-COMP = IPF.3SN = PF
he would not give it (money), since he had already given.

⁴⁷ The verb *ū = bəg = gón* is shortened from *ū = bəḍ. = ḍggón* ‘/bəg/IMP=1pD’.

4. Ē máð-ð é jṵgg ùng é dāfā,
3sN refused 3sN people 3pR GP fighting
/máð/-INF /dāf/-NOM.SG
He refused (to give money to) the officials by fighting,
5. ē wár-r kòlèèð ā kóm-ḡá jṵg=ó=r. Énná
3sN took (sword) SBJV cut people = DEF = EV that.is.why
/wár/-INF /kóm/-SBJV.3sN
taking a koleez sword to kill (hack up completely) the people. So,
6. ḡêl Fónḡi bàg-s = ān = ěn⁴⁸ líj-j = ì é kōrtūum ṭè.
just Fandi caught-him arrived to Khartoum here
/bàg/-COMP = PAS = 3sA /léj/-COMP = IPF.3sN
Fandi was captured and brought here to Khartoum.
7. Ḡàf-ḡn = ùggòn wārā mān é ḡārā ḡàf-ān = á tálò = nē.
given = them paper(Ar) certain GP when collect tax = SBO
/ḡàf/-PAS = 3pD /dāf/-CONT.N = PAS
They (citizens) were given a receipt when the tax money was collected.
8. Bēèl mān ṭā-ān ṭù ò ḡàð-sā ḡùrūs = í,
metal certain was there and give money = SBO (Ar)
COP-CONT.P /ḡàf/-COMP.3sN
There was a certain metal token, and when (a person) gave money,
9. ē ḡàf-f-ún = ì ḡ-ḡs.
3sN give-to.you = it in-hand.2sPs
/ḡàf/-INF-2sD-3sAM
he gave it to you (as certificate of payment).
10. Mōrāā óð-ð = í ṭāān bēèn fōndì = n ē ḡàð-ḡā
govern- came again saying Fandi = DAT 3sN give
ment
/áð/-INF = IPF.3pN /bē/INCP /ḡàf/-SBJV.3sN
The government came again, again requesting Fandi to pay

⁴⁸ The third singular object pronoun = ěn differs from the expected pronoun by an added *n*, which may be present here to help distinguish the pronoun from the passive clitic alone = ānā which also has a final vowel.

11. gùrūs táān. Fónḍi máá-sá ē bèè ē lā
 money(Ar) again Fandi refused 3sN said 3sN UN
 /máǎ/-COMP /bèè/INF
 the money. Fandi refused, saying he would
12. gǎf=ì wá. níínó wór-r=ī mǎān-g=á nàān=ē?
 give=it not what brought refusing.GEN those=SBO
 /gǎf/INCP-3sAM /wár/-INF=SBO /máǎ/-NOM.PL=DEF
 not pay it. What brought on this refusal?
13. Mòrāā óǎ-ǎ=í dúūr-g=ó fōrǒǒ wá, ò Fónḍi
 government came time-PL=DEF few not and Fandi
 /ǎǎ/-INF=IPF.3sN
 The government came many times, and Fandi
14. mās-sá=r=é, énná mās=á lǒ=ì tú=í gǎl.
 refused-it that.is.why refusal came out=SBO just
 /máǎ/-COMP=PF=3sA /máǎ/NOM=DEF /lǎ-d/INCP=3sAM
 refused it, and that is why the refusal (from the government)
 came out to him (with brutality).
15. É gārā mōǎgg=ē, mòrāā óǎ-ǎ=í bèè
 GP when first=SBO government came said
 /ǎǎ/-INF=IPF.3sN /bèè/INF
 At first, the government came and said there is
16. gùrūs-úgg=ú fā tū wá. Tǎén mòrā=n líín
 money-PL=DEF is there not then government=DEF arriving
 (Ar) COP /lé/INCP
 no money. Then the government (forces) arrived and became
17. àw-sā=r fááǎ=āñ. jēn kùǎǎl bél-ǎn=é jǎǎǎèr ēēn
 sat Faath= person Kulug is.named Jader 3sN
 body
 /ǎb/-COMP=PF /bél/-CONT.N=IPF.3sN
 established in Faath area. A Kulug (clan name) person called Jader was
 going
18. é Tāw. Wór=í gǎām=ā tú, jǎgg=ó ē ḍūr-ḍù
 GP Taw bring- hill.name= out people= 3pN bury
 he DEF DEF
 /wár/INCP=IPF.3sN /ḍūr/-SBJV.3pN
 to Taw. He (Jader) brought the people of the Gaam hill in order to hide

19. kólóḍ = ṣ táḍ. Ē bēè “kólóḍ = ṣ néé = n ē bēl-ḍā
egg = DEF down 3sN said egg = DEF this = DEF 3sN burst
/bēè/INF /bēl/-COMP
an egg in the ground. He said, “If this egg doesn’t burst,
20. wá = í bà, ḍè m̀ràā lā ḵs ḵèèm wá.”
not = SBO oh then government will do something not
/ḵs/INCP
then (it is a sign that) the government will not do anything.”
21. ̀ kólóḍ = ṣ ḍ̀r-s = ̀nó ēēl táḍ-ē bà bēl-ḍā wá.
and egg = DEF bury head.3sPs down-3sO oh burst not
/ḍ̀r/-COMP = PAS /bēl/-COMP
And the egg put in the ground with its top side down did not burst.
22. ḵgg ē bēè “Wáí-ḍō ḍè kōr
people 3pN said go then word
/bēè/INF /wāḵ/-IMP.PL
The people said, “Let us go since
23. mán ná ̀n = í ēēn ṭù wá.” ḵḍèèr = ā
certain which bad = RDM it.is there not Jader = DEF
nothing bad will happen (lit. the one thing which is bad is not there).” Jader
24. wár-sá kāḵ ḵnī = n ē māḍā. Ēgg lēēn-g
carried group 3sPs = DEF with big.size 3pN going
/wár/-COMP /léḵ/-NOM.PL
led his very big group. They traveled and sang
25. ēgg bōfḥ ēgg léē ṭàḍ. Líḵ-j = ì wāā ḍàl = ̀ = mṣṣ = n
3pN sing 3pN going up went pond Dal = DEF =
fire = DEF
/bōf/NOM.SG /léḵ/INCP /léḵ/-COMP = IPF.3pN
as they went along. They had arrived at the entrance of the Dal water valley
26. mū-ín ē rāg-g ṭù. Ēgg lēēn = g ēgg lēēn = g,
front-3sO 3sN stopped there 3pN going 3pN going
/rāg/-INF /léḵ/ = /léḵ/ =
NOM.PL NOM.PL
and stopped there. They were going to . . . well,

27. ú = níl gār = ā súugg ílg é gārā féð-ān = á jègg = ā
 2pN = place = market in where placed things =
 know DEF DEF DEF
 /jél/INCP /féð/-CONT.P = PAS
 do you know the place in the market in Faaz area where things
28. tād fáað = āŋ tǎén à? Mǒfátishā ē bèē
 down Faaz = body then QM policeman(Ar) 3sN said
 /bè/INCP
 are sold (lit being placed down)? The soldier said,
29. “jéés-ān-á jēn ná lēēn = g é gǒlg = ó tì.
 focus person which going GP others = DEF there
 /jéés/-CONT.N-IMP /léj/ = NOM.PL
 “Aim at the man who is leading the others;
29. Ār ú = bìl-i jǒgg kāē wá, bèl jēn tāmán.”
 Hey 2pN = hit people all not hit person one
 /bèl/IMP = IPF.2pN /bèl/IMP
 Don’t kill all the people; just kill the one man.”
30. jēn ē bìl-l = ì d-ē kúnd,
 person 3sN shot = him PP-3sP chest
 /bèl/-INF = 3sAM
 A person shot him in his chest
31. mǒǒ = n ē bād-d gǎðl = ð lŋ tǔ ē tǐr-r.
 fire = DEF 3sN penetrated shield = DEF until out 3sN die
 /bād/-INF /tǐr/-INF
 through the shield (armor) so that he died.

17.4 (Jafr)

Third-person True Narrative: Jafariin Waja i Wilŋ “Jafari Went on a Hunt”
 Author: Safadin Hamid; Oct 2004; Recorded and transcribed by Safadin Hamid

1. Jāfari = n è mǒid kūud = ī wāj-jà é wiləns.
 Jafari = DEF with old.man clan.name = ACM went GP hunting.GEN
 /wāj/-COMP
 Jafari and an older man of the Kuud clan went on a hunt.

2. $\text{jāfārì} = n$ kūn-sú cīl \acute{e} $\text{wīlən-g} = \grave{a}$.
 Jafari = DEF blew horn GP hunting.GEN-PL = DEF
 /kón/CAUS-COMP /wīlən/
 Jafari blew the hunting horn.
3. \acute{E} gārā $\text{jōgg} = \acute{o}$ $\text{fīḡó-s} = \hat{n}gg\grave{o}$ \acute{e} $\text{cīl} = \bar{i}$,
 GP when people = DEF heard = them GP horn = SBO
 /fīḡón/-COMP = 3pA
 When the people heard them (blow) the horn,
4. $\bar{e}gg$ dōḡs-s $\bar{e}gg$ lāḡ-ággā tú .
 3pN started 3pN went out
 /ḡōḡs/-INF /lā-ḡ/-D.COMP
 they ran out (to participate in the hunt).
5. $\text{Būḡūr-g} = \acute{u}$ lā-ì tú ḡí . \acute{E} gārā $\text{fīḡó-s} = \hat{n}gg\grave{i}$
 youth-PL = DEF run out also GP when heard
 /lā-ḡ/INCP-3sAM /fīḡón/-COMP = SBO1
 The young people ran out. When they heard,
6. jōgg fāḡ bīgg nā būr $\text{sēggērg} = \grave{e}$ $\text{lā} = \bar{i}$ tú ḡí .
 people old some REL remain young = RDM ran out also
 /būr/INCP /lā-ḡ/INCP = 3sAM
 some older people who were still agile also ran out.
7. $\text{jāfārì} = n$ \acute{e} mánē jō ḡàḡ-sā $\text{càḡr-ēēgg} = \acute{a}$ yōḡsḡ .
 Jafari = DEF alone just killed rabbits-PL = DEF four
 /ḡāf/-COMP
 Jafari, by himself, killed four rabbits.
8. Mōīḡ $\text{kūūḡ} = \bar{u}$ ḡàḡ-sā jēēm ḡéé wá . Būḡúr
 old.man person.name = DEF kill thing any not youth
 /ḡāf/-COMP
 The old man Kuud didn't kill anything.
9. mán bēl Féētḡā , ḡàḡ-sā ḡay-ēēgg dāāgg . $\text{Féētḡā} = n$
 certain call Feetfa(Ar) killed giraffe-PL two Feetfa = DEF
 /bēl/INCP /ḡāf/-COMP
 One youth called Feetfa killed two giraffes. Feetfa
10. \bar{e} bēē “ Lí-ḡū \bar{a} ḡàḡ-ḡà jēēm $\text{mōīḡ} = \acute{o}n$.”
 3sN said let SBJV give something old.man = DAT
 /bēē/INF /líḡ/-IMP.PL /ḡāf/-SBJV.1pN
 said, “Let’s give something to the older man.”

11. jāfārì = n è Féēṭfā = nē ēgg jōgg è dáāgg = ē
 Jafari = DEF with Feetfa = ACM 3sN people with two = ACM
 Jafari and Feetfa, they and everyone,
12. ēgg bèè “Àḏ, àḏ!”
 3sN said yes yes
 /bèè/INF
 said, “Yes, indeed!”

17.5 (Jooj)

Personal Narrative: Jen Faa na bel Coojooen “An old man called Joojo”
 Author: Hashim Orta; Oct 2003; Recorded and transcribed by Hashim Orta
 (Hashim tells the beginning of a conversation he had with a man named Joojo that he met in the home area. Although not a complete narrative, this portion is presented for its syntax constructions, some of which are not found in other texts.)

1. Á wāj-jā é nāāndá mān dūmùùn é Dààl.
 1sN went GP day certain towards GP (valley name)
 /wāj/-COMP
 One day I went to Dal Valley.
2. É gārā á lēj-j = ē é Dààl = ē, á gōms-óggō jēn
 GP when 1sN arrived GP Daal = SBO 1sN found man
 /lēj/-COMP = SBO1 /gōms/-D.COMP
 When I arrived to Dal Valley, I found an old
3. fāā ná bēl-l Cḏḏjḏḏ. -èèn, ē àn-n gōi bəl.
 old REL called Joojo-3sO 3sN stay tree.type beneath
 /bēl/-INF /àn/-INF
 man named Joojo, sitting under a Gai tree.
4. á ṭís-s = īn á bì = īn, “jēn fāā = n, ṭā īsí, bə = i?”
 1sN asked = 1sN said man old = COP how oh =
 him DEF 3sP
 /ṭís/-INF = 3sD /bèè/INF = 3sD
 I asked him, “How are you old man (respectful greeting)?”
5. Ē bèè “jīn uùṅ ḡāl = ē ūḡúūr-g, ūḡúūr-g?”
 3sN said what bodies.2pPp smell Arab-PL Arab-PL
 /bè/INF /ḡāl/INCP = PAS.A
 He asked, “Why does your body smell like that of Arabs?”

6. \dot{A} b \ddot{e} “W \acute{a} , $\bar{a}\bar{n}$ $\bar{u}\eta\bar{u}\bar{u}r = \bar{u}$ w \acute{a} .
 1sN said no 1sN Arab=DEF not
 /b \ddot{e} /INF
 I replied, “No, I am not an Arab.”
7. \dot{O} $\bar{u} = \eta\bar{o}m$ $\eta\bar{i}$ b $\bar{a}r\bar{e}$ $\bar{a}?$ ”
 and 2sN = want what now QM
 / $\eta\bar{a}m$ /INCP
 What can I do for you?”
8. $\bar{A}\bar{n}$ \acute{a} b $\bar{i} = \bar{i}n$ $\bar{d}\bar{i}$, “ \dot{O} $\bar{o}\bar{n}$ $\bar{u} = \eta\bar{i}s - s\bar{o}$ $\eta\bar{i}$ $\bar{d}\bar{i}$ $\bar{t}\bar{e}$ $\bar{a}?$ ”
 1sN 1sN said also and 2sN 2sN = did what also here QM
 /b \ddot{e} /INF = 3sD / $\eta\bar{i}s$ /-COMP
 I myself also asked him, “And you, what are you doing here?”
9. \bar{E} b \ddot{e} , “ \dot{A} w $\bar{i}r - \bar{o}n$ $\acute{a}f\bar{a}d$ $m\bar{a}n$ $\bar{t}\bar{a}d$ $\bar{t}\bar{e}$, \acute{e} k $\bar{o}r\bar{a}$ \acute{e}
 3sN said 1sN slaughter blood certain down here GP GP
 /b \ddot{e} /INF /w $\bar{i}r$ /-CONT.P because
 1sN
 He said, “I was making a sacrifice here because
10. m $\bar{o}s\bar{i}$ n \acute{e} n $\bar{o}r - r - \bar{o}n$ $\bar{t}\bar{e}$.
 insect this drools here
 /n $\bar{a}r$ /-CAUS-CONT.N
 this insect drools here.
11. M \bar{i} = n \acute{a} g $\bar{a}n$ $\bar{t}\bar{u}$,
 chicken = DEF 1sN throw out
 /g $\bar{a}n$ /INCP
 The chicken I am throwing away,
12. m \bar{i} = n \acute{a} g $\bar{a}f - \bar{a}n$ $\eta\bar{o}gg$ f $\bar{a}\eta = \bar{a}n$ \bar{a} n $\bar{o}m - d = \bar{i}\eta gg\bar{o}$.”
 goat = DEF 1sN give people old = DAT SBJV eat-it
 /g $\bar{a}f$ /-CONT.N /n $\bar{a}m$ /-SBJV =
 IPF.3pN
 (but) the goat I am giving to the old men to eat.”

17.6 (Thng)

Personal Narrative: Jen e Arsagga “Something that frightened us”

Author: Hashim Orta; Oct 2003; Recorded and transcribed by Hashim Orta

1. Gārá āgg àn ʔàà-gg ɖ-āggá máà-gg = é, ɔ̃ð-ɔ̃ðgg = ɔ̃
 when 1pN live door-PL PP-1pO house-PL = SBO woman-PL = DEF
 /àn/INCP
 While we were living in our houses, women
2. ʔār-s àn⁴⁹. Āgg d̃ɔ̃s-s āgg wāy-ʔ wāā = lg fééd̃ɔ̃l.
 called me 1pN start 1pN go water = in early.morning
 /ʔār/-COMP 1sA /d̃ɔ̃s/-INF /wāy/-INF
 called me. In the early morning we set out for the water valley.
3. É gārá āgg léy-ʔ = ā = é, ʔèèm ē âr-s āāggá.
 GP when 1pN arrived something 3sN frightened-us
 /léy/-COMP = SBO1 = SBO /âr/-COMP 1pA
 When we arrived, something frightened us.
4. ē cúɖ-ɖ ʔàð gùlɖū = ūl. Mìnʔààðéé
 3sN climbed up tree = up thereafter
 /cúɖ/-INF
 and climbed up a tree. After that,
5. āgg k̃ɔ̃éy-ʔ āgg ʔál-l dáāg āgg bìy-ʔ āgg g̃ɔ̃l-g = ɔ̃
 1pN enter 1pN make two 1pN left 1pP friend-PL = DEF
 /k̃ɔ̃éy/-INF /ʔál/-INF /bìy/-INF
 two of us passed (it) and left our other
6. nà dáāgg èèn é ɲɔ̃ɔ̃gg.
 REL two 3sN GP behind
 two companions behind.
7. Nà āgg bìy-ʔð dáāgg é ɲɔ̃ɔ̃gg = í, ʔēn
 REL.PL 1pN left two GP behind = SBO person
 /bìy/-COMP
 Those we left behind, the bad thing

⁴⁹The segment *n* in the first singular object pronoun *an* makes a distinction with *a* in the completive suffix of *tār-sà* which has no object pronoun.

8. ná ón=í ē pəl-l-ì táđ đ-n-mù-gg.
REL.SG bad=RDM 3sN fall down PP-3pO-front-PL
/pəl/-INF-3sAM
fell down in front of them.
9. Āgg t̄āđ-án āgg Māgsààđ āgg t̄āđ-án yāōsós.
1pN were 1pN Magsad 1pN were four
COP-CONT.P COP-CONT.P
We were four in all, including Magsad.
10. L̄h̄j m̄ é gārā j̄ēn âr-s=ìgg=ì,
Then even GP when person frightened=them
/âr/-COMP=3pA=SBO1
Then, even though the thing frightened us,
11. āgg k̄ōéj-j mārèè. Āgg b̄ij-j=ì f̄agg mārèè.
1pN enter somehow 1pN left=it then somehow
/k̄ōéj/-INF /b̄ij/-INF=3sAM
we were able to go past somehow. We left it somehow,
12. j̄āām k̄óđm=ī⁵⁰ wá.
someone dealt.with=it not
/káām/CAUS=PAS.A.3SP
and no one was bothered.
13. K̄ōj̄j=ó bàg-s ān⁵¹ m̄h̄j đ-áán wá.
fear=DEF grabbed me well PP-1sO not
/bàg/-COMP 1sA
I have never been as scared as on this occasion!
14. j̄èēm âr-s ān ánēén é n̄āānđ=á m̄ān wá.
something frightened me like.this GP day=DEF certain not
/âr/-COMP-1sA
There has never been a day I was as frightened as this.

⁵⁰ *j̄āām k̄óđm-ì* is a shortened version of *j̄āām k̄óđm-ì đ-éēn* ‘someone is bothered by it (CAUS=PAS.A PP-3SP) (Thng25)’; For comparison, *j̄ēn k̄áām j̄āām* ‘person bothers someone’; *j̄ēn k̄óđm j̄āām* ‘person bothers.CAUS someone’; *j̄āām k̄óđm=ì j̄ēn* ‘someone is bothered by the person (CAUS=PAS.A)’; *j̄āām k̄óđm-ō* ‘someone is bothered (CAUS-PAS)’.

⁵¹ Final *-n* is used here to make the pronoun obvious.

15. Nāānd=á náán jō á túr-s=i, jègg=ā
 day=DEF that only 1sN saw=it things=DEF
 /túr/-COMP=3sAM
 It was only that day in which I saw it that they were
 so frightened of the thing
16. âr-s=i ggì ógg=é. É nāānd=á yāàn,
 frightened=them place=SBO GP day=DEF other
 /âr/-COMP=3pAM
 in that place. On another day,
17. āgg wāj-jā wāā=lg fēédóól jō, āggá kāf-ān.
 1pN went water-in early.morning only 1pN draw.water
 /wāj/-COMP /kāf/-CONT.P
 we also went to the water valley early in the morning and drew water.
18. É gārā āgg léj-j=ā=é, jēn mān
 GP when 1pN arrived person certain
 /léj/-COMP=SBO1=SBO
 When we arrived, something
19. ná ón=i ē dōōs-s ē dōj-j āāggá é mīdógg.
 REL.SG bad=RDM 3sN started 3sN stone us GP stones
 /dōōs/-INF /dōj/-INF 1pA
 bad began pelting us with stones.
20. É dōj-j āāggá é mīd-óg fōrój wá bō=i,
 3sN stoned us GP stone-PL few not oh=SBO
 /dōj/-INF 1pA
 When it pelted us with a lot of stones,
21. á gōl-g=ō jām-m ā gāl-dà, á bī=i ggān⁵²
 1sP friend- want SBJV run 1sN told=them
 PL=DEF
 /jām/-INF /gāl/-SBJV.3pN /bēè/INF=3pD
 my companions wanted to run, (but) I told them
22. “Wá! Ūgg=gōl wá, ār jègg=ā nà
 no 2pN=run not if things=DEF REL.PL
 /gāl/IMP
 “No, don’t run if the things which frighten you don’t run, (otherwise)

⁵² The long third plural dative pronoun is used.

5. Kór-ǎn kōr ná lūsú é kōrá kōr ná
was.saying speech REL.SG hot GP because speech REL.SG
/kór/-CONT.P
(She) was saying harsh words instead of kind
6. cúú=í wá. Kór á kōr ná ón=í.
sweet=RDM not speaks word REL.SG bad=RDM
/kór/INCP 1sA
words. She speaks to me rudely.
7. Běl gōḡ-gg wá, jègg bífgg
has cothing-PL not thing some
/běl/INCP
(This is because) she doesn't have clothing—just some
8. nà óḡ ṭā jùùn á mḡḡr-ḡn = ín = ín jḡ.
REL bad COP long.ago 1sN was.buy.for.her just
/māār/-CONT.P = 3sD = 3sAM
old clothes from long ago (that) I was buying for her.
9. ḡ jēn=á á kúr=ì ín=í,
and person=DEF 1sN tell=it 3sD=SBO
/kór/INCP = 3sAM
(Furthermore), the person (who travels with a message) to tell it (her needs) to
10. bō=ì ḡùùl. Cāè=n ē kór
send=him difficult Jae=DEF 3sN say
/bā-ḡ/INCP = 3sAM /kór/INCP
is difficult to find. Jae (son of Assamma) said,
11. 'Á bàà ā wáj-jā. Á ḡām Hášīm = á
1sN grab SBJV go 1sN want Hashim = DEF
/bāḡ/INCP /wāj/-SBJV.1sN /ḡām/INCP
'I want to go. I want Hashim
12. ā jìḡ-ḡḡ ḡ ā wár-ḡ=é ḡnḡ ráḡè.'
SBJV make and SBJV bring 1sD radio
/jìs/-SBJV.3sN /wár/-SBJV-IPF.3sN
to get me a radio.'
13. Á bì=ìggḡn 'Jḡ-ḡḡ ùḡḡ=ū ḡgg kāē jḡ.'
1sN tell=them finish 2pR=DEF 2pN all only
/bèè/INF = 3pD /jḡḡ/-IMP.PL
I told them, '(Alright, all of you), you all just (go without me).'

14. Mássēē = n ē ðùs-ǝn = í ē nām á
 sickness = DEF 3sN comes.out 3sN eats me
 /ðùs/-CONT.P = IPF.3sN /nām/-INCP 1sA
 The Masseen sickness came, bringing me
15. sù, sù, jǝ.
 deep deep only
 a great deal of pain (lit. eats me).

17.8 (Minj)

Historical Expository: Jen Faa Mijjib o Baarg “Old Man Mijjib and the Baggara”
 Author: Tuguul Maktab; Oct 2003; Recorded and transcribed by Hashim Orta

1. Jēn fāā mān bēl-ǎn Mijjibb. ǝ ē mūn náá = n
 man old certain named Minjib and with time that
 /bēl/-CONT.P
 There was an old man named Minyjib. At that time
2. Bāárg = á ηáǝ-ǎ n jǎ-lg nà ǎn-g = ì,
 Baggara = DEF search.for girl-PL⁵⁴ REL young-PL = RDM
 /ηáw/-CONT.P
 the Baggara (people group) were kidnapping young girls
3. ē mǎr-ǝn = ŋggǝ ðūmùùn é Gǝǝr.
 3pN sold = them towards GP clan.name
 /mǎr/CAUS-CONT.P = 3pA
 to sell to them (non-Gaahmg people) far away past the Goor clan.
4. Bāárg = á áǝ-ǎ n àn-ǎn è jǝgg Gǝǝr = é.
 Baggara = DEF coming staying with people Goor = ACM
 /áǝ/-CONT.P /ǎn/-CONT.P
 The Baggara were coming with the people of Goor.
5. Bāárg = á áǝ-ǎ n fǎn é Tǎw = ā wá.
 Baggara = DEF coming towards GP village.name = DEF not
 /áǝ/-CONT.P
 The Baggara were not coming to the people of Taw (Gaahmg village).

⁵⁴ The plural suffix *-lg* is irregular.

6. Jōgg Gōōr = ɔ̀ bà ʔs-s = ʔggān jègg ʔn-g = ì.
 people Goor = DEF oh became = for.us things bad-PL = RDM⁵⁵
 /áð/-COMP = 1pD
 The Goor tribe became our enemies (lit. to us bad things).
7. Jōgg ēgg ʔð = ì bà, ēgg wár-r jègg = ā ɖ-āggá kāē.
 people 3pN come oh 3pN take things = DEF PP-1pO all
 /áð/INCP = SBO1 /wár/-INF
 When these people come, they take all (our) things from us.
8. Bāárg = á ɽèèdá bēl-án = èèggà mōsòr-èèg = ē bà,
 Baggara = DEF here having horse-PL = IPF.3pN oh
 /bēl/-CONT.P = IPF.3pN
 The Baggara had horses;
9. jēn fāā ná bēl-l Mīnjìbb bēl-án mōsòr jō ɖí.
 person old REL named Minjib has horse only also
 /bēl/-INF /bēl/-CONT.P
 the old man called Minyjib also had a horse.
10. Mōsòr ìnī bēl-l ʔsúùr. Mōsòr ìnī = n ē fír-sá
 horse 3sPs named Asuur horse 3sPs = DEF 3sN smells
 /bēl/-INF /fír/-COMP
 His horse was called Asuur. When his horse smelled
11. gōlg ìng = ɔ̀ ɖí = ní, ē cíl-ɖ ē kón-n wíl,
 others bodies = DEF also = SBO 3sN whistles 3sN cries (sound)
 /cíl/-CAUS.INF /kón/-INF
 the presence of others, he whistled, cried (sound)
12. wíl ē gān-n ʔgg. Ānēndá jēn fāā ná
 (sound) 3sN digs place therefore person old REL
 /gān/-INF
 (sound), and pawed the ground (to alert others). So, that old man
13. bēl-l Mīnjìbb ɽāén ē dōs-s ē àb-b = ì ɖ-éél
 named Minjib then 3sN starts 3sN rides = it PP-on.3sO
 /bēl/-INF /dōs/-INF /àb/-INF = 3sAM
 called Minyjib rode his horse proudly,

⁵⁵ The relative clause definite clitic attaches even without the relativizer *na* in some contexts.

14. ē máà iīŋ ē àn-n mōsòr ɔɔl
 3sN prides 3sR 3sN stay horse up
 /mân/INCP /ân/-INF
 taking pride in himself as he sits up on the horse
15. ē páré = n é mǎŋil = ð ɖ-éès.
 with skin.bag = DEF GP devil.GEN = DEF PP-hand.3sPs
 /mǎŋil/
 with an animal-skin bag having demonic power in his hand.

17.9 (Tifa)

Persuasive Text: Tifa E Kassag (Tying of the youth)

Author unknown; 2004; Recorded and transcribed by Hashim Orta

1. Kāssā-gg = á ē būr ē ʔiū-s-ən = ŋggə⁵⁶ wá = één = é,
 boy-PL = DEF 3pN remain 3pN were.tied = they not = RDM = SBO,
 /būr/ /ʔif/-COMP = PAS = 3pA
 When boys remain not tied up (with Gaahmg rules),
2. ðr kōr-ēēgg = á ógg ððgg ʔifīŋ ʔifīŋ.
 mix.up word-PL = DEF place mouth.1pP quickly quickly
 /ðr/INCP
 they very quickly get mixed-up
 (lit. they mix up the words in the place of mouths).
3. ʔif-ən é Gǎəm-g = ð ɔ̀-ɖ-ən būr-g = á ʔáɖ
 tying GP Gaam.GEN-PL = DEF make.sit youth-PL = DEF down
 /ʔif/-CONT.N.NOM.SG /gǎəm-g/ /áb/-CAUS-CONT.N
 The tying of the Gaahmg youth enables them to sit down
4. é mēēɖ é būr-g ānēndá bà!
 GP rope GP youth.GEN-PL like.this oh
 /būr-g/
 in the rope of youth⁵⁷ like this!

⁵⁶A third plural object pronoun is used here for the semantic role of patient in the passive construction. Compare *jǎgg ʔiū-sə kāsāggá* ‘people tied the boys’; *kāsāggá ʔiū-s-ən* ‘the boys were tied’; *ʔiū-s-ən-ŋggə* ‘they were tied’.

⁵⁷The figurative meaning is ‘The youth become respected members of the community by obeying the Gaahmg rules.’

5. Á bɛ̀ɛ̀ tɪ́f-ɔ́n wɛ̀dán, ɔ́n wá. Ká̄sā-g = á
 1sN say tying beautiful bad not boy-PL = DEF
 /bɛ̀ɛ̀/INF /tɪ́f/-CONT.N.NOM.SG
 I say, (youth) tying is beneficial and not detrimental. Let boys
6. bɪ̀ tɪ́ú-ɔ́ = ɔ́n = ɪ̀ggò é kɔ́rá lā ɔ́w = ɪ̀ggì
 let be.tied = them GP because UNC make.sit = them
 /bɪ̀j/IMP /tɪ́f/-SBJV = PAS = 3pA /ɔ́b/CAUS.INCP = 3pAM
 be tied because it will help them sit down
7. é tɛ̀ɛ̀ḍ tāmán ò mɛ̀ɛ̀ḍ é bù̀nùr-g = ɪ̀ = n.
 GP road one and rope GP youth.GEN-PL = SBO = DEF
 /bũ̀nũ̀r/
 in one rope of youthful unity.
8. jɔ́gg = ɔ́ nà tɪ́ũ-s = ɔ́n = ɪ̂⁵⁸ tál é fáá-gg é fáá-gg.
 people = DEF REL have.been.tied create GP line-PL GP line-PL
 /tɪ́f/-COMP = /tál/INCP.3pN
 PAS = RDM
 Those who have been tied, sit in rows of lines.
9. Āw-àn é bù̀ggɔ́ŋ. jɛ́n ná bɛ̀l-l ɔ́gg í̄n = í̄n = í̄
 sitting GP group.PL person REL.SG has place 3sO = RDM = SBO
 /ɔ́b/-CONT.N.3p /bɛ̀l/-INF
 They usually sit in groups. When a person has a place (in society),
10. níl = ì ò ná bɪ́l-l = ì wá = éé = né níl = ì jɔ́ ḍí.
 knows = it and REL.SG has = it not = RDM = knows = it only also
 SBO
 /nɛ̀l/INCP = 3sAM /bɛ̀l/-INF = 3sAM /nɛ̀l/INCP = 3sAM
 he knows it, and when he doesn't have a place, he knows that as well.
11. Kásón-gí⁵⁹ ná àḍ ná é fáá-gg é fáá-gg = é
 friend-N.SG REL sits REL GP line-PL GP line-PL = RDM
 /kásán, kásánáāg/ 'friend' /ɔ́b/INCP
 The friendship of sitting in lines is full of

⁵⁸ Word-final HL tone on *tɪ́ũ-s = ɔ́n = ɪ̂* is from the passive clitic = *ɔ́n* final vowel elision and High tone reassignment to the relative clause definite clitic (*ɔ́n* = *ɪ̂* 'PAS=RDM' becomes *ɔ́n = ɪ̂*).

⁵⁹ *Kásón-g-í* 'friendship' is a derived singular noun.

12. tá fīns, ò jél àndās = á ná wáēd = é.
 is teaching and knows living = DEF REL beauty = RDM
 COP /jél/INCP.3s
 good teaching and results in a wonderful life.
13. Bìi kāsā-gg tíf-d = ān = ŋggò lôŋ pád,
 let boy-PL to.be.tied = they until always
 /bìj/IMP /tíf/-SBJV = PAS = 3pA
 (So), let boys forever and always be tied
14. ò á jām ā tál kōr é mūn tē jō.
 and 1sN want SBJV create speech GP time here only
 /jām/INCP /tál/SBJV.1sN /kōr/NOM.SG
 and I will stop talking here.

17.10 (Womn)

Persuasive Text: “Women”

Author unknown; 2003; Transcribed from cassette recording by Annaim Karaka

1. Ōð-ōōgg = ó nà bēl-l jīð-àgg = ì bà
 woman-PL = DEF REL have husband-PL = DEF oh
 /bēl/-INF
 Those women who have husbands,
2. ò wāē jāām = é máà-gg īlg = ì bà!
 and go wrongly = SBO house-PL in = 3sP oh
 /wāj/INCP
 and do bad things in their houses,
3. Bìi fīŋóð-dō kōr óñ nī mā māt.
 let hear word 1sPs this very carefully
 /bìj/IMP /fīŋón/-IMP.PL
 please hear what I have to say!
4. Ār á bēl kōr mán é d-ēggè.
 hey 1sN have word certain GP PP-3pO
 /bēl/INCP
 I have something important to say to them.

5. jɔ̃gg jnā-lg = é nà ū = bil,
 people young.one-PL = RDM REL 2sN = have
 /bēl/INCP
 The young people you have,
6. T̄él gōū-s = ì ūggúūn gāfā ē jɔ̃ màrèè.
 God gave = them 2pD given with only somehow
 /gāf/-COMP = 3sAM /gāf/NOM.SG
 God has given them to you for good reason.
7. Tā ā jìd-d = ònó jāām jāām wá.
 be SBJV be.done wrong wrong not
 COP.3pN /jìs/-SBJV.3pN = PAS
 They are not to be abused.
8. jinná jɔ̃gg fūūi-gg = ò wōin = ūggò tú wār = ūggò
 that people male-PL = DEF go out marry
 /wāj/-INCP = IPF.3pN /wār/INCP = IPF.3pN
 Why do men go out to marry
9. sɔ̃gg = é jínì? jinná wōin = ūggò tú = í é kōrá
 women = SBO what that going out = SBO GP because
 /wāj/-INCP = IPF.3pN
 a second wife? They remarry because
10. ɔ̃dɔ̃gg = ó nà óŋ tē jis-òn = ūggò bèènāḍ = één.
 women = DEF REL bad here making = them wrongdoing = SBO
 /jìs/-CONT.N = 3pA
 bad women (their first wives) make them do wrong.
11. Ānēndá, bìi bìi-dò bèènāḍ = á àwḍàmàlō ḍè
 In.this.way let say wrongdoing = DEF please since
 /bìj/IMP /bè/-IMP.PL
 So let us please stop the wrongdoing since
12. bèènāḍ = á T̄él ná tál-d āāgg = é jóm = ì wá.
 wrongdoing = DEF God REL created us want = it not
 /tál/-COMP 1pA = RDM /jóm/INCP = 3sAM
 God who created us doesn't want us to do wrong.

21. Ȯðȯȯgg, àḍ-ḍà é kōr ḍ-ȯggḍ jīð-àgg = ȯ
 women live GP word PP-2pPp husband-PL = DEF
 /ân/-IMP.PL
 Women, if you live only by your husbands'
22. é kōr é T̄èl é mán = é,
 GP word GP God.GEN GP certain = SBO
 /T̄él/
 orders and by God's commands,
23. ū = gâr-ḍà ū àḍ-ḍà mâ mân.
 2sN = be.able 2sN live very well
 /gâr/-IMP.PL /ân/-IMP.PL
 you will be able to live very well.
24. Ānēndá bà bì ȯð-ȯȯgg = ȯ áḍ-ḍà wìḍ-àg,
 then oh let woman-PL = DEF become ear-PL
 /bìȳ/IMP /ãð/-SBJV.3pN
 So, let women hear these words (lit. women become ears)
25. bì fīȳ-ḍȯ kōr = é mân.
 let hear word = RDM well
 /bìȳ/IMP /fīȳn/-SBJV.3pN
 Let them hear these words well!

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Samenvatting

The following is a summary of the thesis in Dutch. See section 1.4 for an overview in English.

Gaahmg (Gaam, [tbi]) is een Nilo-Saharaanse taal behorende tot de Eastern Sudanic subgroep. Het wordt gesproken door ongeveer 67.000 mensen in de Ingessana Heuvels in de provincie Blauwe Nijl in Noord-Soedan. Ondanks dat het Gaahmg aanzienlijk meer sprekers heeft dan andere talen in het gebied is er slechts weinig onderzoek naar gedaan.

Gaahmg heeft een rijke vormleer, vooral wat betreft de zelfstandige naamwoorden, de bijvoeglijke naamwoorden en de werkwoorden. Om tot een correcte analyse van de morfemen en hun alternanties te komen wordt eerst de fonologische basis gelegd en worden later de syntactische omgevingen beschreven.

Na het inleidende hoofdstuk 1 worden in hoofdstuk 2 de distributie en de contrastiviteit van fonemen behandeld, evenals fonologische regels, syllabestructuur en toon in wortels. Medeklinkers worden vaak verzwakt aan het einde van een woord en tussen twee klinkers; dit gebeurt zowel binnen de wortel als over morfeemgrenzen heen. [ATR]-harmonie en toon spelen een belangrijke rol in de uitdrukking van lexicale en grammaticale verschillen. Daarom is de fonologische analyse van deze kenmerken van groot belang als basis voor de morfologische analyse.

In hoofdstuk 3 worden de segmentele en tonale morfofonologische regels uiteengezet. Met behulp van deze regels kan het grootste deel van de veranderingen die plaatsvinden als morfemen worden gecombineerd worden verklaard. Hoofdstuk 4 laat zien dat clitica, die andere alternanties en functies hebben dan suffixen, aan meer dan één woordsoort kunnen worden gehecht. Paragraaf 4.2 bevat een discussie van vier criteria waarmee suffixen en clitica van elkaar kunnen worden onderscheiden, onder andere dat suffixen aan de onderliggende vorm van de wortel worden gehecht, terwijl clitica de oppervlaktevorm als basis nemen. In 4.3 wordt aangetoond dat bijvoeglijke naamwoorden een andere woordsoort vormen dan zelfstandige naamwoorden en werkwoorden. Zij treden niet op in een aantal typisch nominale of verbale constructies, en waar ze hun context delen met substantieven of verba zijn er verschillen in de morfologie.

De hoofdstukken 5 tot 13 behandelen de verschillende woordsoorten. Het centrale deel van dit proefschrift betreft de vormleer van zelfstandige naamwoorden (hoofdstuk 6-7), van bijvoeglijke naamwoorden (hoofdstuk 8) en van werkwoorden (hoofdstuk 9-10). De kleinere woordsoorten: voornaamwoorden (hoofdstuk 5), voorzetsels (hoofdstuk 11), lichaamsdeelgerelateerde locatieven (hoofdstuk 12) en bijwoorden hebben weinig tot geen morfologie.

In hoofdstuk 6 zien we dat zelfstandige naamwoorden enkelvoud- en meervoudssuffixen kunnen hebben. Het grootste deel van de enkelvoudige zelfstandige naamwoorden krijgt geen suffix, terwijl een suffix verplicht is als er naar een meervoud wordt gerefereerd. Er zijn verschillende meervoudssuffixen, ieder met meerdere tonale allomorfen. De meesten bevatten het element *gg*. Er lijkt over het algemeen geen samenhang te bestaan tussen de semantiek van het zelfstandige naamwoord en de keuze van het suffix; in sommige gevallen is er wel sprake van een fonologische conditionering.

Hoofdstuk 7 laat zien dat één of meer clitica aan de stam van het zelfstandige naamwoord kunnen worden gehecht. Er zijn zeven sets clitica: copulacliticum, bepaaldheidscliticum, locatief copulacliticum, datiefcliticum, comitatiefcliticum, onderschikkingscliticum en relatiefcliticum. De clitica hebben ieder hun eigen segmentele en/of tonale allomorfen al naar gelang de vorm van het laatste segment van de stam. In hoofdstuk 8 wordt aangetoond dat bijvoeglijke naamwoorden in hun stam- en woordmorfologie op zelfstandige naamwoorden lijken. Het meervoudssuffix bij adjectieven is *-gg*. Dezelfde zeven clitica die met zelfstandige naamwoorden kunnen worden gebruikt treden ook op bij bijvoeglijke naamwoorden.

In hoofdstuk 9 komt de werkwoordelijke stam aan bod, die bestaat uit een wortel en kan worden uitgebreid met morfemen die antipassief, causatief en modaal-aspectuele categorieën uitdrukken. Aspect kan segmenteel in het verbale woord worden uitgedrukt door middel van completieve en continuatieve suffixen. Tijd wordt door de toon op de werkwoordsstam gemarkeerd – hoge toon voor het niet-verleden continuatieve suffix en midden-hoge stijgende toon voor het verleden continuatieve suffix. De infinitief, de subjunctief en de imperatief hebben ook hun eigen suffixen die aan de wortel worden gehecht. Finitie werkwoorden worden vervoegd naar de persoon van het onderwerp door middel van een toon op de laatste lettergreep van de stam: hoge toon voor 3^e persoon enkelvoud, lage toon voor 3^e persoon meervoud en middentoon voor 1^e en 2^e persoon. Hoofdstuk 10 bespreekt de clitica die aan het verbale woord worden gehecht: agentieve passief, passief, gebonden voornaamwoorden van lijdend en meewerkend voorwerp, imperfectum, perfectum, onderschikkend, en markeerders van een definiëte relatieve zin.

In hoofdstuk 14 wordt de zinsbouw besproken, met als doel de functies van de morfemen te verduidelijken. Het deel over werkwoordelijk valentie behandelt de agentieve passief, de passief, de antipassief en de causatief. Bij de niet-werkwoordelijke zin worden twee groepen copula's besproken. Bovendien worden onder meer betrekkelijke bijzinnen, possessieve constructies en congruentie in nominale constituenten behandeld. In hoofdstuk 15 komen dan nevenschikkende en onderschikkende voegwoorden aan bod, evenals vraagzinnen en focus op het subject of het object. Na een aantal slotoverwegingen in hoofdstuk 16 biedt hoofdstuk 17 tien (orale) teksten behorende tot verschillende tekstgenres.

Curriculum vitae

Timothy Mark Stirtz was born in 1971 in Abilene, Kansas of the United States. He received a B.S. in Secondary Mathematics Education from Kansas State University in 1995 and a M.S. in Applied Linguistics from the Graduate Institute of Applied Linguistics in Dallas, TX in 2001. He taught secondary mathematics at Quisqueya Christian School in Port-au-Prince, Haiti 1995-1997, where he met his wife, Toni Kidachi, and they were married in 1996. He studied Arabic 1997-1999 in Amman, Jordan, joined SIL International in 1999, and studied field linguistics 1999-2001 in Dallas, Texas. In 2007, he gained admission to the Leiden University Centre of Linguistics to undertake doctoral research in Gaahmg, and concentrated on this research from April 2007-September 2011. He and his wife with two children, Jonathan and Joshua, have lived in East Africa since 2001.