

## Grammatical Notes



## 1. Introduction

Kumam is a language in the southern Lwo group of Western Nilotic, a branch of the Nilotic languages, which form a large group among the members of the Nilo-Saharan phylum (Greenberg 1966). Though Nilo-Saharan is not comprehensively studied, the Nilotic languages are relatively well researched. The few works regarding the Nilotic languages published so far are, however, not sufficient to understand even the outlines of the languages. In order to fill the gap, grammatical notes of Kumam is given in the following chapters. Moreover, this dictionary includes detailed information about the tonal system and also rich information about the nominal and verbal morphosyntax of Kumam.

Kumam is spoken in almost the whole central part of Uganda. It is spoken in the Kaberamaido, the Soroti, the Serere and the Kyoga districts, to be accurate. The number of speakers is given as 112,629 in *Ethnologue* (Gordon 2005). Geographically Kumam borders on Lango in the northwest and borders on Teso in the east. With regard to grammar and lexicon Kumam is most closely related to Lango, and a little more distantly to Acooli. In addition it has some features in common with Luo, a language of the southern Lwo group.

Genetically and structurally Kumam can be clearly differentiated from Teso, a member of Eastern Nilotic. Nevertheless Kumam has a lot of lexical entries common in Eastern Nilotic languages. There are some assertions that Kumam people originally spoke a variety of Eastern Nilotic. Since moving to their present domicile, they have shifted their language to a form of Western Nilotic. However, lexical forms of Kumam common in Eastern Nilotic languages are likely to have been recently borrowed from Teso due to close contact continuing still today.

Kumam, Lango and Teso speakers are called as a whole 'Atekerin' by the neighboring ethnic groups in spite of linguistic inconsistency. The name Kumam is said to be related to 'Kumama', a term used by Karimojong speakers with regard to whole groups of Kumam, Lango and Teso speakers. Moreover the name Kumam is regarded as originating from 'Akum' with which Lango speakers refer both to themselves and Teso speakers as a whole. The term Lango can be also found in the names of geographical varieties of Lotuxo, which is spoken in the Sudan.

There is no published work on Kumam. We have neither a dictionary nor a grammar of the language. This is the first dictionary to be published. There are some descriptive works on Western Nilotic, especially on languages of the southern Lwo group. The recent and most useful work is Noonan (1992), which contains a grammar and a small vocabulary of Lango. Noonan (1992) adapts an autosegmental analysis to manifest the tonal system of Lango. In this dictionary the autosegmental theory is adapted as well, but the approach leads us to quite different results from Noonan (1992). The reason is that my understanding differs from Noonan (1992) as to citation forms. Noonan (1992) offers us interesting information about the syntax of Lango. This dictionary offers information about the nominal and verbal morphosyntax of Kumam.

Other earlier and useful works are Crazzolara (1955) and Tucker (1993). The latter was compiled by C. A. Creider from data collected early by A. N. Tucker. Both of them offer us rich information about the morphology of Acooli and Luo, respectively. However, they made no attempt at systematic description of tones prior to the development of the autosegmental approach. Relatively recent descriptive works are Heusing (2004) and Storch (2005). Both of them offer comprehensive information about the morphology of southern Lwo and Western Nilotic, respectively, though the descriptions of tones are not explanatory.

The data this dictionary is based on were collected in field works conducted from 1999 to 2009, supported by the Japanese Ministry of Education, Cultures, Sports, Science and Technology. My consultant was always patient with troublesome works. She always made clear judgments based on her excellent linguistic instinct. To her I express my deepest gratitude. In addition, I would like to thank Mr. Merit Ronald Kabugo, Makerere University, and all my colleagues of the Research Institute for Languages and Cultures of Asia and Africa.

## 2. Phonology

The purpose of this dictionary is mainly to offer comprehensive information about the nominal tones and the verbal morphosyntax of Kumam. In the following chapters we offer some phonological and morphosyntactical descriptions of nouns and verbs that are prerequisite for using this dictionary.

### 2.1 Consonants

Kumam's consonantal system is relatively simple. The following inventory of consonant phonemes is posited for Kumam.

(1)	bilabials	alveolars	palatals	velars
voiceless stops	p	t	c	k
voiced stops	b	d	j	g
fricative		(s)		
lateral		l		
trill		r		
nasals	m	n	ɲ	ŋ
semi-vowels	w		y	

(2) apar	'mat made from papyrus reeds'
abár	'wealth'
tút	'pus'
dúd	'end'
cɔŋ	'knee'
jo	'person'
kic	'honey-bee'
gi	'thing'
lác	'urine'
rac	'bad'
mán(L)	'this'
nán	'now'
ɲó	'what'
ŋec	'back of body'
wic	'head'
yo	'path'
alós	'flour'

Fricatives are observed only in borrowed words.

Geminated consonants are observed in forms derived via morphological processes. For instance, when nouns ending in a consonant are followed by the personal possessive pronominal suffix *-ná* 'my', the alveolar nasal /n/ of the suffix is assimilated to the preceding consonant and forms a geminated consonant with the preceding one (e.g. *wan* 'eye' + *-ná* 'my' → *wanŋá* 'my eye', *del* 'skin' + *-ná* → *dellá* 'my skin').

The semi-vowels /w/ and /y/ may constitute nuclei of syllables as glides with the following vowels. However, the semi-vowels /w/ and /y/ are involved in the inventory of consonantal phonemes, because they sometimes may fill an onset position of syllables (e.g. *wan* 'eye', *yo* 'path').

## 2.2 Vowels

Kumam has ten vowel phonemes. The following inventory is posited for Kumam.

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<sup>1</sup> /ŋ/ is phonetically pronounced [ŋg]. When a preceding noun ends in a vowel, the alveolar nasal /n/ of the suffix is not assimilated to the preceding consonant and does not make geminated consonants with the preceding one (cf. *bunduku* + *na* → *bunduku-na* 'my gun').

(3)	[-ATR]		[+ATR]	
	front	back	front	back
high	ɪ	ʊ	i	u
mid	ɛ	ɔ	e	o
low		a		ɑ

(4)	ka	'after'
	ka	'place'
	ɛ	'ax'
	lé(L)	'animal'
	ɪc	'stomach'
	ít	'ear'
	bɪr	'wound'
	bur	'hole'
	dɔg	'mouth'
	dok	'cattle'

The ten vowels are divided into two sets with regard to vowel harmony. For convenience, the vowels, /ɪ, ɛ, a, ɔ, ʊ/ are referred to as [-ATR], and the vowels /i, e, ɑ, o, u/ are referred to as [+ATR] according to Stewart's terminology (Stewart 1967, Jakobson 1978). Tucker and Bryan (1966) refer to [+ATR] vowels as 'close' and 'hollow', while they refer to [-ATR] vowels as 'open' and 'hard' in their description of the Nilotic vowel system. Tucker (1958) refers to [+ATR] vowels as 'breathy' or 'hollow' and to [-ATR] vowels as 'hard' or 'creaky' in his discussion of Lango morphophonemics. My impression is that Kumam [-ATR] vowels sound clear, while [+ATR] vowels are of a darkish tone color.

The basic rule of vowel harmony is that a word consists of syllables whose nuclei contain vowels of the same value regarding the [ATR] category. Moreover, [+ATR] vowels control vowel harmony in words.

Personal possessive pronominal suffixes are subjected to vowel harmony. For instance, the personal possessive pronominal suffix *-ná* 'my' contains a [-ATR] vowel. When the personal possessive pronominal suffix *-ná* 'my' is attached to nouns consisting of syllables with a [+ATR] vowel, the [-ATR] vowel /a/ of the suffix changes its value from [-] to [+] in harmony with the value of [ATR] of the preceding vowels (e.g. *bundú!kú* 'gun' + *-ná* → *bundú!kú-ná* 'my gun')<sup>2</sup>. The vowel harmony rule is applied to affixes that constitute words, but not to clitics. For instance,

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<sup>2</sup> Vowel harmony: a→ɑ

when the 1<sup>st</sup> person singular subject clitic *a=* 'I' is attached to verbal stems, the vowel of the clitic does not change its [ATR] value even if the verbal stems contain [+ATR] vowels (e.g. *a=* 'I' + *tedo* 'cook' → *a=tédó* 'I cook'). As the definition, clitics are those elements that are attached to stems but are not subject to vowel harmony.

Vowel harmony is limited to only one syllable positioned just before a syllable containing [+ATR] vowel in regressive assimilation. Some personal pronominal object suffixes contain [+ATR] vowels. When the suffixes containing [+ATR] vowels are attached to verb stems, the vowel of the syllable positioned just before the suffixes changes its [ATR] value from [-] to [+] (e.g. *ɔ=ɲɔɔ* + *-i* → *ɔ=ɲol-i* 'He cut you', *ɔ=jwajwatɔ* + *-i* → *ɔ=jwajwat-i* 'He hit you repeatedly')<sup>3</sup>. Some personal pronominal object suffixes contain [-ATR] vowels. The suffixes containing [-ATR] vowels are not subjected to vowel harmony. When the suffixes containing [-ATR] vowels are attached to verb stems containing [+ATR] vowels, the vowels of the suffixes do not change the [ATR] value from [-] to [+] (e.g. *ɔ=tedo* + *a* → *ɔ=téd-a* 'He cooked for me').

Phonetically long vowels occur under some conditions. In lexicon Kumam vowels have no distinctive opposition of length. It is not necessary to transcribe vowel length in the lexicon. However, phonologically distinctive long vowels occur in forms which are derived through morphosyntactic processes. For instance, when the transitive infinitive suffix *-no* is attached to verbal stems, vowels of the verbal stems are lengthened in compensation for the loss of the consonant (e.g. *ted-* 'cook' + *-no* TRI → *\*ted-do* → *teedo* 'to cook'<sup>4</sup>, *cam-* 'eat' + *-no* TRI → *\*cammɔ* → *caamɔ* 'to eat'). The alveolar nasal of the transitive infinitive suffix *-no* is assimilated to the preceding consonant with regard to both manner and point of articulation. The stem vowel is lengthened in compensation for the loss of one of the geminated consonants. Vowel length has syntactic functions in Kumam. Consequently, vowel length is transcribed for indicating syntactic functions in this dictionary.

Noonan (1992) formalizes the vowel sandhi rule in Lango as follows: under certain conditions, the final vowel of a word coalesces with the initial vowel of the following word. When coalescence occurs, the final vowel of the preceding word is deleted and the initial vowel of the following word assumes the [ATR] value of the deleted vowel (Noonan 1992: 36).

Phonetic vowel coalescence occurs in rapid speech in Kumam. When a word ending in a vowel is followed by a word beginning with a vowel, the final vowel of the preceding word may coalesce with the initial vowel of the following word in rapid speech. Under certain conditions the final vowel of the preceding word is deleted. The preserved vowel of the following word assumes the [ATR] value of the deleted vowel (5). As far as tonal phenomena are concerned, the toneme which is associated primarily with the deleted vowel is preserved even if the vowel is deleted in

<sup>3</sup> [ɔjwajwati]

<sup>4</sup> Vowel harmony: *ɔ*→*o*

accordance with the vowel sandhi rules.

For instance, when the final vowel /ɔ/ of the noun *dákó* 'woman' is deleted, [-ATR] value of the vowel is preserved even though the following word *a-gér* 'fierce' contains [+ATR] vowels (7). When the final vowel /a/ of the negative particle *líká* 'not' is deleted, [-ATR] value of the vowel is preserved even though the following word *i=té!dó* 'you cooked' begins with a [+ATR] vowel /i/ (8).

$$(5) \left[ \begin{array}{c} \cdot \cdot \cdot V \\ \text{[-ATR]} \\ 1 \quad 2 \end{array} \right] \# \left[ \begin{array}{c} V \cdot \cdot \cdot \\ \text{[-ATR]} \\ 2 \end{array} \right] \rightarrow \left[ \cdot \cdot \cdot \varnothing \# V \cdot \cdot \cdot \right]$$

(6) *ájó a=ték* → [ájá!ték]  
 I 1SG=strong  
 'I am strong.'

(7) *dákó a-gér* → [dáká!gér]  
 woman ATT-fierce  
 'fierce woman'

(8) *líká i=té!d-ó* *cám* → [líká!té!dó !cám]<sup>5</sup>  
 NEG 2SG=PERF:cook-TR food  
 'You did not cook food.'

The vowel sandhi rule is applied to unstressed vowels only. When a word ending in a vowel is followed by a word beginning with a vowel, vowel coalescence does not take place if either the vowel of the preceding word or that of the following word is stressed. For instance, when the preposition *i* 'at, in, to' is followed by the noun *ot* 'house', the vowel of the preposition is not deleted because both the vowel of the preposition and that of the noun are stressed (9).

(9) *i-ot* → \*[ót]  
 at-house  
 'at house'

When the preceding vowel is deleted in vowel sandhi, all tonemes primarily associated with the

<sup>5</sup> Tones are discussed later in chapter 3.







tone bearing unit<sup>10</sup>.

- (12) bwom 'wing'  
twol 'snake'  
dwók 'answer'  
cwar 'husband'  
kwon 'porridge'  
ɣwen 'ant'  
lwár 'gray hair'  
rwot 'chief'
- (13) pyer 'back of waist'  
dyaŋ 'cow'  
myel 'dance'  
lyɛc 'elephant'

### 3. Tone

Kumam is a tone language, exhibiting a low tone, a high tone, a falling tone, a rising tone, a downstep high tone and a double downstep high tone, which contrast on a phonetic level. However, a low toneme and a high toneme are posited in underlying representations. There are a few tone sandhi rules which have the effect of altering the underlying tonal representation of a word in particular environments. In addition to the language specific tone sandhi rules, Kumam follows the general tonal principles of assigning tonemes to tone bearing units, which are proposed in autosegmental theories.

#### 3.1 Inventory of tones

Phonetically there are four level tones in Kumam. They are referred to as a low tone, a high tone, a downstep high tone and a double downstep high tone. A high tone is transcribed with an acute accent on a vowel, because a tone bearing unit (TBU, hereafter) consists of syllables, and because only vowels always form a syllable nucleus in Kumam. There is no syllabic consonant in the language. A low tone is transcribed without any mark on a vowel. There are two contour tones, a falling and a rising tone. A falling tone is transcribed with a circumflex on the vowel. A rising tone is transcribed with a wedge on the vowel. In addition, Kumam has a downstep high tone and a

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<sup>10</sup> Cf. chapter 3.

double downstep high tone. A downstep high tone is transcribed with an acute accent on a vowel preceded by an astonishing mark before the syllable whose nucleus the vowel forms. A double downstep high tone is transcribed with an acute accent on a vowel preceded by double astonishing marks before the syllable whose nucleus the vowel forms.

The followings are the significant tonal distinctions on the phonetic level in Kumam:

(1) Tone	Transcription	Abbreviation	Musical step
low	[a]	l	do
high	[á]	h	fa
falling	[â]	f	fa-do
rising	[ã]	r	do-fa
downstep high	[!á]	ds	mi
double downstep high	[!!á]	dds	re

Since high tones may be actually pronounced lower than the preceding low tones as a result of intonational phenomenon of downdrift, it is impossible to express phonic height of tones in an absolute scale of musical steps. However, rough description of phonic height in a scale of musical steps assists to draw an approximate image of tones, especially that of a double downstep high tone.

(2)	cak	'milk'	l	do
	jo	'person, pl.'	l	do
	ib	'tail'	l	do
(3)	dóg	'mouth'	h	fa
	úm	'nose'	h	fa
	dwán	'throat'	h	fa
(4)	bakó/bakó	'wife's brother'	l f / l h	do fa-do / do fa
	sandú!kú rác	'The box is bad.'	l h ds f	do fa mi fa-do
(5)	něn	'Look!'	r	do-fa
(6)	bundú!kú	'gun'	l h ds	do fa mi
	nen é!úla	'Look at the dancing ornament!'	l h ds l	do fa mi do
(7)	a=né!!n-é	'I saw her/him.'	l h dds	do fa re

The syllables are pronounced with a low tone (2). The syllables are pronounced with a high tone (3). The noun *bakó/bakó* 'wife's brother' has two free variants, one of which is pronounced with a falling tone in the final syllable and the other is pronounced with a high tone in the final syllable (4). A high tone appears mostly in the environment where a falling tone is expected to appear in Kumam. A falling tone appears in phonologically limited environments, which are not well manifested. A rising tone is of limited distribution. A rising tone occurs exclusively in subjunctives or imperatives (5). A downstep high tone is viewed not only as a product of the tone sandhi rules but also as a surface representation of lexical tonal pattern (6). The downstep high tone in examples like *é!úla* 'dancing ornament' is a product of the tone sandhi rules, and the downstep high tone in words like *bundú!kú* 'gun' is a surface representation of lexical tonal pattern. A double downstep high tone is viewed as a surface representation of lexical tonal pattern (7).

### 3.2 Tonemes in underlying representations

Two tonemes, a high toneme and a low toneme, are posited in underlying representations. This supposition results in six tones in surface representations listed in (1). Underlying tonemes are transcribed by large capitals, H for a high toneme and L for a low toneme. When a low toneme is assigned to a TBU, the TBU is phonetically pronounced with a low tone (8). When a high toneme is assigned to a TBU, the TBU is phonetically pronounced with a high tone (9).

When a high toneme and a low toneme are assigned to a TBU sequentially, the TBU is phonetically pronounced either with a high or with a falling tone in (10) and in (11), respectively. When a low toneme and a high toneme are assigned to a TBU in a sequence, the TBU is phonetically pronounced with a rising tone (12).

When a TBU associated with a high toneme is preceded by a floating low toneme, the TBU is phonetically pronounced with a downstep high tone. A downstep high tone appears after another high toneme (14).

If a TBU associated with a high toneme is preceded by a sequence of a floating low toneme, a floating high toneme and a floating low toneme, then the TBU is phonetically pronounced with a double downstep high tone (15).

In order to make clarify the relation between the underlying representations and the surface representations, we make use of the autosegmental tone analysis. The TBU connected to an underlying low toneme with an association line is pronounced with a surface low tone (8). The TBU connected to an underlying high toneme with an association line is pronounced with a surface high tone (9).

The TBU connected to an underlying high toneme and an underlying low toneme with association lines in a sequence is mostly pronounced with a surface high tone (10). Besides, the



(13) LLH → [h] LLH LL H  
 | | /  
 cogo → cogó 'bone'

(14) H(L)H → [h!h] LH(L)H L H(L)H  
 | | /  
 sanduku → sandú!kú 'box'

(15) H(L)(H)(L)H → [h!!h] LH(L)(H)(L)H L H(L)(H)(L)H  
 | | /  
 a=nɛn-ɛ → a=nɛ!!n-ɛ

Underlying tonemes are assigned to TBUs according to the general tonal principles. The general tonal principles are the following: 1) Tonemes are assigned to TBUs from left to right. 2) Association lines do not cross each other. 3) High tonemes are preferable for being assigned to TBUs. The derivations from (8) to (15) follow the general tonal principles.

### 3.3 High Spread and 'Floating High Assignment'

Kumam has a few language specific tone sandhi rules which have an effect of altering an underlying tonal representation of a phonological unit in particular environments. The language specific tone sandhi rules are called High Spread and 'Floating High Assignment'.

First we discuss High Spread. When a word bearing a low toneme in the leftmost position follows a word bearing a high toneme in the rightmost position, the high toneme in the rightmost position of the preceding phonological unit spreads over the boundary to the following phonological unit. The simple formalization in (16) shows that the rightmost high toneme of the preceding phonological unit is copied to the leftmost position of the following phonological unit. To clarify the relation between tonemes and TBUs in High Spread, we make use of conventions in autosegmental theories. The rightmost high toneme of the preceding phonological unit is assigned not only to the rightmost TBU of it but also to the leftmost TBU of the following phonological unit (17).

(16) High Spread  
 . . . H# #L . . . → . . . H# #HL . . .

(17) LHH L                      LHH L  
   | | | \ |  
 abuke way            →    abúké wáy    ‘eyelash’

(18) LHH                      LHH  
   | | |  
 abuke            →    abúké    ‘eyelash’

(19) L                      L  
   |  
 way            →    way    ‘eye’

The noun *abuke* ‘eyelash’ has a lexical tonal pattern LHH. Tonemes are assigned to TBUs from left to right in compliance with the general tonal principles. When the noun *abuke* ‘eyelash’ is pronounced separately, the rightmost high toneme is assigned to the rightmost TBU of *abuke* ‘eyelash’. The rightmost TBU is pronounced with a high tone at the surface level (18). The noun *way* ‘eye’ has a low toneme in lexicon. When the noun *way* ‘eye’ is pronounced separately, an underlying low toneme is assigned to the TBU of *way* ‘eye’. The TBU is pronounced with a low tone at the surface level (19).

When the noun *abuke* ‘eyelash’ is followed by the noun *way* ‘eye’, High Spread takes place between the phonological units. The high toneme in the rightmost position of *abuke* ‘eyelash’ is assigned not only to the rightmost TBU of it but also to the leftmost TBU of *way* ‘eye’ according to High Spread rule. In addition, all lexical tonemes are preserved within a phonological unit during tonal derivation. Consequently the TBU of *way* ‘eye’ is connected to a high toneme and a low toneme sequentially with association lines. The TBU of *way* ‘eye’ is pronounced with a falling tone at the surface level in (17).

A TBU associated with a high toneme and a low toneme in a sequence is pronounced with a falling tone in particular environments. For instance, when a high toneme is copied to a monosyllabic word bearing a low toneme assigned primarily by High Spread rule, a TBU of the word is pronounced with a falling tone. The TBU of *way* ‘eye’ in (17) satisfies the environment where falling tones appear.

Next we discuss ‘Floating High Assignment’. When a phonological unit bearing a floating high toneme in the rightmost position is followed by a phonological unit beginning with a low toneme, the floating high toneme is not assigned to the rightmost TBU of the preceding phonological unit, but to the leftmost TBU of the following phonological unit.



- (20) LLH L LL HL  
 || \/  
 cogo rac → cogo rāc  
 bone bad 'The bone is bad.'
- (21) LLH LLH  
 ||/  
 cogo → cogó 'bone'
- (22) L L  
 |  
 rac → rac 'bad'

The phonological unit *cogo* 'bone' has a lexical tonal pattern LLH. When it is uttered in citation, the phonological unit *cogo* 'bone' is pronounced with a high tone in the rightmost TBU (21). The rightmost TBU is connected to a low toneme and a high toneme in a sequence and is usually pronounced with a high tone as discussed in (10). The phonological unit *rac* 'bad' bears a lexical low toneme. When the phonological unit *cogo* 'bone' is followed by the adjective *rac* 'bad', the rightmost high toneme of the phonological unit *cogo* 'bone' is not assigned to the rightmost TBU of it, but to the leftmost TBU of the following phonological unit *rac* 'bad' (20). A high and a low toneme are connected to the TBU of the phonological unit *rac* 'bad' with association lines. The TBU of the phonological unit *rac* 'bad' is pronounced with a falling tone, because it satisfies the environment where a falling tone appears. A floating high toneme is assigned to a TBU beyond a boundary of phonological units. 'Floating High Assignment' violates the principle that all lexical tonemes are assigned to TBUs within a phonological unit during tonal derivation. We will discuss the derivation of floating tonemes and the definition of phonological units in the following section.

#### 3.4 Floating tonemes and phonological units

Floating low tonemes are mostly generated in application of tone sandhi rules. For instance, the personal possessive pronominal suffix *-ná* 'my' is endowed with an underlying high toneme. The noun *wan* 'eye' bears a low toneme in lexicon. So the phonological unit *wan-ná* 'my eye' has a lexical tonal pattern LH. The noun *abuke* 'eyelash' has a lexical tonal pattern LHH. When the nouns *abuke* 'eyelash' is followed by the noun *wan* 'eye', High Spread takes place between those two nouns. The rightmost high toneme of *abuke* 'eyelash' is assigned not only to the rightmost TBU of *abuke* 'eyelash', but also to the leftmost TBU of *wan-ná* 'my eye' according to the 'High Spread' rule. Tonemes are assigned to TBUs from left to right in compliance with the general tonal

principles. The second low toneme from right end and the rightmost high toneme are left to be assigned to the rightmost TBU in the phonological unit *waj-ŋá* ‘my eye’. The rightmost high toneme is chosen to be assigned to the rightmost TBU in compliance with one of the general tonal principles that high tonemes are preferable to be assigned to TBUs. The second low toneme from right end in *waj-ŋá* ‘my eye’ is not assigned to any TBU, because the rightmost high toneme is associated with the rightmost TBU of *waj-ŋá* ‘my eye’ to which the second low toneme is expected to be assigned. Consequently the low toneme becomes a floating toneme (23). The rightmost TBU associated with a high toneme is pronounced with a downstep high tone because it is preceded by a floating low toneme.

(23) LHH LH            LHH (L) H  
                               | | | \ /  
 abuke waj-ŋa → abúké wá!ŋá<sup>11</sup>    ‘my eyelash’    High Spread

The nominal form *waj-ŋá* ‘my eye’ consists of a nominal stem and a 1<sup>st</sup> person singular possessive pronominal suffix and constitutes a phonological unit as a whole. All categorical forms, which consist of stems, clitics and affixes, constitute a phonological unit. Namely, nominal forms, verbal forms, adjectival forms, adverbial forms, prepositions, conjunctions and particles constitute phonological units. All lexical tonemes are preserved within a phonological unit during tonal derivation.

For instance, the noun *abuke* ‘eyelash’ constitutes a phonological unit. The nominal form *waj-ŋa* ‘my eye’, which consists of the noun *waj* ‘eye’ and the 1<sup>st</sup> person singular possessive pronominal suffix *-na* ‘my’, constitutes a phonological unit. The lexical tones, LHH, of the noun *abuke* ‘eyelash’ are assigned to TBUs within the phonological unit. The lexical tones, LH, in *waj-ŋa* ‘my eye’, are assigned to TBUs within the phonological unit, because all lexical tonemes are preserved within a phonological unit during tonal derivation (23).

As pointed above, a falling tone appears only in limited environments. When a preceding high toneme is copied to a following monosyllabic phonological unit, which bears a lexical low toneme assigned primarily, the monosyllabic phonological unit is pronounced with a falling tone. If the monosyllabic phonological unit is pronounced with a high tone because a TBU connected to a high toneme and a low toneme is usually pronounced with a high tone as discussed in (10), the lexical meaning of the phonological unit may not be stable. It is not transparent that the phonological unit bears a low toneme in lexicon. However, if the monosyllabic phonological unit is pronounced with a falling tone, it is transparent that the phonological unit bears a low toneme primarily in lexicon.

<sup>11</sup> ŋŋ → ŋ: rhythm adjustment.

Floating tonemes sometimes appear in processes of tonal derivation without application of tone sandhi rules. The word *sanduku* 'box' is specified to bear the tonal pattern LHLH in lexicon. Tonemes are assigned to TBUs from left to right according to the general tonal principles. Moreover, one of the general tonal principles prescribes that high tonemes are preferable for being assigned to TBUs. The rightmost high toneme is chosen to be assigned to the rightmost TBU. Consequently the second low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone since it is preceded by a floating low toneme (24).

(24) LHLH            L H(L) H  
                       | | /  
*sanduku* → *sandú!kú*    'box'

(25) LHLHL            L H(L)HL  
                       | | ^|  
*sanduku rac* → *sandú!kú rác*  
 box    bad        'The box is bad.'

(26) LHLHL            L HL HL  
                       | | | \|  
*sanduku rac* → \**sandúku rác*  
 box    bad        'The box is bad.'

In (26) the rightmost high toneme in the preceding phonological unit *sanduku* 'box' is assigned to the TBU of the following phonological unit *rac* 'bad' over the boundary of the phonological units. The assignment of tonemes to TBUs in (26) follows the general tonal principle that tonemes are assigned to TBUs from left to right, but violates the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. This is the reason why the inappropriate surface representation is derived in (26). On the other hand, the tonal derivation (25) follows the general tonal principles and also satisfies the proposed principle that all tonemes are preserved within a phonological unit during tonal derivation. Even if it is followed by a phonological unit *rac* 'bad', the rightmost high toneme of the preceding phonological unit *sanduku* 'box' must be assigned to the rightmost TBU of it in order that all lexical tonemes can be preserved within the phonological unit. Since the rightmost high toneme of the phonological unit *sanduku* 'box' is assigned to the rightmost TBU, the second low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is

pronounced with a downstep high tone after a floating low toneme. The concept of phonological unit explains why the noun *sanduku* 'box' is pronounced with a downstep high tone in the rightmost TBU even if it is followed by another phonological unit beginning with a low toneme.

Nouns constitute phonological units. The tonal derivations in (24) and (25) follow the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

In order to derive well-formed surface representations, lexical tonal patterns should be preserved within phonological units. All underlying tonemes which are specified for a phonological unit must be assigned to TBUs within a phonological unit. However, there is an exception to the proposed principle.

The exception to the principle proposed here is 'Floating High Assignment'. Floating high tonemes violate the principle. A floating high toneme of a preceding phonological unit is assigned to a TBU of a following phonological unit beyond the boundary of phonological units, when the following phonological unit begins with a low toneme. We already discussed the phenomenon that floating high tonemes are assigned to TBUs beyond boundaries of phonological units, which we call 'Floating High Assignment'. Now we discuss 'Floating High Assignment' from the viewpoint of phonological units.

Floating high tonemes appear in limited phonological environments. For instance, the verbal form *nen* 'Look!' is specified to bear a lexical tonal pattern LH in imperative. The rightmost high toneme is a floating high toneme. Tonemes are assigned to TBUs from left to right in compliance with the general tonal principles. If the imperative form *nen* 'Look!' is uttered in citation, it is pronounced with a rising tone (28). When the imperative form *nen* 'Look!' is followed by a phonological unit beginning with a low toneme, 'Floating High Assignment' takes place between these two phonological units. The rightmost high toneme of the verb *nen* 'Look!' is not assigned to the rightmost TBU of it, but to the leftmost TBU of the following phonological unit. The rightmost TBU of the verb is pronounced with a low tone (27).

In order to clarify the relation between the underlying and surface representations, autosegmental analysis is adopted. The rightmost high toneme of the verb *nen* 'Look!' is assigned to the leftmost TBU of the following phonological unit *abuke* 'eyelash' according to 'Floating High Assignment' (27). Tonemes are assigned to TBUs from left to right in the following phonological unit *abuke* 'eyelash'. Since a phonological unit maintains all lexical tonemes during derivation, the second high toneme from right end and the rightmost high toneme are assigned to the second TBU from right end and the rightmost TBU of the phonological unit *abuke* 'eyelash' in compliance with one of the general tonal principles that high tonemes are preferable for being assigned to TBUs. The third low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The second TBU from right end of the phonological unit *abuke* 'eyelash' is pronounced with a downstep high tone since it is preceded by a floating low toneme (27). The word *way* 'eye' is

pronounced with a falling tone in limited environments which were already discussed.

If floating high tonemes follow the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation, all the lexical tonemes LH of the imperative form of verb *nen* 'Look!' are assigned to a TBU within the phonological unit. When tonemes are assigned to TBUs from left to right within the phonological unit, the TBU associated with a low toneme and a high toneme in a sequence is pronounced with a rising tone. When imperative forms of verbs are not followed by other words, the TBU is pronounced with a rising tone (28). However, the surface representations in (27) and (29) are not well-formed. Floating high tonemes do not follow the principle that all tonemes are preserved within a phonological unit during tonal derivation. Only floating high tonemes can be assigned to TBUs of the following phonological units over boundaries of phonological units.

(27)	LH LHH L	L(H) (L) H H L	
		\ / / \	
	<i>nen abuke wəŋ</i>	→ <i>nen á!búké wəŋ</i>	'Floating High Assignment'
	look eyelash	'Look eyelash!'	& High Spread

(28)	LH	L (H)	
		/	
	<i>nen</i>	→ <i>něn</i>	'Look!'

(29)	LH LHH L	L(H)(L)H H L	
		^     \	
	<i>nen abuke wəŋ</i>	→ * <i>něn á!búké wəŋ</i>	High Spread & High Spread
	look eyelash	'Look eyelash!'	

The phonological unit *cogo* 'bone' bears a tonal pattern LLH in lexicon. When it is uttered in citation, the phonological unit *cogo* 'bone' is pronounced with a high tone in the rightmost TBU in (30). However, when it is followed by a phonological unit beginning with a low toneme, 'Floating High Assignment' takes place between these two phonological units. The rightmost TBU of the preceding phonological unit *cogo* 'bone' is pronounced with a low tone, and besides, the following phonological unit *rac* 'bad' is pronounced with a falling tone (31). The rightmost high toneme of the preceding phonological unit *cogo* 'bone' is not assigned to the rightmost TBU of it, but to the leftmost TBU of the following phonological unit *rac* 'bad' according to 'Floating High Assignment'.

If floating high tonemes follow the principle that all lexical tonemes are preserved within a

phonological unit, all the lexical tonemes LLH of the noun *cogo* 'bone' are assigned to two TBUs within the phonological unit. When tonemes are assigned to TBUs from left to right within the phonological unit, the rightmost TBU is associated with a low toneme and a high toneme in a sequence. The rightmost TBU must be pronounced with a high tone. The surface representation in (32) is not well-formed. Consequently floating high tonemes do not follow the principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

- (30) LLH                      LL(H)  
                                       | |/  
 cogo                      → cogó 'bone'
- (31) LLH L                      LL(H)L  
                                       | | \ |  
 cogo rac                      → cogó rác                      'Floating High Assignment'  
 bone bad                      'bone is bad'
- (32) LLH L                      LL (H) L  
                                       | | / \ |  
 cogo rac                      → \*cogó rác                      High Spread

The verbal complex  $\text{ɔ}=\text{nen}-a$  'he saw me', which consists of a 3rd person singular subject clitic  $\text{ɔ}=\text{}$ , a verbal stem *nen* and a 1<sup>st</sup> person singular object suffix *-a*, constitutes a phonological unit as a whole. The phonological unit bears a lexical tonal pattern LLLH.

- (33) LLLH                      L LL(H)  
                                       | | |/  
 ɔ=nen-a                      → ɔ=nen-á  
 3S/P=PERF:see-1SG        'He saw me.'
- (34) LLLH LLH                      L LL(H)(L)(L)H  
                                       | | | \ /  
 ɔ=nen-a joro                      → ɔ=nen-a nó!ró                      'Floating High Assignment'  
 3S/P=PERF:see-1SG yesterday    'He saw me yesterday.'

Floating high tonemes appear in limited environments. Floating high tonemes appear in phonological units which bear an extra toneme in lexicon more than the number of TBUs

constituting phonological units. Moreover, only if the extra toneme is a high toneme and the other tonemes preceding the extra toneme are low tonemes, then the extra toneme becomes a floating high toneme. For instance, the phonological unit *cogo* 'bone' consists of two TBUs and bears a lexical tonal pattern LLH. The extra high toneme is preceded by low tonemes. The phonological unit *cogo* 'bone' fits the above-mentioned environments where floating high tonemes appear.

The derivation of floating high tonemes is formalized as follows:

(35) Floating High Toneme Derivation

$$\begin{array}{ccc} \cdot \cdot (L) & L & H \rightarrow \cdot \cdot (L) & L & (H) \\ & & & (|) & | \\ \cdot \cdot (TBU) & TBU & & \cdot \cdot (TBU) & TBU \end{array}$$

If a high toneme loses a TBU to be assigned after tonemes are assigned to TBUs from left to right, and if it is preceded only by low tonemes, then the extra high toneme becomes a floating high toneme (35). Floating high tonemes are subject to 'Floating High Assignment'. Otherwise, floating high tonemes follow the general tonal principles and the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation.

(36)  $\begin{array}{ccc} LLH & LL(H) \\ & | | / \\ cogo & \rightarrow cogo & \text{'bone'}$

(37)  $\begin{array}{ccc} LLHL & L L(H) L \\ & | | \backslash | \\ cogo \text{ rac} & \rightarrow cogo \text{ r\`ac} & \text{'Floating High Assignment'}  
 bone bad 'bone is bad.'$

(38)  $\begin{array}{ccc} LLHH & LL (H) H \\ & | | | / \\ cogo-na & \rightarrow cogo-n\`a \\ bone-my & \text{'my bone'}$

The phonological unit *cogo* 'bone' fits the environments where a floating high toneme occurs. The rightmost high toneme of the phonological unit is preceded only by low tonemes, and the phonological unit has one extra toneme more than the number of TBUs. Consequently, after the low tonemes are assigned to TBUs, the rightmost high toneme loses a TBU to be assigned and

becomes a floating high toneme.

The floating high toneme is assigned to the rightmost TBU when the phonological unit is uttered in citation, because all tonemes are preserved within a phonological unit during tonal derivation. The rightmost TBU which is associated with a low toneme and a floating high toneme is pronounced with a surface high tone (35).

The floating high toneme is subject to 'Floating High Assignment' rule. The floating high toneme is assigned to the leftmost TBU of the following phonological unit, when followed by another phonological unit beginning with a low toneme (36).

The floating high toneme is not assigned to the rightmost TBU of *cogo* 'bone' but to the leftmost TBU of *-ná* 'my'. The TBU of *-ná* 'my' bears primarily a high toneme. The TBU associated with two high tonemes is pronounced with a high tone (38).

According to 'Floating High Toneme Derivation', if it bears a lexical tonal pattern LH, a phonological unit consisting of one TBU has a floating high toneme in the rightmost position. If it bears a lexical tonal pattern LLH, a phonological unit consisting of two TBUs has a floating high toneme in the rightmost position. If it bears a lexical tonal pattern LLLH, a phonological unit consisting of three TBUs has a floating high toneme in the rightmost position as in (39).

(39) Number of TBUs	Tonal pattern	Phonological unit
1 syllable	LH	<i>ín</i> 'you' <i>nán</i> 'Look!'
2 syllables	LLH	<i>cogó</i> 'bone' <i>rámó</i> 'blood'
3 syllables	LLLH	<i>ɔ=nɔn-á</i> 'he saw me.' <i>aríbá</i> 'wedding'

(40) LH	LHHL H	L(H)(L)H H (L)H	
		\	
<i>in</i>	<i>i=téd-o cam</i>	→ <i>in</i>	<i>í=!tédó !cám</i>
	you 2SG=IMP:cook-TR food		'You cook food.'
			'Floating High Assignment'

(41) LH	L(H)
	/
<i>in</i>	→ <i>ín</i> 'you'

The 2<sup>nd</sup> person singular independent pronoun *in* 'you' consists of one TBU and bears a lexical tonal pattern LH. The independent pronoun *in* 'you' satisfies the environments where floating high



tonemes appear. When tonemes are assigned to TBUs from left to right, the rightmost high toneme loses a TBU to be assigned and becomes a floating high toneme. The floating high toneme is subject to 'Floating High Assignment' rule (40). When the independent pronoun *in* 'you' is uttered in citation, tonemes are assigned to TBUs from left to right in compliance with the general tonal principles and the proposed principle that all lexical tonemes are preserved within a phonological unit in tonal derivation. The rightmost TBU is associated with a low toneme and a floating high toneme, and is pronounced with a high tone (41).

- (42) LLH L      LL(H) L  
                   | | \ |  
 cogo rac → cogo rāc  
 bone bad    'bone is bad.'

The noun *cogo* 'bone' satisfies the environments where floating high tonemes appear. The tonal processes of the noun are already discussed in (36), (37) and (38).

- (43) LLLH LLH      L LL(H) (L) (L) H  
                   | | | \ /  
 ɔ=nɛk-a ɲoro → ɔ=nɛk-a ɲó!ró      'Floating High Assignment'  
 3S/P=PERF:kill-me yesterday    'He killed me yesterday.'

- (44) LLLH      L LL(H)  
                   | | | /  
 ɔ=nɛk-a → ɔ=nɛk-á  
 3S/P=PERF:kill-1SG    'He killed me.'

The verbal complex *ɔ=nɛk-a* 'he killed me' constitutes a phonological unit, and besides, it satisfies the environments where floating high tonemes appear. The verbal complex consists of three TBUs and bears a lexical tonal pattern LLLH. After tonemes are assigned to TBUs from left to right, the rightmost high toneme loses a TBU to be assigned and becomes a floating high toneme. The floating high toneme is assigned to the leftmost TBU of the following phonological unit *ɲoro* 'yesterday' according to 'Floating High Assignment' (43). When the verbal complex is uttered in citation, the rightmost floating high toneme is assigned to the rightmost TBU in compliance with the proposed principle that all lexical tonemes are preserved within a phonological unit during tonal derivation. The rightmost TBU associated with a low toneme and a floating high toneme is pronounced with a surface high tone (44).

### 3.6 Downstep and double downstep

We have already seen examples of downstep. We will add some examples of downstep in verbal morphology. When a phonological unit beginning with a high toneme follows a verbal complex in imperfect aspect, the leftmost TBU of it is pronounced with a downstep high tone (45).

(45)	LHHL	H	L	HH(L)	H
	<i>a=tedo</i>	<i>cam</i>	→	<i>a=téd-ó</i>	<i>!cám</i>
	1SG=IMPERF:cook-TR			food	
	‘I cook food.’				

In order that a TBU associated with a high toneme can be pronounced with a downstep high tone, it must be preceded by a floating low toneme. The verbal complex *a=tedo* ‘I cook’ in imperfect aspect is pronounced with a sequence of a low, a high and a high tones in the surface representation. A lexical tonal pattern LHHL is minimum and enough for the underlying representation of the verbal complex to be pronounced with a sequence of a low, a high and a high tone in the surface representation and to bear a floating low toneme in the rightmost position in the underlying representation.

(46)	LHLHL	H	LH(L)	H(L)	H
	<i>a=tedo</i>	<i>cam</i>	→	<i>a=té!dó</i>	<i>!cám</i>
	1SG = PERF:cook			food	
	‘I cooked food.’				

Even if a phonological unit beginning with a high toneme follows a verbal complex in perfect aspect, the leftmost TBU of it is pronounced with a downstep high tone (46). Consequently the verbal complex *a=tedo* ‘I cooked’ in perfect aspect also has a floating low toneme in the rightmost position. The verbal complex *a=tedo* ‘I cooked’ in perfect aspect is pronounced with a sequence of a low, a high and a downstep high tones in the surface representation. A lexical tonal pattern LHLHL is minimum and enough for the underlying representation of the verbal complex to be pronounced with a sequence of a low, a high and a downstep high tone in the surface representation and to bear a floating low toneme in the rightmost position in the underlying representation.

The transitive formative suffix *-o* is common to verbal complexes in imperfect and perfect aspect. The transitive formative suffix *-o* bears a lexical low toneme. The simple verb stem *ted-* ‘cook’ is common to both of the verbal complexes. Simple verbal stems bear a lexical high toneme in

indicatives. The 1<sup>st</sup> person singular subject clitic is also common to the verbal complexes in imperfect and perfect aspect. The 1<sup>st</sup> person singular subject clitic bears a lexical tonal pattern LH. The difference between the imperfect and the perfect verbal complex is that the perfect verbal complex has a third high toneme from left end while the imperfect verbal complex has no toneme in the position. Consequently imperfect aspect is suprasegmentally marked without a toneme, while perfect aspect is marked with a low toneme.

In summary, the clitic of the 1<sup>st</sup> person singular bears a lexical tonal pattern LH. The imperfect aspect is expressed without any toneme. Every simple verbal stem bears a lexical high toneme in indicative. The transitive formative suffix bears a low toneme in lexicon. The noun *cam* 'food' bears a lexical high toneme.

When tonemes are assigned to TBUs from left to right, the rightmost low toneme of the verbal complex *a=tedo* 'I cook' in imperfect aspect loses a TBU to be assigned and becomes a floating low toneme. Because the lexical tonal pattern of the word *cam* 'food' is preserved during derivation, and besides a high toneme is preferable for being assigned to a TBU, the TBU of the word *cam* 'food' associated with a high toneme is pronounced with a downstep high tone after a floating low toneme (45).

When tonemes are assigned to TBUs from left to right, the third low toneme, the second high toneme and the rightmost low toneme are left to be assigned to the rightmost TBU. The second high toneme is chosen to be assigned to the rightmost TBU, because a high toneme is preferable for being assigned to a TBU. The third low toneme from right end loses a TBU to be assigned and becomes a floating low toneme. The rightmost TBU associated with a high toneme is pronounced with a downstep high tone, because it is preceded by a floating low toneme. The rightmost low toneme also has no TBU to be assigned and becomes a floating low toneme (46).

Double downstep is rarely attested in languages. Kumam has a double downstep high tone. A double downstep high tone is observed in the verbal morphology.

- (47) LHLHLH                    L H (L) (H)(L) H  
    | | /  
 $\varepsilon=nek-\text{ɔ}-a \rightarrow \varepsilon=né!!k-\acute{a}$                     (vowel sandhi:  $\text{ɔ} + a \rightarrow a$ )  
 3SG=PERF:kill-1SG  
 'He killed me.'

The 3<sup>rd</sup> person singular subject clitic bears a lexical tonal pattern LH. Perfect aspect is marked by a suprasegmental morpheme, which is a low toneme. Every simple verbal stem bears a lexical high toneme in indicative. The transitive formative suffix *-ɔ* bears a lexical low toneme. The 1<sup>st</sup> person singular object suffix *-a* bears a lexical high toneme.



in perfect aspect (48), the rightmost TBU of a verbal complex is pronounced with a downstep high tone in imperfect aspect (49).

(49) LHLH            L H(H)(L)H  
                           | | /  
 ε=nek-ɔ-a → ε=né!k-á  
 3SG=IMPERF:kill-TR-1SG  
 'He kills me.'

The 3<sup>rd</sup> person singular subject clitic ε= bears a lexical tonal pattern LH. The imperfect aspect is expressed without any morpheme. Simple verbal stems always bear a lexical high toneme in indicatives. The transitive formative suffix -ɔ bears a lexical low toneme. The 1<sup>st</sup> person singular object suffix -a bears a lexical high toneme. The verbal complex constitutes a phonological unit, in which all tonemes are preserved during tonal derivation.

When tonemes are assigned to TBUs from left to right, the third high, the second low tonemes from right end and the rightmost high toneme are left to be assigned to the rightmost TBU. The rightmost high toneme is chosen to be assigned to the rightmost TBU in order that all tonemes are preserved within the phonological unit. The third high and the second low tonemes from right end lose TBUs to be assigned and become floating tonemes. The rightmost TBU is pronounced with a downstep high tone because it is preceded by a sequence of a floating high and a floating low toneme in (49).

The distinction of verbal complexes between perfect and imperfect aspect is made only by tone. When verbal complexes contain an object suffix, the rightmost TBU of the verbal complex is pronounced with a double downstep high tone in perfect aspect and with a downstep high tone in imperfect aspect. The fact indicates that a downstep high tone and a double downstep high tone contrast in Kumam.

### 3.7 Syntactic functions of tone

As discussed in section 3.6, tone has a syntactic function to make distinction between imperfect and perfect aspect in Kumam. Perfect aspect is marked with a suprasegmental morpheme, a low toneme, in the position preceding tonemes of verbal stems. Imperfect aspect is marked without any morpheme.

Tone also has a syntactic function to make distinction between a direct and an indirect speech construction.









(59)	LHLHL	H	L	H(L)	H(L)	H	<i>Perfect</i>
					/	/	
	a=téd-o	cam	→	a=téldó	!cám		
	1SG=PERF:cook-TR	food					
	'I cooked food.'						

The 1<sup>st</sup> person singular subject clitic *a=* bears a lexical tonal pattern LH. Perfect aspect is marked with a suprasegmental morpheme, a low toneme. Every simple verbal stem bears a lexical high toneme in indicative. The transitive formative suffix *-o* bears a low toneme in lexicon. All tonemes are assigned to TBUs from left to right. The third low, the second high from right end and the rightmost low toneme are left to be assigned to the rightmost TBU in the verbal complex *a=téd-o* 'I cooked'. The second high toneme from right end is chosen to be assigned to the rightmost TBU, because high tonemes are preferable for being assigned to TBUs. The rightmost TBU of the verbal complex associated with a high toneme is pronounced with a downstep high tone because it is preceded by a floating low toneme. The TBU of the noun *cam* 'food' associated with a high toneme is pronounced with a downstep high tone because it is preceded by a floating low toneme (59).

The surface representations of all verbal complexes are predictable. Every simple verbal stem bears a lexical high toneme in indicative. Consequently, it is not necessary for tonal patterns of verbal stems to be specified in lexicon.

### 3.9 Tone of nouns

In lexicon every noun is specified with regard to its particular tonal pattern. Kumam nouns are classified into fourteen tone classes according to the tonal patterns of nouns that are specified in the dictionary (60).

(60)	(a) L	(Tone class I)
	(b) H	(Tone class II)
	(c) LL	(Tone class III)
	(d) HH	(Tone class IV)
	(e) LH	(Tone class V)
	(f) HL	(Tone class VI)
	(g) LLL	(Tone class VII)
	(h) LHH	(Tone class VIII)
	(i) LLH+LLLH	(Tone class IX, Tone class IX*)
	(j) LHL/LH(L)	(Tone class X)
	(k) HH(L)+HHH(L)	(Tone class XI)

(l) • LH(L)H (Tone class XII)  
 (m) • . . . • (L) (Tone class XIII)  
 (n) • . . . • (Tone class XIV)

- (61) L            L  
                   |  
 wic → wic      'head'      (Tonal class I)
- (62) H            H  
                   |  
 mac → mac      'fire'      (Tonal class II)
- (63) LL           LL  
                   | |  
 tuno → tuno      'breast'      (Tonal class III)
- (64) HH           HH  
                   | |  
 doke → dóké      'cattle, pl.'      (Tonal class IV)
- (65) LH           LH  
                   | |  
 adam → adám      'brain'      (Tonal class V)
- (66) HL           HL  
                   | |  
 ŋamo → ŋámo      'yawn'      (Tonal class VI)
- (67) HL           H (L)  
                   | /  
 le → lé      'animal'      (Tonal class VI)
- (68) LLL           LLL  
                   | | |  
 toŋini → toŋini      'spears'      (Tonal class VII)

- (69) LHH      L H H  
               | | |  
 abaja → abájá      'stool'      (Tonal class VIII)
- (70) LLH      L L H  
               | | |  
 cogere → cogéré      'bones'      (Tonal class IX)
- (71) LLH      L L (H)  
               | | /  
 remo → remó      'blood'      (Tonal class IX)
- (72) LLLH      L L L (H)  
               | | | /  
 ariba → aribá      'wedding'      (Tonal class IX\*)
- (73) LHL      L H L  
               | | |  
 epepet → epépet      'shoulder'      (Tonal class X)
- (74) LHL      L H (L)  
               | | /  
 emaj → emáj      'liver'      (Tonal class X)
- (75) HHL      H H (L)  
               | | /  
 piso → písó      'needle'      (Tonal class XI)
- (76) HHHL      H H H (L)  
               | | | /  
 musuja → mó só já      'fever'      (Tonal class XI)
- (77) LH(L)H      L H(L) H  
               | | /  
 jokoni → jokó!ní      'kitchen'      (Tonal class XII)

(78) LHLHL            L HLH (L)  
                           | | | | /  
 otyemotyem → otyémotyém        'spider'        (Tonal class XIII)

(79) LHHL            LHH (L)  
                           | | | /  
 aṗira → áṗirá            'fingers'        (Tonal class XIII)

(80) LHLH            LHLH  
                           | | | |  
 aṗuseret → aṗúserét        'widow'        (Tonal class XIV)

Nouns of the tone classes I and II consist of one TBU. They are specified to bear the tonal patterns L and H in lexicon, respectively (61, 62). Nouns of the tone classes III, IV and V consist of two TBUs. They bear the lexical tonal patterns LL, HH and LH, respectively in (63), (64) and (65). The surface tonal representations of nouns of the tone classes I, II, III, IV and V are derived by assigning the lexical tonemes to TBUs from left to right according to the general tonal principles.

Nouns of the tone class VI are specified in lexicon to bear a high toneme and a low toneme in a sequence (66, 67). Some nouns in tone class VI consist of one TBU, and others consist of two TBUs. When nouns of the tone class VI consist of two TBUs, they are usually pronounced with a high tone (67). A TBU associated with a high toneme and a low toneme in sequence may be pronounced with a falling tone only in limited environments.

(81) HL L            HL L  
                           |    |  
 le rac → lé rac        'The animal is bad.'

When a word bearing a low toneme in leftmost position follows a word bearing a high toneme in rightmost position, the leftmost TBU of the following word is associated with a high toneme according to the 'High Spread' rule (cf. (16, 17)). The leftmost TBU of the following word may be pronounced with a high tone or with a falling tone.

The word *lé* 'animal' is phonetically pronounced with a high tone in the citation form. Though the word *lé* 'animal' is pronounced with a high tone, the TBU of the following word *rac* 'bad' bearing a lexical low toneme is not pronounced with a falling tone on the surface representation. This is because the floating low toneme in the rightmost position of the word *lé(L)* 'animal' blocks the application of 'High Spread' (81).

The tone class VII nouns and the tone class VIII nouns bear the lexical tonal patterns LLL and LHH, respectively. They consist of three TBUs. All tonemes are assigned to TBUs from left to right in accordance with the general tonal principles (68, 69).

The tone class IX nouns are specified to bear the lexical tonal pattern LLH (70, 71). Some of them consist of two TBUs, and others consist of three TBUs. When nouns in the tone class IX consist of two TBUs, the rightmost TBU of them is usually pronounced with a high tone. In addition, there are some exceptional nouns in the tone class IX that consist of three TBUs and bear the lexical tonal pattern LLLH (72). The exceptional nouns are referred to as the tone class IX\*. The rightmost TBU of them is also pronounced with a high tone.

The nouns of the tone class X are specified to bear the lexical tonal pattern LHL (73, 74). Some of them consist of two TBUs, others of three TBUs. When nouns in the tone class X consist of two TBUs, the rightmost TBU of them is pronounced with a high tone (74).

Most of the tone class XI nouns consist of two TBUs and bear the tonal pattern HHL in lexicon. A few nouns of the tone class XI consist of three TBUs and are specified to bear the tonal pattern HHHH in lexicon. The rightmost TBU of them is pronounced with a high tone (71, 72). As already discussed, a TBU associated with a high toneme and a low toneme in a sequence is usually pronounced with a high tone. It is pronounced with a falling tone only in limited phonological environments.

Most of the tone class XII nouns are borrowed words. These words are of Swahili origin, but likely to have been borrowed via the Teso language. The nouns of the tone class XII are characterized by the fact that they bear a third high and a second floating low toneme from right end, and a high toneme in rightmost position. The rightmost TBUs associated with a high toneme are pronounced with a downstep high tone in the surface representations (77). The second high tone from right end and a downstep high tone in the rightmost position in the surface representations correspond to the accent pattern of the Swahili language, whose words always have a pitch accent on the second syllable from right end.

The class XIII is divided into two groups. The nouns of one group consist of three TBUs, and the nouns of the other group consist of more than three TBUs. One feature of the tone class XIII nouns is that they bear a low toneme in the leftmost position (78, 79). Another feature is that they bear more tonemes than the number of TBUs that they consist of. For instance, tone class XIII nouns consisting of three TBUs bear the lexical tonal patterns LHHL (79). This tonal pattern corresponds to the tonal pattern of the tone class XI being preceded by a low toneme. The tone class IX nouns bear a tonal pattern HHL. Some tone class XIII nouns are likely to originate from the compounds of a tone class I noun and a tone class XI noun (e.g. *ya-*, tone class I, 'person' + *úó(L)*, tone class XI, 'illness' → *ya-túó(L)*, class XIII, 'patient'). Others are likely to originate from the compounds of a tone class I noun and a tone class X noun. The tone class XIII nouns which consist of more than

four TBUs are mostly borrowed words. The tone class XIII nouns consist of compounds that are derived from tone class I nouns and tone class XI nouns and that are derived from tone class I nouns and tone class X nouns, and borrowed words.

The nouns of tone class XIV predominantly consist of more than three TBUs. They bear the same number of tonemes as that of TBUs (80). Most nouns of the tone class XIV are borrowed words from other languages.

Every Kumam noun is specified to bear a particular tonal pattern in lexicon. Consequently it is necessary for the lexical tonal patterns of nouns to be specified in a dictionary. The tone classes of nouns are indicated in this dictionary.

#### 4. Morphosyntax

##### 4.1 Verbs

###### 4.1.1 Classification of verbs

In this dictionary verbs are classified into twelve classes. Kumam verbs are divided into intransitive and transitive verbs according to the cross-linguistically common definition<sup>12</sup>. Intransitive verbs allow only one argument, while transitive verbs require more than two arguments in (1). There is a clear distinction between intransitive and transitive verbs in Kumam. Kumam does not allow transitive verbs to behave as intransitives without morphological operation. Kumam transitive verbs have only one type of valency, if they are not morphologically extended. Transitive sentences accompanied by only one argument are ungrammatical in Kumam in (2).

English verbs such as 'eat' can be specified in two ways with regard to valency. In one scheme the verb allows two arguments, a subject and an object, and in the other scheme it allows only one argument, a subject. English verbs such as 'eat' can behave like intransitive verbs without any morphological operation taking place as well as transitive verbs (1, 2). English verbs function in so-called intransitive usage in the translation (2).

(1) a=cá!m-5                    ldék  
1SG=PERF:eat-TR    stew  
'I ate stew.'

(2) \*a=cá!m-5  
1SG=PERF:eat-TR  
'I ate.'

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<sup>12</sup> Kumam has a small number of ditransitive verbs.

Infinitives of transitive verbs may behave like intransitives in Kumam. Infinitives of transitive verbs may not be accompanied by an object only if they function as complements (3).

- (3) a=tye                      caamɔ  
 1SG=IMPERF:be    eat:INF  
 'I am eating.'

Kumam transitive verbs never function in so-called intransitive usage like English transitive verbs. Instead, some transitive verbs have a particular intransitive form as their counterpart (4, 5) (e.g. the transitive infinitive form: *yeeɔ*, the intransitive form: *yeeŋ* 'to satisfy').

Some transitive verbs have middle forms which are productively derived from transitive stems via morphophonological processes. The middle forms are derived by attaching middle suffix *-éré(L)* to transitive stems. The transitive formative suffix *-ɔ* is deleted before the middle suffix *-éré(L)* according to vowel sandhi (7) (e.g. *nen-ɔ* + *éré(L)* → *nénééré(L)*, the transitive infinitive form: *neenɔ*, 'to see')<sup>13</sup>. When verbal stems end in a vowel, the mid front vowel /e/ of the middle suffix *-éré(L)* is assimilated to the preceding vowel after the transitive formative suffix *-ɔ* is deleted according to vowel sandhi rule (e.g. *di-ɔ* + *éré(L)* → *\*diéré(L)* → *dí!ré(L)*, the transitive infinitive form: *dunɔ*, 'to press down')<sup>14</sup>. Though vowels are deleted, the tonemes associated with the deleted vowels are preserved during tonal processes.

Middle verbs allow only one argument. As for valency, middle verbs behave syntactically in the same manner as intransitive verbs (7).

All transitive verbs do not necessarily have an intransitive forms as their counterpart, nor a middle form that is morphologically derived from a transitive stem. Some verbs have neither an intransitive form as a counterpart nor a morphologically derived middle form. They only have a transitive form (8) (e.g. the transitive infinitive form: *ulɔ*, the intransitive form: *\*il* 'to itch'). Moreover, a few verbs have neither a transitive nor an intransitive form, but only have a middle form in (9) (e.g. the transitive infinitive form: *\*peeko*, the intransitive form: *\*pek*, middle form: *nekere* 'to envy').

<sup>13</sup> Transitive infinitive forms are derived by attaching a transitive infinitive suffix *-nɔ* to transitive stems. The alveolar nasal /n/ of the suffix is assimilated to the preceding consonant in the point and manner of articulation. And then one of the geminated consonants that are derived by the consonantal assimilation is deleted, and the stem vowel is lengthened in compensation for the loss of the consonant.

<sup>14</sup> When transitive stems end in a vowel, transitive infinitive forms are derived by attaching a transitive infinitive suffix *-nɔ* to transitive stems. Stem vowels are lengthened for adjustment of rhythm. Linguistic forms are required to bear iambic rhythms from the right end.

- (4) *cám* *ó=yen-á* (Transitive)  
 Food 3S/P=PERF:satisfy-TR:1SG  
 'Food satisfied me.'
- (5) *a=yén* *kéde* *cám* (Intransitive)  
 1SG=IMPERF:be satisfied with food  
 'I am satisfied with food.'
- (6) *a=nén-o* *átín* (Transitive)  
 1SG=PERF:see-TR child  
 'I saw the child.'
- (7) *atín* *ó=nen-éré* (Middle)  
 child 3S/P=PERF:see-MID  
 'The child has been seen (by someone)'
- (8) *del-á* *fl-lá* (Transitive)  
 skin-my 3S/P=IMPERF:itch-1SG  
 'My skin itches.'
- (9) *a=pek-é!ré* *ked:e* (Middle)  
 1SG=IMPERF:envy-MID with:3SGPOS  
 'I envy him.'

On the morphosyntactic basis Kumam verbs are classified into twelve groups (10). First they are classified into groups on the basis of whether they are intransitive or transitive. Next, verbs are divided into groups on the basis of the fact that they have middle forms.

When verbs have no middle form, the verbs are classified into three groups, that is, the Intransitive verb group (henceforth, Intr), the Intransitive/Transitive verb group (henceforth, Intr/Tr) and the Transitive verb group (henceforth, Tr). Verbs in the Intransitive verb group (10. a) have only an intransitive form and no transitive counterpart (11, 12). Verbs in the Intransitive/Transitive verb group (10. b) have an intransitive form and a particular form as a transitive counterpart (13, 14) (e.g. the intransitive form: *kok* 'to cry', the transitive infinitive form: *kooko* 'to cry for'). Verbs in the Transitive verb group (10. c) have only a transitive form but no intransitive counterpart (15, 16).



(10) (a) Intransitive	(Intr)
(b) Intransitive/Transitive	(Intr/Tr)
(c) Transitive	(Tr)
(d) Intransitive/Transitive/Middle 1	(Intr/Tr/Mid1)
(e) Intransitive/Transitive/Middle 2	(Intr/Tr/Mid2)
(f) Intransitive/Transitive/Middle 1/Middle 2	(Intr/Tr/Mid1/Mid2)
(g) Transitive/Middle 1	(Tr/Mid1)
(h) Transitive/Middle 2	(Tr/Mid2) <sup>15</sup>
(i) Transitive/Middle 1/Middle 2	(Tr/Mid1/Mid2)
(j) Middle	(Mid)
(k) Intransitive/Middle 2	(Intr/Mid2)
(l) Neuter	(Neut)

(11) a=ríngó                      i-sukú!lú  
 1SG=IMPERF:run    in-school  
 'I run in the school.'

(12) i=ótó                      i-sukú!lú  
 2SG=IMPERF:go    to-school  
 'You go to the school.'

(13) a=tye                      kók  
 1SG=IMPERF:be    cry:INF  
 'I am crying.'

(14) a=kókó                      !cák  
 1SG=IMPERF:cry for    milk  
 'I cry for milk.'

(15) ɔ=gólóro                      dok  
 1PL=IMPERF:circle    cattle  
 'We circle cattle.'

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<sup>15</sup> Tr/Tr(Caus)/Mid2 is included.

- (16) ot            ɔ=gámáro            mac  
house 3S/P=PERF:catch fire  
‘The house has caught fire.’

Middle forms are derived from transitive stems through morphophonological processes. Intransitive verbs usually have no middle form. Only an intransitive verb *beedo* ‘to live, stay’ has a doubtful middle form *?bed-ere* ‘to be inhabitable’ (19). The intransitive verb *beedo* ‘to live, stay’ allows only one argument (17). The sentence is ungrammatical if the verb *beedo* ‘to live, stay’ takes more than two arguments (18). Because proper nouns can be locative expressions without prepositions or prefixes, the proper noun *Kampala* is not an argument (20). Some speakers reluctantly accept the sentence (19) as grammatical. They probably interpret the sentence (20) as a transitive one. When the verb *beedo* ‘to live, stay’ in (20) is interpreted as a transitive verb, a middle form can be derived from the transitive stem through morphophonological processes (19).

- (17) a=bédó                            i-ot                            (Intransitive)  
1SG=IMPERF:stay            at-house  
‘I stay at home.’

- (18) \*a=bédó                            ot                            (Transitive)  
1SG=IMPERF:stay            house  
‘\*I stay home.’

- (19) ?Kampala    bé!d-éré                            (Middle)  
Kampala    3S/P:IMPERF:stay-MID  
‘Kampala is suitable for staying.’

- (20) a=bédó                            Kampala                            (Intransitive)  
1SG=IMPERF    Kampala  
‘I stay in Kampala.’

The intransitive verbs may be divided into two subclasses. The arguments of intransitive verbs of one subclass are semantically either a goal or a patient. If verbs of the subclass had a transitive counterpart, the arguments that would be direct objects in the transitive sentences might be subjects in the corresponding intransitive sentences (as arguments of unaccusative verbs would be) (21).

The arguments of intransitive verbs of the other subclass are semantically regarded as a source or an agent. If verbs of the subclass had a transitive counterpart, the arguments that would be subjects





transitive verbs are subjects of the corresponding transitive forms, these verbs are referred to as the Intransitive 2/Transitive verbs (31, 32).

(29) a=ɲwé-ó                      rɪŋó                      (Transitive)  
 1SG=IMPERF:smell-TR    meat  
 'I smell the meat.'

(30) rɪŋó    ɲwé                      râc                      (Intransitive 1)  
 meat    3S/P:IMPERF:smell              bad  
 'The meat smells bad.'

(31) a=kók-ó                      !cám                      (Transitive)  
 1SG=IMPERF:cry for-TR    food  
 'I cry for food.'

(32) a=kók                      (Intransitive 2)  
 1SG=IMPERF:cry  
 'I cry.'

No transitive verb has the intransitive counterpart which is allowed to be used in both types of intransitive sentences, Intransitive 1 and Intransitive 2. Intransitive verbs that make a pair with transitive verbs are used in either Intransitive 1 sentences or Intransitive 2 sentences. The distinction between Intransitive 1 and Intransitive 2 is not recorded in this dictionary.

Some transitive verbs have both a particular intransitive counterpart and a middle form derived from transitive verb stems. These transitive verbs are divided into two subgroups. When arguments that would be direct objects of transitive verbs are subjects of the corresponding middle forms in middle sentences and besides are subjects of the intransitive counterparts in intransitive sentences, these verbs are referred to as the class Intransitive/Transitive/Middle 1 verbs (Intr/Tr/Mid1) (33, 34, 35). When arguments that would be subjects of transitive verbs are subjects of the corresponding middle forms in middle sentences and besides are subjects of the intransitive counterparts in intransitive sentences, these verbs are referred to as the class Intransitive/Transitive/Middle 2 verbs (Intr/Tr/Mid2) (36, 37, 38).

For instance, the object of the transitive verb *beelo* 'to split', *yen* 'firewood' (33) is the subject of the middle form *bel-éré(L)* 'to be split' in the middle sentence (34). The subject of the intransitive verb *beele* 'to be cracked', *agulu* 'pot' (35) would be the object of the transitive counterpart in the transitive sentence. The subject of the transitive verb *pyelo* 'to defecate', 1<sup>st</sup> person singular (36) is

the subject of the middle form *pyel-éré(L)* ‘to defecate’ in the middle sentence (37). The subject of the intransitive verb *pyelo* ‘to defecate’, 1<sup>st</sup> person singular (38) is the subject of the transitive counterpart in the transitive sentence (36).

- (33) a=bél-ó                      yen                      (Transitive)  
 1SG=IMPERF:split-TR    firewood  
 ‘I split the firewood.’
- (34) yen              bé!l-éré                      (Middle 1)  
 firewood    3S/P:IMPERF:split-MID  
 ‘The firewood can be split.’
- (35) agúlú    ó-beelé                      (Intransitive 1, Neuter)  
 pot    3S/P=PERF:split-NEUT  
 ‘The pot is cracked.’
- (36) a=pyél-ó                      remó                      (Transitive)  
 1SG=IMPERF:defecate-TR    blood  
 ‘I defecate blood.’
- (37) a=pyél-élré                      (Middle 2)  
 1SG=IMPERF:defecate-MID  
 ‘I defecate (by myself).’
- (38) a=pyéló                      (Intransitive 2)  
 1SG=IMPERF:defecate  
 ‘I defecate.’

Among transitive verbs that have an intransitive counterpart and a morphologically derived middle form, a few have an intransitive counterpart that is allowed to be used in the Intransitive 1 sentence, and they have a middle form that is allowed to be used both in two types of middle sentences, Middle 1 and Middle 2. These are referred to as the class Intransitive/Transitive/Middle 1/Middle 2 verbs (Intr/Tr/Mid1/Mid2). Arguments that would be objects of transitive verbs may be subjects of morphologically derived middle forms in Middle 1 sentences. Arguments that would be subjects of transitive verbs may be subjects of morphologically derived middle forms in Middle 2 sentences. Arguments that would be subjects of transitive verbs are subjects of the intransitive counterparts in



- (44) *atfn gwólk-éré* (Middle 1)  
 child 3S/P:IMPERF:take care of-MID  
 'The child can be taken care of.'
- (45) *a=gwólk-é!ré* (Middle 2)  
 1SG=IMPERF:take care of-MID  
 'I take care of myself (I am careful).'
- (46) *a=gwók* (Intransitive 2)  
 1SG=IMPERF:shelter  
 'I shelter.'

Among transitive verbs that have an intransitive counterpart and a morphologically derived middle form, a few have an intransitive counterpart that is allowed to be used in the Intransitive 2 sentence. Their morphologically derived middle forms are allowed to be used in the Middle 1 sentence. These are referred to as the class Intransitive 2/Transitive/Middle 1 verbs. Arguments that would be objects of transitive verbs are subjects of morphologically derived middle forms in Middle 1 sentences. Arguments that would be subjects of transitive verbs are subjects of the intransitive counterparts in Intransitive 2 sentences. The verbs are included in the Intransitive/Transitive/Middle 1 verbs in this dictionary.

For instance, the object of the verb *ɲwalɔ* 'to bear' in the transitive sentence (47), 1<sup>st</sup> person singular, would be the subject of the middle form *ɲwal-éré* 'to be laid' in the Middle 1 sentence (48). The subject of the transitive verb *ɲwalɔ* 'to bear' (47), 3<sup>rd</sup> person singular, would be the subject of the intransitive counterpart *ɲwal* 'to give birth' in the Intransitive 2 sentence (49).

- (47) *ɔ=ɲwal-á* (Transitive)  
 3S/P=PERF:bear-1SG  
 'She gave birth to me (I was born).'
- (48) *abé ɔ=ɲwal-éré* (Middle 1)  
 eggs 3S/P=PERF:lay-MID  
 'The eggs have been laid.'
- (49) *a=ɲwál* (Intransitive 2)  
 1SG=PERF:bear:INT  
 'I gave birth.'





derived via morphological processes (54). It has no corresponding transitive stem. For the time being, these are referred to as the Intransitive/Middle 2 verbs (Intr/Mid2).

(53) a=túo (Intransitive 2)  
 1SG=PERF:be sick:INT  
 'I am sick.'

(54) a=túú-!ré (Middle 2)  
 1SG=PERF:be sick-MID  
 'I am sick.'

There is another exceptional verb. The transitive verb has two distinct forms which are used in transitive sentences. One of the two forms has a causative meaning (56). The other has no causative meaning (55). A morphologically derived middle form is semantically a counterpart of the form which has no causative meaning. The subject of the derived middle form in the Middle 1 sentence (57), 3<sup>rd</sup> person singular, would be the object of the corresponding transitive verb in the transitive sentence. The subject of the derived middle form in the Middle 2 sentence (58), 1<sup>st</sup> person plural, would be the subject of the corresponding transitive sentence (55). This verb is included in the class Transitive/Middle 1/Middle 2 verbs.

(55) a=nyâŋ leb kumam (Transitive)  
 1SG=PERF:understand:Tr Kumam language  
 'I understand the Kumam language.'

(56) a=nyâŋ-ó atŋ (Transitive, Causative)  
 1SG=IMPERF:make understand-TR child  
 'I make the child understand.'

(57) ɔ=nyâŋéré (Middle 1)  
 3S/P=PERF:understand  
 'It is understood.'

(58) ɔ=nyâŋ-éré (Middle 2)  
 1PL=PERF:understand-MID  
 'We understand each other.'

Kumam has a small number of ditransitive verbs. This dictionary does not describe which verbs are ditransitive.

- (59) i=mi-lá                      itabú  
 2SG=IMPERF:give-1SG    book  
 'You give me the book.'

#### 4.1.2 Frequentative forms

Most of transitive verbs have a frequentative transitive form which is productively derived from transitive verb stems. Verb stems basically consist of a monosyllabic structure, (C)V(C), in Kumam. Frequentative transitive forms are derived by reduplicating an initial consonant and a core vowel, (C)V, of verb stems in (54.a) (e.g. C<sub>1</sub>V<sub>2</sub>C → C<sub>1</sub>V<sub>2</sub>C<sub>1</sub>V<sub>2</sub>C). Frequentative transitive forms denote fundamentally repetition of action (61).

Frequentative transitive stems sometimes have an intransitive counterpart. Frequentative intransitive stems are derived by adding the frequentative intransitive suffix *-un* to frequentative transitive stems (62) (e.g. C<sub>1</sub>V<sub>2</sub>C<sub>1</sub>V<sub>2</sub>C → C<sub>1</sub>V<sub>2</sub>C<sub>1</sub>V<sub>2</sub>C-un). Most of transitive verbs have a frequentative transitive form. Since the derivation of frequentative transitive forms is quite productive, it is not necessary to specify which transitive forms have a frequentative transitive form in this dictionary. On the other hand, the derivation of frequentative intransitive forms is not productive, and frequentative intransitive forms are semantically in limited distribution. Frequentative intransitive forms are recorded for the transitive verbs in this dictionary when they have a frequentative intransitive form. It is not predictable which transitive forms have a frequentative intransitive form. If verbs do not have a frequentative intransitive form, they are marked with *\*-un* in this dictionary. Frequentative intransitive forms denote fundamentally repetition of voluntary action or event. Moreover, frequentative intransitive forms denote that the action or the event extends far and wide (63).

- (60) puput-o 'to uproot frequently' ← put-, puuto 'to uproot'

- (61) a=púpút-o                      dɔr  
 1SG=IMPERF:uproot:FREQ-TR    weed  
 'I frequently uproot weed.'

- (62) puput-un 'to be uprooted frequently' ← put-, puuto 'to uproot'



- (69) biidé 'to be dipped' ← bid-, biido 'to dip'
- (70) a=bíd-ó                    igoen    i-pi                    (Transitive)  
 1SG=IMPERF:dip    clothes    in-water  
 'I dip clothes in water.'
- (71) igoen    ɔ=biidé                    (Neuter)  
 clothes    3S/P=PERF:be dipped.  
 'Clothes are dipped.'
- (72) igoen    ɔ=bid-éré                    (Middle)  
 clothes    3S/P=PERF:be dipped  
 'Clothes are dipped (by someone).'
- (73) cɔɔdé 'to have sexual intercourse' ← cod-, cɔɔɔ 'to have sexual intercourse'
- (74) a=cɔɔd-ó                    !nákó                    (Transitive)  
 1SG=IMPERF:have sexual intercourse    girl  
 'I have sexual intercourse with the girl.'
- (75) a=cɔɔ!idé                    kede    nákó                    (Neuter)  
 1SG=PERF:have sexual intercourse    with    girl  
 'I have sexual relationship with the girl.'
- (76) nákó    cɔɔéré                    kede    awóbi                    (Middle)  
 girl    3S/P:IMPERF:have sexual intercourse    with    boy  
 'The girl has sexual intercourse with the boy.'

#### 4.1.4 -Vkm forms, -ar forms

There are other peripheral intransitive forms which are derived by attaching the suffixes, *-ar* and *-Vkm*, to stems in (77) and (78), respectively (e.g. CVC → CVC-*ar*, CV<sub>1</sub>C → CV<sub>1</sub>C-V<sub>1</sub>km). Although a few intransitive forms ending in the suffix *-Vkm* pair up with the transitive counterparts ending in the suffix *-Vkmɔ*, many of the *-Vkm* intransitive forms have no corresponding *-Vkmɔ* transitive counterparts. The *-ar* and the *-Vkm* intransitive forms denote fundamentally the state of events or actions. Because many of the *-Vkm* and the *-ar* intransitive verbs are isolated, it is not easy to find the original transitive verbs from which the *-Vkm* and the *-ar* intransitive forms are

derived. Consequently *-Vkm* and *-ar* intransitive verbs are recorded as entries in this dictionary.

(77) *jurus-ar* 'to be taken off' ← *jurus-, jurus-o* 'to take off'

(78) *a=júrús-o*                      *bóké*                      (Transitive)  
 1SG=IMPERF:take off-TR    leaves  
 'I take off leaves.'

(79) *bóké*    *ɔ=jurus-ar*                      (Intransitive)  
 leaves 3S/P=PERF:take off-INT  
 'The leaves were taken off.'

(80) *rukum-ukm* 'to be incubated' ← *rukumo* 'to incubate'

(81) *gweno*    *rúkóm-ɔ*                      *imíon*                      (Transitive)  
 chicken 3S/P:IMPERF:incubate-TR    chicks  
 'The chicken incubates the chicks.'

(82) *imíon*    *ɔ=rukum-ukm*                      (Intransitive)  
 chicks 3S/P=PERF:incubate-INT  
 'The chicks have been incubated.'

#### 4.1.5 Infinitive forms

Infinitive forms are recorded as entries for all verbs in this dictionary.

Transitive infinitive forms are derived by attaching the transitive infinitive formative suffix *-no* to verb stems. The alveolar nasal of the suffix *-no* is assimilated to the preceding consonant in point and manner of articulation. Moreover, stem vowels are lengthened in compensation for the loss of one of the geminated consonants (e.g. *ted-no* → *\*ted-do* → *teedo* 'to cook').<sup>16</sup> When stems end in a vowel, consonantal assimilation and compensatory lengthening do not occur. However, stem vowels are lengthened because of rhythm adjustment (e.g. *mi-no* → *míno* 'to give')<sup>17</sup>.

Infinitives are used as complements for verbs and nouns (83, 85). Moreover, infinitives occur as nominalizations (84).

<sup>16</sup> Vowel harmony: *ɔ*→*o*

<sup>17</sup> Linguistic forms are supposed to end with iambic rhythm in Kumam.

(83) a=tyé                    soomo        itabú  
 1SG=IMPERF:be read:INF book  
 'I am reading the book.'

(84) soomo        itabú-ní    yot  
 read:INF    book-this    easy  
 'To read this book is easy.'

(85) itabú-ní        soomo        yot  
 book-this    read:INF    easy  
 'This book is easy to read.'

Negative particle *lika* is followed by infinitives. However, the construction which consists of the verb *dágr* 'to refuse' and infinitives is often used as negative infinitives (87).

(86) lika        tmmó    tic    arac  
 NEG do:INF job bad  
 'Not to do job is bad.'

(87) dágrí        tmmó    tic    arac  
 refuse do:INF job bad  
 'Not to do job is bad.'

#### 4.1.6 Inflection, tense and aspect

Tense is not marked in verbal complexes, and is expressed by adverbial phrases. Aspect is marked with a suprasegmental morpheme in Kumam. Perfect aspect is distinguished from imperfect aspect by a lexical low toneme. Imperfect aspect is characterized without any morpheme. Verbal complexes consist of subject clitics, verbal stems and object suffixes segmentally. Only 2<sup>nd</sup> person plural subject is distinguished from the singular in indicative mood by the suffix *-umu*, by which plurality is indicated. Clitics are not subject to vowel harmony, but suffixes are subject to vowel harmony. [+ATR] vowels control vowel harmony. When verbs have an independent noun as a subject, no subject clitic is attached to verb stems segmentally in imperfect aspect, and the subject clitic *ɔ=* is attached to them in perfect aspect (89).

The subject clitics are the followings: *a=*, *i=* and *ε=* for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> person singular, respectively and *ɔ=*, *i=* and *gɛ=* for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> person plural, respectively. When verbs have an independent noun as a subject, the suprasegmental 3<sup>rd</sup> person subject clitic is attached to verb stems

in imperfect aspect and the 3<sup>rd</sup> person subject clitic  $\text{ɔ=}$  is attached to them in perfect aspect<sup>18</sup>. The suprasegmental 3<sup>rd</sup> person subject clitic consists of a high toneme. The suprasegmental 3<sup>rd</sup> person subject clitic in imperfect aspect and the 3<sup>rd</sup> person subject clitic  $\text{ɔ=}$  in perfect aspect are used not only for singular but also for plural.

(88)	Imperfect	Perfect
sg. 1	a=téd-ó !cám	a=té!d-ó !cám
2	i=téd-ó !cám	i=té!d-ó !cám
3	ɛ=téd-ó !cám	ɛ=té!d-ó !cám / $\text{ɔ=ted-o}$ cáam (switch-reference)
pl. 1	$\text{ɔ=téd-ó}$ !cám	$\text{ɔ=té!d-ó}$ !cám
2	i=téd-ú!nú cáam	i=té!d-ú!nú cáam
3	gɪ=téd-ó !cám	gɪ=té!d-ó !cám <sup>19</sup>
	'I cook food, etc.'	'I cooked food, etc.'

When verbs have independent nouns as a subject, plural cannot be distinguished from singular in verbal inflection. Even if subjects are plural, the suprasegmental 3<sup>rd</sup> person singular clitic is attached to verb stems in imperfect aspect (89, 90). The 'switch-reference' 3<sup>rd</sup> person singular subject clitic  $\text{ɔ=}$  is used in perfect aspect, whether subjects are singular or plural (89, 90).

(89)	Imperfect	Perfect
	icóɔ téd-ó !cám	icóɔ $\text{ɔ=ted-o}$ cáam
	man 3S/P:IMPERF:cook-TR food	man 3S/P=PERF:cook-TR food
	'The man cooks food.'	'The man cooked food.'
(90)	cɔɔ téd-ó !cám	cɔɔ $\text{ɔ=ted-o}$ cáam
	men 3S/P:IMPERF:cook-TR food	men 3S/P=PERF:cook-TR food
	'The men cook food.'	'The men cooked food.'

The 3<sup>rd</sup> person singular subject clitic  $\text{ɔ=}$  is used to indicate that the subject of the complement is not the same as the subject of the matrix (91). The function of the subject clitic  $\text{ɔ=}$  is referred to as 'Switch-Reference'. In addition to 'Switch-Reference' function, the subject clitic  $\text{ɔ=}$  is used to indicate that the subject is an unspecific referent.

The 3<sup>rd</sup> person singular subject clitic  $\text{ɛ=}$  is used to indicate that the subject of the complement

<sup>18</sup> The 3<sup>rd</sup> person singular and the 1<sup>st</sup> person plural subjects are distinguished in perfect aspect only by tone.

<sup>19</sup> When verbs are preceded by the 3<sup>rd</sup> person plural independent pronoun *gɪ*, the 3<sup>rd</sup> person plural subject clitic *ɪ=* is attached to verbs (e.g. *gɪn ɪ=tédó* in imperfect, *gɪn ɪ=té!dó* in perfect).



may be the same or may not be the same as the subject of the matrix (92). The function of the subject clitic  $\varepsilon=$  is referred to as 'Non-Switch-Reference'. In addition to 'Non-Switch-Reference' function, the subject clitic  $\varepsilon=$  is used to indicate that the subject is a specific referent.

- (91)  $\text{icóó } \text{ɔ=yutuno} \quad \text{bé } \text{ɔ=cego} \quad \text{ekéko}$   
 man<sub>1</sub> 3S/P=PERF:remember that 3S/P<sub>2</sub>=PERF:close door Switch-Reference  
 'The man<sub>1</sub> remembered that he<sub>2</sub> closed the door.'

- (92)  $\text{icóó } \text{ɔ=yutuno} \quad \text{bé } \text{é=!cé!gó} \quad \text{ekéko}$   
 man<sub>1</sub> 3S/P=PERF:remember that 3S/P<sub>1/2</sub>=PERF:close door Non-Switch-Reference  
 'The man<sub>1</sub> remembered that he<sub>1/2</sub> closed the door.'

When the 'Non-Switch-Reference' subject clitic  $\varepsilon=$  is used in consequences of sentences, the 'Non-Switch-Reference' subject clitic  $\varepsilon=$  refers any referent in the preceding sentences (93). However, if the preceding sentence has a topicalized noun phrase, the 'Non-Switch-Reference' subject is usually used to indicate that the subject of the following sentence is the same as the topic of the preceding sentence (94).

- (93)  $\text{icóó } \text{ɔ=neno} \quad \text{dákó.} \quad \text{ɛ=cá!mó} \quad \text{dek.}$   
 man<sub>1</sub> 3S/P=PERF:see woman<sub>2</sub> 3S/P<sub>1/2</sub>=PERF:eat stew  
 'The man saw the woman. He/She ate stew.'

- (94)  $\text{dákó, } \text{icóó } \text{ɔ=neno.} \quad \text{ɛ=cá!mó} \quad \text{dek.}$   
 woman<sub>2</sub>, man<sub>1</sub> 3S/P=PERF:see 3S/P<sub>2</sub>=PERF:eat stew  
 'The woman, the man saw. She ate stew.'

Perfect aspect is marked with a low toneme, and imperfect aspect is characterized without any toneme. A subject clitic bears a low and a high toneme in lexicon. Every simple verb stem bears a high toneme when it is not extended morphologically. The transitive formative suffix  $-\text{ɔ}$  bears a lexical low toneme. The relation between underlying and surface representations is illustrated with conventions of autosegmental analysis (95).

The suprasegmental 3<sup>rd</sup> person singular subject clitic consists of a high toneme only in imperfect aspect. The 3<sup>rd</sup> person singular subject clitic  $\text{ɔ=}$  bears a low toneme in perfect aspect. Every simple verb stem bears a low toneme for the 3<sup>rd</sup> person singular in perfect aspect. The relation between underlying and surface representations is illustrated with conventions of autosegmental analysis in (96).

Verbal complexes have a floating low toneme in rightmost position both in imperfect and perfect aspect. When words beginning with a high toneme follow the verbal complexes, the initial syllable of the words is pronounced with a downstep high tone both in imperfect and perfect aspect in (95, 96).

(95)	Imperfect	Perfect
	LH H(L) H	L H(L)H(L) H
		/
	a=téd-ó !cám	a=té!d-ó !cám
	'I cook food.'	'I cooked food.'

(96)	Imperfect	Perfect
	LHL H H(L) H	LHL LL LL H
	icúú téd-ó !cám	icúú ɔ=téd-o cáam
	'The man cooks food'	'The man cooked food.'

Object suffixes are attached to transitive stems following the transitive formative suffix *-ɔ*. When object suffixes begin with a vowel, vowel sandhi takes place between the transitive formative suffix *-ɔ* and vowels of object suffixes. Although vowels are deleted according to vowel sandhi rules, tonemes are preserved all through tonal processes.

The object suffixes are the followings: *-a*, *-i* and *-e* for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> person singular, and *-wa*, *-wu* and *-gi* for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> person plural (97).

(97)	Imperfect	Perfect
	sg.1 ε=dí!p-á	ε=dí!!p-á
	2 ε=dí!p-i	ε=dí!!p-i
	3 ε=dí!p-é	ε=dí!!p-é
	pl.1 ε=díp-ó-!wá	ε=dí!p-ó-!wá
	2 ε=díp-ó-!wú	ε=dí!p-ó-!wú
	3 ε=díp-ó-!gí	ε=dí!p-ó-!gí
	'He hits me, etc.'	'He hit me, etc.'

In 2<sup>nd</sup> person plural is distinguished from singular by the plurality suffix *-unu*. Personal pronominal object suffixes are attached to verb stems before the plurality suffix *-unu* (99).

(98) Imperfect	Perfect
i=né!k-á	i=né!!k-á
2SG=IMPERF:kill-1SG	2SG=PERF:kill-1SG
'You (sg.) kill me.'	'You (sg.) killed me.'

(99) Imperfect	Perfect
i=né!k-á-lnú	i=né!!k-á-lnú <sup>20</sup>
2SG=IMPERF:kill-1SG-PL	2SG=PERF:kill-1SG-PL
'You (pl.) kill me.'	'You (pl.) killed me.'

All object suffixes have a lexical high toneme. Object suffixes in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> person singular are pronounced with a double downstep high tone in perfect aspect, while they are pronounced with a downstep high tone in imperfect aspect (97).

The relation between underlying and surface tonal representations is illustrated with conventions of autosegmental analysis in (100). Subject clitics bear a low and a high toneme in lexicon. Perfect aspect is marked by a low toneme, while imperfect aspect is characterized without any toneme. Every simple verb stem bears a lexical high toneme in indicative. The transitive formative suffix -o bears a lexical low toneme.

(100) Imperfect	Perfect
LH(H)(L)H	LH(L)(H)(L)H
/	/
ε=di!p-á	ε=di!!p-á
'He hits me.'	'He hit me.'

Tonal representations of verbal complexes are always predictable, because simple verb stems always bear a lexical high toneme in indicative and a lexical tonal pattern of a low and a high toneme in subjunctive, when they are not extended morphologically. Consequently tone is not recorded for verbs in this dictionary.

Past tense is expressed by the adverbial particle *oɔɔɔ*, which is originated from the main verb *o=ɔɔɔ* 'it observed' in complementation (102). The adverbial particle *oɔɔɔ* is followed by verbal complexes. The verbal complexes may be marked with imperfect or perfect (101).

<sup>20</sup> The vowel of the object suffix changes its [ATR] value from [-] to [+] in harmony with the vowels of the plurality suffix -*lnu*. The initial vowel of the plurality suffix is deleted according to particular vowel sandhi rule. In general preceding vowels are deleted in vowel sandhi when vowels are in sequence.

(101)	Past tense imperfect	Past tense perfect
sg. 1	oɔdo a=tédó !cám	oɔdo a=té!dó !cám
2	oɔdo i=tédó !cám	oɔdo i=té!dó !cám
3	oɔdo ε=tédó !cám	oɔdo ε=té!dó !cám
pl. 1	oɔdo o=tédó !cám	oɔdo o=té!dó !cám
2	oɔdo i=tédú!nú cáam	oɔdo i=té!dú!nú !cám
3	oɔdo gr=tédó !cám	oɔdo gr=té!dó !cám
	'I cooked food, etc.'	'I had cooked food, etc.'

(102)	o=ɔdo	a=tédó	!cám
	3S/P=PERF:observe	1SG=IMPERF:cook	food
	'Someone observed (that) I cook food.'		

Kumam has two types of complement constructions, a hypotactic and a paratactic construction, according to Noonan's terminology. A complementizer *be* 'that' is followed by subordinate clauses in the hypotactic construction, while subordinate clauses directly follow verbs of main clauses without a complementizer in the paratactic construction. Past tense expressions originate from paratactic constructions which have the verb *oɔdo* 'to observe' in the main clauses (102).

The adverb *oɔdo* is lexicalized as an adverb particle for expressing the past, and can be located anywhere in sentences. It may be located in initial, middle, or final position of sentences (103).

(103)	1. oɔdo	dákó	o=wilo	kal
	PAST	woman	3S/P=PERF:buy	millet
	2. dákó	oɔdo	o=wilo	kal
	woman	PAST	3S/P=PERF:buy	millet
	3. dákó	o=wilo	oɔdo	kal
	woman	3S/P=PERF:buy	PAST	millet
	4. dákó	o=wilo	kal	oɔdo
	woman	3S/P=PERF:buy	millet	PAST
	'The woman bought millet.'			

Events or actions which took place in the past are usually expressed with simple perfect aspect, not past tense. However, non-action verbs such as 'want' are not marked with perfect aspect (105, 107).

Non-action verbs are always marked with imperfect aspect being accompanied by the past adverbial particle *ɔɔɔɔ*, when they denote that events happened in the past (106).

(104) a=mító                      !cám  
1SG=IMPERF:want food  
'I want food.'

(105) \*a=mító                      !cám  
1SG=PERF:want food  
'I wanted food.'

(106) ɔɔɔɔ a=mító                      !cám  
PAST 1SG=IMPERF:want food  
'I wanted food.'

(107) \*ɔɔɔɔ a=mító                      !cám  
PAST 1SG=PERF:want food  
'I wanted food.'

Action verbs can be marked with imperfect and perfect aspect in present and past tense (108, 109, 110, 111).

(108) a=wíló                      itabú  
1SG=IMPERF:buy book  
'I buy a book.'

(109) a=wíló                      itabú  
1SG=PERF:buy book  
'I bought a book.'

(110) ɔɔɔɔ a=wíló                      itabú  
PAST 1SG=IMPERF:buy book  
'I used to buy a book.'



#### 4.1.7 Imperative and subjunctive

Every simple verb stem bears a particular lexical tonal pattern LH in imperative mood. Moreover, since every simple verb stem consists of a monosyllabic structure, simple verb stem in imperative mood for singular satisfies the environments where floating high tonemes appear. If simple verb stems are followed by words beginning with a low toneme in singular imperative mood, 'Floating High Assignment' occurs between verb stems in imperative mood and the following words (119).

The suffix for plurality *-unú* is attached to imperative stems in plural imperative (116, 117). When object suffixes are attached to imperative stems, they are inserted between imperative stems and the suffix for plurality *-unú* in plural imperative (118).

(116)	sg.		pl.
	cam	rí!ŋó	cam-ú!nú ríŋ!ó
	eat:IMP	meat	eat:IMP-PL meat
		'Eat meat!'	'Eat (pl.) meat!'

(117)	sg.		pl.
	cam-í		cam-ú!nú
	eat:IMP		eat:IMP-PL
	'Eat!'		'Eat (pl.)!'

(118)	sg.		pl.
	cam-é		cam-é!nú
	eat:IMP-3SG		eat:IMP-3SG:PL
	'Eat it!'		'Eat (pl.) it!'

(119)	LH	LLH		L	HLLH	
					\	
	cam	ríŋo	→	cam	rí!ŋó	
	eat	meat			'Eat (sg.) meat!'	'Floating High Assignment'

When verbs are not followed by objects in singular imperative, the subjunctive suffix *-i* is attached to the verb stems (120).

(120)	LH	
		\
	cam-í	'Eat (sg.)'

The suffix *-unu* for plurality is attached to verb stems for plural imperative. The subjunctive suffix *-i* is not attached to verb stems when they are already affixed with the suffix *-unu* for plurality (121)

(121) LH(L)H  
 | \ |  
 cam-ú!nú  
 eat-PL 'Eat (pl.)!'

(122) LHLHLLH      LHLH (L)LH  
                          | \ | \ | /  
 cam-unu riño → cam-ú!nú rí!ño  
 eat-PL meat      'Eat (pl.) meat!'

First person dual is distinguished from 1<sup>st</sup> person plural only in subjunctive mood. 1<sup>st</sup> person dual denotes that a subject consists of two persons including a speaker. 1<sup>st</sup> person plural denotes that a subject consists of more than two persons including a speaker. The suffix *-unu* for plurality is attached to verb stems for 1<sup>st</sup> person plural, but not to verb stems for 1<sup>st</sup> person dual (123). The suffix *-unu* for plurality is also attached to verb stems for 2<sup>nd</sup> person plural. When verbs are not followed by objects, the subjunctive suffix *-i* is attached to verb stems except for 1<sup>st</sup> person dual and 2<sup>nd</sup> person plural.

(123) sg. 1      myero a=cá!m-í  
          2      myero i=cá!m-í  
          3      myero e=cá!m-í  
 pl. 1 dual    myero o=cá!m-í  
          1      myero o=cá!m-ú!nú  
          2      myero i=cá!m-ú!nú  
          3      myero gr=cá!m-í  
          'I should eat, etc.'

(124) LL LHLH      LL LH(L)H  
                          || || |  
 myero a=cam-i → myero a=cá!m-í  
 should 1SG=eat:SUB-sub 'I should eat.'



Subject clitics bear a lexical tonal pattern LH, and simple verb stems always bear a lexical tonal pattern LH in subjunctive. Verbal complexes have neither segmental nor suprasegmental morpheme for expressing aspect in subjunctive mood (124).

- (125) sg. 1    myero a=cám !rí!ŋó  
           2    myero i=cám !rí!ŋó  
           3    myero ε=cám !rí!ŋó  
 pl. 1 dual myero ɔ=cám !rí!ŋó  
           1    myero ɔ=cám!m-únú  
           2    myero i=cám!m-únú rí!ŋó  
           3    myero gr=cám !rí!ŋó  
           'I should eat meat, etc.'

Kumam has no morphological device for constructing benefactive stems. However, when benefactive nominal phrases follow verbs in subjunctive, the preposition *né* 'for' is attached to the preceding verb stems (127). The nasal consonant of the preposition *né* is assimilated with the preceding consonant and one of the geminated consonants is deleted resulting in lengthening of verb stem vowels in compensation for the loss of the consonant (e.g. *wil + né > wille > wile*)<sup>21</sup>.

- (126) a=mító                    !bé dákó    wíl        né atín    itabú  
 1SG=IMPERF:want    that woman buy:SUB for child book  
 'I want that the woman should buy the book for the child.'

- (127) a=mító                    !bé dákó    wílé            atín    itabú  
 1SG=IMPERF:want    that woman buy:SUB:BEN child book  
 'I want that the woman should buy the book for the child.'

Kumam has the pseudo-benefactive construction for some verbs. Direct objects are interrupted as benefactives when they are attached to verbs as object suffixes (128). Since the object suffixes in the verbal complexes are objects in the pseudo-benefactive construction, other objects are not allowed to follow the verbal complexes (129). The verbs which allow the pseudo-benefactive construction are *yaabo* 'to open (a door)', *soomɔ* 'to read', and *bulɔ* 'to taste'. The thematic role of benefactive is usually expressed by the preposition *né* (130). The others do not have the

<sup>21</sup> In indicative the transitive formative suffix *-ɔ* blocks the assimilation of the nasal.

pseudo-benefactive construction (131).

(128) dákó ɔ=tɛd-á  
woman 3SG=PERF:cook-1SG  
'The woman cooked for me.'

(129) \*dákó ɔ=tɛd-á cáám  
woman 3SG=PERF:cook-1SG food  
'The woman cooked food for me.'

(130) dákó ɔ=tɛdo n:á cáám  
woman 3SG=PERF:cook for:1SG food  
'The woman cooked food for me.'

(131) \*ɪcúɔ ɔ=ger-á  
man 3SG=PERF:build-1SG  
'The man built for me.'

#### 4.1.8 Gerunds, repetition

Some verbs can be used in repetition. Verbs are followed by gerund forms, which are constructed from verb stems being prefixed with *a-* and suffixed with *-á*. The gerunds may follow verbal complexes for constructing repetitions of verbs. The repetition forms denote that actions are performed repeatedly (133).

(132) kal mé a-ryég-á  
millet of GER-grind-GER  
'millet for grinding'

Gerunds may be followed by nominal phrases as object (134). Gerunds may follow transitive verbs or prepositions as objects (132).

(133) a=bínó a-bín-á noró.  
1SG=IMPEF:come GER-come-GER yesterday  
'I came and came yesterday.'

- (134) ε=sólímó      α-sóm-á      itabú  
 3SG=PERF:read GER-read-GER book  
 'He read and read a book.'

#### 4.1.9 Negation

The negative particle *liká* is followed by predicates in indicative mood (135). The negative particle *kór* is used as negation in subjunctive mood (136). Negative subjunctives in 2<sup>nd</sup> person are used for negative imperatives (137, 138).

- (135) dákó      líká      ɔ=tedo      cáṃ  
 woman NEG 3S/P=PERF:cook food  
 'The woman did not cook food.'

- (136) a=mi!ó      ícúó      lworó      bé      kúr      ε=kwál      gwéno  
 1SG=PERF:give man threat COMP NEG 3SG=steal:SUB chicken  
 'I threatened the man not to steal the chicken.'

- |       |     |               |                     |
|-------|-----|---------------|---------------------|
| (137) | sg. |               | pl.                 |
|       | kór | í=!cá!m-í     | kór                 |
|       | NEG | 2SG=eat-SUB   | NEG                 |
|       |     |               | 2SG=eat:SUB:PL      |
|       |     | 'Do not eat!' | 'Do not eat (pl.)!' |

- |       |     |                    |                          |
|-------|-----|--------------------|--------------------------|
| (138) | sg. |                    | pl.                      |
|       | kór | í=!cám             | rí!ṅó                    |
|       | NEG | 2SG=eat:SUB        | meat                     |
|       |     |                    | NEG                      |
|       |     |                    | 2PL=eat:SUB-PL           |
|       |     |                    | meat                     |
|       |     | 'Do not eat meat!' | 'Do not eat (pl.) meat!' |

Since the negation particles are always followed by predicates, negative nominal phrases cannot be expressed by the negation particles. Negative nominal phrases are usually expressed by relative constructions.

- (139) atín      amé      líká      ɔ=oto      góló  
 child REL NEG 3S/P=PERF:go Gulu  
 'No child has gone to Gulu.'

- (140) gín amé líká a=cá!mó  
 thing REL NEG 1SG=PERF:eat  
 'I ate nothing.'

## 4.2 Nouns

### 4.2.1 Number

Most of nouns have no distinctive singular and plural forms in Kumam. Although there is no productive morphological operation to derive plural forms from singular forms or to derive 'singulative' forms from plural forms, a few nouns have distinct singular and plural forms. The distinctive plural or 'singulative' forms might be relics of archaic morphological operations through which 'singulative' and plural forms were derived. Although morphological operation for deriving 'singulative' and plural forms is lost in the present language, most of the borrowed words (probably from Teso) in Kumam have distinctive singular and plural forms, which are not of Kumam origin. Kumam might borrow the singular and plural forms after the language lost the productive morphological devices to derive plural and 'singulative' forms. Plural or 'singulative' forms are recorded in this dictionary only when nouns have distinctive 'singulative,' singular or plural forms. For instance, the noun 'boat' preserves an archaic singular and a plural form (1). The noun 'cow' retains an archaic 'singulative' and a plural form (2). The noun 'cat' has distinctive singular and plural forms, which are probably borrowed from Teso (3).

- (1) ye 'boat, sg.'                      yédé(L) 'boat, pl.'
- (2) dyaŋ 'cow, 'singulative''      dóké 'cow, pl.'
- (3) após(L) 'cat, sg.'                apusin 'cat, pl.'

### 4.2.2 Possession

Kumam distinguishes alienable and inalienable possession like other western Nilotic languages. Some nouns for body parts and kinship terms have distinctive forms for inalienable and alienable possession.

Forms for alienable possession are derived through productive morphophonological operation. For instance, the 1<sup>st</sup> person singular possessive suffix *-ná* is attached to nouns, and the alveolar nasal /n/ of the suffix may be assimilated to the preceding consonant<sup>22</sup>. The alveolar nasal of the suffix constitutes geminated consonants with the preceding consonants. Moreover, vowels

<sup>22</sup> The vowel of the suffix is subject to vowel harmony.

preceding the geminated consonants may be lengthened in compensation for the loss of one of the geminated consonants. When nouns end in a vowel, the consonantal assimilation or compensatory lengthening is blocked (4).

When nouns end in a consonant, three variants of possessive forms coexist synchronically (5). The first are the forms that do not follow consonantal assimilation or compensatory lengthening (e.g. *itna* 'my ear'). The second are the forms that follow only consonantal assimilation (e.g. *ittá* 'my ear'). The third are the forms that follow both consonantal assimilation and compensatory lengthening (e.g. *iita* 'my ear').

A few nouns preserve archaic forms for inalienable possession. The preserved inalienable possessive forms are relics of archaic morphological operations for distinguishing inalienable from alienable possession. For instance, the 1<sup>st</sup> person singular inalienable possessive suffix \*-á is attached to nouns (6) (e.g. *wia* 'my head, inalienable'). Variations of alienable and inalienable possessive forms for 1<sup>st</sup> person singular are recorded in this dictionary, when nouns have distinct inalienable and alienable possessive forms.

Inalienable possessive forms are sometimes used to distinguish between singular and plural, because Kumam has lost productive morphology for deriving 'singulative' and plural forms. For instance, *wia* 'my head, inalienable' is used for the singular, because human beings have only one own head. The alienable possessive form *wicna* 'my head or my heads, alienable' is often used for expressing plurality, because human beings do not possess more than two heads on their necks (7). Many heads are not possessors' own heads, but animals' heads of possessors, for instance.

- (4) ogwók 'dog' + -ná 'my' → ogwók!ná 'my dog'  
 del 'skin' + -ná 'my' → dellá 'my skin, Inalienable'  
 del 'skin' + -ná 'my' → deelá 'my skin, Inalienable'  
 keno 'fireplace' + -ná 'my' → kenoná 'my fireplace'

- (5) ít 'ear' + -ná 'my' → ít ná ~ ít tá ~ ít tá 'my ear, Alienable'

- (6) wic 'head' + \*-á 'my' → wiá 'my head, Inalienable'

- (7) wic 'head' + -ná 'my' → wicná 'my head, Alienable'

(8)	Inalienable	Alienable
	sg. 1 wiá	wic-ná <sup>23</sup>
	2 wií	wic-ní
	3 wié	wic-méré
	pl. 1 wiwá	wic-wá
	2 wiwí	wic-wú
	3 wigi	wic-gí
	'my head, etc.'	'my head, etc.'

Many nouns lost original distinctive forms for alienable and inalienable possession. However, Kumam developed innovation for distinguishing inalienable from alienable possession. A variant of alienable possessive forms are sometimes used for inalienable possession. In order to express inalienable possession, speakers make use of the forms that are derived by applying the consonantal assimilation and the compensatory lengthening. The forms that are not subject to consonantal assimilation or compensatory lengthening are used for expressing alienable possession (9). For instance, the possessive form *adamna* 'my brain' is used for alienable possession, and the possessive form *adaama* 'my brain' is used for inalienable possession. The innovation cannot distinguish alienable and inalienable possession for first, second and third person plurals, because first, second and third person plural possessive suffixes begin with a consonant (10). The 3<sup>rd</sup> person singular possessive suffix *-méré* is newly developed for expressing alienable possession (10). The innovation is not a norm, but a tendency at present.

- (9) *adám* 'brain' + *-ná* → \**adámmá* → *adáámá* 'my brain, Inalienable (Innovation)'  
*adám* 'brain' + *-ná* → *adámmá* 'my brain, Alienable'  
*del* 'skin' + *-ná* → *dellá* ~ *deelá* 'my skin, Inalienable (Innovation)'  
*del* 'skin' + *-ná* → *delná* 'my skin, Alienable'

(10)	Inalienable (Innovation)	Alienable
	sg. 1 léébá	léb-ná
	2 léébí	léb-ní <sup>24</sup>
	3 léébe	léb-méré

<sup>23</sup> When nominal stems end in a consonant, nasal and glide consonants interrupt vowel harmony. Even though stems consist of [+ATR] vowel, vowels of suffixes beginning with a nasal or a glide do not turn [ATR] value of the vowels from [-] to [+].

<sup>24</sup> When nominal stems end in a consonant, nasals interrupt vowel harmony.

pl. 1	léb-wá	léb-wá
2	léb-wú	léb-wú <sup>25</sup>
3	léb-gí	léb-gí
	'my tongue, etc.'	'my tongue, etc.'

Inalienable and alienable possession is distinguished also in genitive constructions. Possessed nouns and possessors are linked with the possessive particle *á(L)* in alienable possession<sup>26</sup>. Possessed nouns and possessors are linked only with a suprasegmental morpheme, a low toneme, in inalienable possession. For instance, the noun *dɔg* 'mouth' may constitute a genitive construction with the noun *dakɔ* 'woman' in inalienable possessive, and the noun *agulu* 'pot' constitutes a genitive construction with the noun *dakɔ* 'woman' in alienable possession (11).

(11) Inalienable	Alienable
H (L) HHL	LHH H(L) HHL
dɔg    !dákó	agúlú á    !dákó
mouth woman	pot    of woman
'mouth of a woman'	'pot of a woman'

This dictionary records distinctive forms of alienable and inalienable possession, only when Kumam speakers point out the distinction.

#### 4.2.3 Animate vs. inanimate

Kumam distinguishes animate and inanimate nouns morphosyntactically. Distinctive forms of possessive particles are used for animate and inanimate nouns in genitive constructions. When possessors are animate nouns, the possessive particle *a* is basically used for linking possessed nouns with possessors (14). When possessors are inanimate nouns, the possessive particle *mé(L)* 'of', is used for linking possessed nouns with possessors (12)<sup>27</sup>. However, both the possessive particle *a* and the possessive particle *mé(L)* 'of' may be used for many of animate possessors (13). The possessive particle *a* is exclusively used when possessors are some terms for relatives such as 'mother' and 'father', and the noun 'God' (14).

<sup>25</sup> When nominal stems end in a consonant, glide consonants interrupt vowel harmony.

<sup>26</sup> The possessive particle bears a high and a low toneme in lexicon. The vowel of the particle is harmonized to vowels of the preceding forms.

<sup>27</sup> The vowel of the preposition *mé* 'of' is harmonized with vowels of the preceding words.

(12) jámé mé egóe / \*jámé á egóe  
 things of cloth things of cloth  
 'things of cloth' 'things of cloth'

(13) jámé mé emúrón / jámé á emúrón  
 things of doctor things of doctor  
 'things of a doctor' 'things of a doctor'

(14) \*jámé mé papa / jámé á papa  
 things of father things of father  
 'things of father' 'things of father'

Vowel sandhi occurs between the possessive article *a* and vowels of nouns. When a vowel is followed by another vowel, the preceding vowel is deleted. However, vowel sandhi occurs only in unstressed vowels. All lexical tonemes are preserved though vowels are deleted according to vowel sandhi rules. The vowel of the noun *jame* 'things' in final position is deleted, because the vowel is not stressed (15). The vowel of the noun *le* 'animal' is not deleted because it is stressed (16). When possessors begin with a vowel, the possessive particle can be deleted before the following vowels, because the possessive particle is not stressed (17).

(15) jámé a dákó → [jámá!dákó]  
 things of woman 'things of a woman'

(16) lé a dákó → [\*lé!dákó]  
 animal of woman 'animal of a woman'

(17) pi a úm → [piúm]  
 water of nose 'water of nose'

(18) agúlú a róo → [agúlú!còo]  
 pot of man 'pot of a man'

When final vowels of possessed nouns are followed by initial vowels of possessors after the possessive particle is deleted according to vowel sandhi rules, vowel sandhi occurs between the final vowels of possessed nouns and the initial vowels of possessors if they are not stressed (18).



#### 4.2.4 Compound

Compounds are constructed from nouns in combination with more than two words. The leftmost word in compounds is the head. The elements are simply juxtaposed without any segmental or suprasegmental morpheme (20). Compounds are followed by qualifiers. Compounds are not intervened by qualifiers. Possessive suffixes are attached at the end of compounds.

(19) atín                    'child'  
      sukú!lú            'school'

(20) atín sukú!lú        'pupil'

(21) atín sukú!lú-ná    'my pupil'

(22) ɲut                    'neck'  
      cɪŋ                    'hand'

(23) ɲut cɪŋ            'wrist'

(24) ɲut cɪŋ-ɲá        'my wrist' <sup>28</sup>

#### 4.2.5 Definite and indefinite

The indefinite suffix is *-mɔrɔ*, which has a plural counterpart *-mɔgɔ* (25). Nouns that are not affixed by the indefinite suffixes are interpreted as definite (26).

(25) sg.                    pl.  
      yat-mɔrɔ            yén-!mɔgɔ  
      'a tree'            'some trees'

(26) sg.                    pl.  
      yat                    yén  
      'the tree'            'the trees'

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<sup>28</sup> *hwét á-láwón* 'thumb' is not a compound. Nouns and adjectives are intervened by possessives (cf. *hwét-á á-láwón* 'my thumb').

### 4.3 Adjectives

#### 4.3.1 Number

Some adjectives have distinctive forms for singular and plural. Others have same forms for singular and plural (1). Adjectives agree with modified nouns in number (2, 3).

(1)	sg.	pl.	
	rac	reco	'bad'
	ber	beco	'good'
	dwón	dón	'large, big'
	títídí	títínó	'small'
	lyet	lyet	'hot'
	ojon	ojon	'thin'
	ikuku	ikuku	'dull'

The adjectives beginning with the vowel *ɔ/o* originate from verbs. The vowel *ɔ/o* is considered to be the 3<sup>rd</sup> person subject clitic *ɔ=* in perfect aspect. The adjectives beginning with the vowel *i/i* originate from compounds of the preposition *i* 'at, on, in' and nouns.

(2)	sg.	pl.	
	ɲat a-bér	jo a-béco	'good man, men'
	atín a-rác	idúé a-réco	'bad child, children'
	ogwók a-dwón	igwógín a-dón	'big dog, dogs'
	ot a-títídí	údé a-títínó	'small hut, huts'
	icúɔ ójon	cúɔ ójon	'thin man, men'

(3) twol rac  
snake bad  
'The snake is bad.'

(4) twólé reco  
snakes bad, pl.  
'The snakes are bad.'

(5) ogwók ber  
dog good  
'The dog is good.'

(6) igwógín beco  
 dogs good, pl.  
 'The dogs are good.'

(7) icóo ojon  
 man thin  
 'The man is thin.'

#### 4.3.2 Inflection, tense and aspect

Adjectives behave like verbs in many respects. Adjectives constitute complexes with subject clitics in imperfect aspect (8). Adjectival complexes are always used in imperfect aspect. Perfect aspect is not possible for adjectives. Past tense is expressed by the adverbial particle *ɔɔɔ* 'lit. it observed', which is an innovation from complementation. When subjects are independent nouns in predicate adjectival constructions, subjects and adjectival complements are linked without a copula (9).

(8)	Present	Past
	sg. 1 a=rác	ɔɔɔ a=rác
	2 i=rác	ɔɔɔ i=rác
	3 e=rác	ɔɔɔ e=rác
	pl. 1 ɔ=réco	ɔɔɔ ɔ=réco
	2 i=récunú	ɔɔɔ i=récunú
	3 gi=réco	ɔɔɔ gi=réco
	'I am bad, etc.'	'I was bad, etc.'

(9)	atín rac	ɔɔɔ atín rac
	child bad	PAST child bad
	'The child is bad.'	'The child was bad.'

#### 4.3.3 Associative construction

When adjectives modify nouns, modified nouns and adjectives are linked with the attributive particle *a(H)*, which bears a low and a high toneme in lexicon (10)<sup>29</sup>. Associative construction is considered to be equivalent to relative construction (11, 12). Relative clauses are preceded by the attributive particle *a(H)* (11). The vowel of the attributive particle *a(H)* is often deleted before the following vowel in vowel sandhi, where all tonemes are preserved in tonal processes (12).

<sup>29</sup> The attributive particle is subject to vowel harmony. The vowel of the particle is harmonized to vowels of the following morphemes.

(10) LHL LHL  
 || | \ |  
 atín a-rác  
 child ATT-bad  
 'bad child'

(11) a=twó!mó dákó a ó=tedo cáam  
 1SG=PERF:hit woman REL:3S/P=PERF:cook food  
 'I hit the woman who cooked food.'

(12) a=twó!mó dákó ó=tedo cáam  
 1SG=PERF:hit woman REL:3S/P=PERF:cook food  
 'I hit the woman who cooked food.'

Some adjectives begin with a vowel (1) (e.g. *ojot* 'thin'). Vowel sandhi occurs only in unstressed vowels. The attributive particle is not stressed. When adjectives begin with a vowel, the vowel of the attributive particle *a*(H) is deleted before the vowels of adjectives in vowel sandhi. All lexical tonemes are preserved in tonal processes, though vowels are deleted in vowel sandhi. For instance, the high toneme of the attributive particle *a*(H) is assigned to the leftmost TBU of the adjective *ojot* 'weak', though the vowel of the attributive particle is deleted (14). Vowel sandhi and tonal processes in associative construction (13, 14) are the same as in relative construction (11, 12).

(13) ɪcúɔ a(H) ojot → [ɪcúɔ ójot] (Vowel Sandhi: a + o → o)  
 man ATT weak 'weak man'

(14) LHL L H LL  
 ||| \ |  
 ɪcúɔ ATT ójot  
 man weak  
 'weak man'

Many of monosyllabic adjectives bear a low toneme in lexicon. However, some adjectives have a specific tonal pattern in lexicon individually (15). Consequently, unlike in tonal system of verbal morphology, tones of adjectives in surface representation are not predictable unless tonal patterns of them are specified in lexicon. Lexical tonal patterns of adjectives are recorded in this dictionary.

(15)	mit	'sweet'
	tek	'hard'
	rírírá	'liquid'
	tídí	'small'

#### 4.3.4 Infinitives

Although adjectives behave like verbs morphosyntactically on many occasions, they lack particular forms for infinitive and subjunctive. When adjectival forms for infinitive or subjunctive are required, verbs *beedo* 'to stay' or *ɔ̀ɔ̀kɔ̀* 'to become' must be used with adjectives.

(16)	a=yá!ró	beedo	rac
	1SG=PERF:will	stay:INF	bad
	'I will be bad.'		

(17)	bed	ber
	stay:SUB	good
	'Be good!'	

#### 4.3.5 Nominalization

Some adjectives form nominalizations. Nouns are derived from adjectives by adding a suffix *-ɔ̀* to adjectival stems. Nouns derived from adjectives bear a specific tonal pattern in lexicon. When adjectives do not have morphologically derived nouns, an infinitive form of a verb *beedo* 'to stay' must be used with them (18).

(18)	adjective		noun	
	lac	'wide'	lácɔ̀(L)	'width'
	tek	'hard'	tékɔ̀(L)	'hardness'
	yom	'soft'	yómɔ̀(L)	'softness'
	dídɪŋ	'narrow'	beedo dídɪŋ	'narrowness'
	ɪsedɛŋɛŋ	'shallow'	beedo ɪsedɛŋɛŋ	'shallowness'

Adjectives beginning with the vowel *ɔ̀/o* and with the vowel *ɪ/i* have no derivative nouns morphologically derived from adjectives. The nominal equivalents for the adjectives beginning with the vowel *ɪ/i* consist of the infinitive of the verb *beedo* 'to stay, live' and the adjectives. The fact attests that the adjectives beginning with the vowel *ɪ/i* originate from compounds of the preposition *ɪ* 'at, on, in' and nouns (e.g. *beedo ɪsedɛŋɛŋ* 'shallowness' < \**beedo* 'to stay' *ɪ* 'at' *sedɛŋɛŋ* 'shallowness'). Nouns morphologically derived from adjectival stems are recorded in this

dictionary.

#### 4.3.6 Reduplication

Some adjectives have reduplication forms. The reduplication forms usually express reductive meanings of original adjectives (19, 22). Some reduplication forms are used in more semantically limited domains than original forms.

- (19) ber 'good' > beber 'somehow good'  
cek 'short' > cecek 'somehow short'  
rac 'bad' > rarac 'ugly, somehow bad'  
col 'black, dark' > cocol 'black' (only for color)

Repetition of full forms expresses expanded meanings of original adjectives (21).

- (20) cárn-ní rac  
food-this bad  
'This food is bad.'

- (21) cárn-ní rac rac  
food-this bad bad  
'This food is really bad.'

- (22) cárn-ní rarac  
food-this somehow bad  
'This food is somehow bad.'

#### 4.4 Adverbs

##### 4.4.1 Adverbs

Adverbials may be placed quite freely at any place in sentences (1, 2, 3). The adverb of time *poró* 'yesterday' is located in final, initial and middle position in sentences.

- (1) okélo ɔ=dwogo poró  
Okelo 3S/P=PERF:come back yesterday

- (2) poró okélo ɔ=dwogo  
yesterday Okelo 3S/P=PERF:come back

- (3) ɔkɛ́lɔ̃ ɲoró ɔ=ɔwogo  
 Okelo yesterday 3S/P=PERF:come back  
 'Okelo came back yesterday.'

Prepositional phrases function as adverbs expressing location (4). Proper nouns can function as adverbs of location without any preposition (5).

- (4) dákɔ̃ ɔ=oto tú ɔt  
 woman 3S/P=PERF:go toward house  
 'The woman went toward the house.'

- (5) dákɔ̃ ɔ=oto Iirá  
 Woman 3S/P=PERF:go Lira  
 'The woman went to Lira.'

New information is usually placed after predicates, and old information is located before predicates in Kumam. The sentences (2) and (3) are well-formed when the adverbial expressions denote old information. Topic slot is located in sentence initial position. The sentence (2) is well-formed when the adverbial expression is of old information and a topic.

Adverbials may be placed quite freely at any place, though they cannot intervene between predicates and object noun phrases (8). Moreover they cannot intervene between predicates and benefactive noun phrases (10). For instance, the adverb *ateteni* 'certainly' intervene neither between the predicate *ɔ=kwalɔ̃* 'he stole' and the object *gwen* 'chickens' in (7), nor between the predicate *ɔ=kwalɔ̃* 'he stole' and the benefactive phrase *ni dako* 'for the woman' in (9).

- (6) atéténi ɪcɔ̃ ɔ=kwalɔ̃ gwen  
 certainly man 3S/P=PERF:steal chickens  
 'Certainly, the man stole the chicken.'

- (7) ɪcɔ̃ atéténi ɔ=kwalɔ̃ gwen  
 man certainly 3S/P=PERF:steal chickens  
 'Certainly, the man stole the chicken.'

- (8) \*ɪcɔ̃ ɔ=kwalɔ̃ atéténi gwen  
 man 3S/P=PERF:steal certainly chickens  
 'Certainly, the man stole the chicken.'

(9) ɪ́ɔ́ɔ ɔ=kwalɔ gwen ni dákó atéténi  
 man 3S/P=PERF:steal chickens for woman certainly  
 'Certainly, the man stole the chickens for the woman.'

(10) \*ɪ́ɔ́ɔ ɔ=kwalɔ atéténi ni dákó gwen  
 man 3S/P=PERF:steal certainly for woman chickens  
 'Certainly, the man stole the chickens for the woman.'

#### 4.4.2 Reduplication

Some adverbs can be used in repetition. The repetition of adverbs denotes more limited meanings than original adverbs.

(11) ɲoró 'yesterday' > ɲoro ɲɔra 'just yesterday'  
 díkí 'tomorrow' > díkí adíkí 'just tomorrow'

#### 4.5. Prepositions

Kumam has a small set of prepositions (1). Each of the prepositions can be attached with pronominal possessive suffixes in inalienable possession (2). When the prepositions are attached with pronominal possessive suffixes, some prepositions change their forms to particular forms which are followed by modifiers (2). Vowels of the prepositions and the pronominal possessive suffixes are both subject to vowel harmony. The [+ATR] vowels control vowel harmony in (2).

(1) í 'in, on, at'  
 ɪ 'to, from, with'  
 but 'to'  
 me 'of'  
 pi 'because of'  
 kede 'with'  
 tú 'toward'

(2)

	prí	but
sg. 1	pr-á	but-á
2	pr-í	but-í
3	pr-é	but-é





Some prepositional phrases do not constitute adjuncts with a noun. Since antecedents and relative clauses cannot be intervened by any linguistic forms, prepositional phrases are located as adjuncts behind relative clauses.

(8) *icóo kede mótoka*  
 man with car  
 'man with a car'

(9) *a=né!nó icóo a oodo tye i jé!rá mwá!kácá kede mótoka*  
 1SG=PERF:see man REL PAST be in jail last year with car  
 'I saw the man with a car who was in jail last year.'

#### 4.6. Pronouns

##### 4.6.1 Personal pronouns

Independent, or free-standing, personal pronouns are the followings:

(1) sg. 1 *ájó(L)*  
 2 *ín*<sup>31</sup>  
 3 *én*  
 pl. 1 *wán*  
 2 *wún*  
 3 *gín*

Independent personal pronouns occur basically as subjects and topicalized noun phrases (2, 3)<sup>32</sup>. In other positions personal pronouns appear as clitics on verbs, or suffixes on verbs or prepositions (4, 5, 6). Independent personal pronouns may sometimes occur as subjects in predicate nominal constructions, which are followed by predicate nominals without a copula (7).

(2) *in í=!cámó dek*  
 you 2SG=IMPERF:eat stew  
 'You eat stew.'

<sup>31</sup> All personal pronouns except for 1<sup>st</sup> person singular bear a lexical tonal pattern LH.

<sup>32</sup> Topicalized noun phrases are distinguished from subjects by tone.

- (3) én a=dó!ŋ-é  
 he 1SG=IMPERF:hit with a fist-3SG  
 'Him, I hit with a fist.'
- (4) a=tédó !cám  
 1SG=IMPERF:cook food  
 'I cook food.'
- (5) ɪcúó dó!ŋ-á  
 man 3S/P:IMPERF:hit with a fist-1SG  
 'The man hits me with a fist.'
- (6) dákó !tédó !n:á cáǵ  
 woman 3S/P:IMPERF:cook for:1SG food  
 'The woman cooks food for me.'
- (7) áǵó emúrón  
 I doctor  
 'I am a doctor.'

Independent personal pronouns may occur as objects for transitive verbs, though they do not co-exist with personal pronominal suffixes which are attached to verbs as objects (9). Consequently personal pronominal suffixes that are attached to verbs are not considered to be elements of agreement with the following objects.

- (8) ɪcúó dóǵó !áǵó  
 man 3S/P:IMPERF:hit with a fist me  
 'The man hits me.'
- (9) \*ɪcúó dó!ŋ-á áǵó  
 man 3S/P:IMPERF:hit with a fist-1SG me  
 'The man hits me.'

Independent associative pronouns, free-standing forms, are based on the possessive particle *mé*(L) 'of' conjugated for persons (10).

(10)	sg.	pl.	
	sg. 1	mé!rá	méé!gá 'mine'
	2	mé!rí	méé!gí 'yours(sg.)'
	3	mé!ré	méé!gé 'his, hers, its'
	pl. 1	mér!wá	méég!wá 'ours'
	2	mér!wú	méég!wú 'yours(pl.)' <sup>33</sup>
	3	mér!gí	méég!gí 'theirs'

Independent reflexive pronouns are based on *kén* 'alone' conjugated for persons (11). Other independent reflexive pronouns are based on the preposition *l* 'in, at, on' and the noun *kom* 'body' modified by personal possessive pronouns (12).

(11)	sg. 1	kéná	'myself, me alone'
	2	kéni	'yourself, you(sg.) alone'
	3	kéné	'himself, herself, itself, him alone, her alone, it alone'

	pl. 1	kénwá	'ourselves, us alone'
	2	kénwú	'yourselves, you(pl.) alone' <sup>34</sup>
	3	kéngí	'themselves, them alone'

(12)	sg. 1	íkom-ú	'me alone'
	2	íkom-í	'you(sg.) alone'
	3	íkom-é	'him, her, it alone'
	pl. 1	íkom-wá	'us alone'
	2	íkom-wú	'you(pl.) alone'
	3	íkom-gí	'them alone'

#### 4.6.2 Demonstratives

The deictic affixes express three relations of spatial deixis in (13). The deictic affixes are subject to vowel harmony in (14). The [+ATR] vowels control vowel harmony. The demonstratives for near and far spatial deixis construct contracted forms with the preceding nouns. The alveolar nasal of the demonstratives is assimilated to the preceding consonant in manner and points of articulation, when modified nouns end in a consonant and constructs geminated consonants with the preceding

<sup>33</sup> The glide of the suffix blocks vowel harmony, when the preceding stem ends in a consonant.

<sup>34</sup> The suffixes beginning with a glide do not cause vowel harmony, even if they consist of [+ATR] vowels. Vowels do not turn [ATR] value from [-] to [+] when they are followed by suffixes beginning with a glide.

consonant. One of the geminated consonants is deleted and the preceding vowel of a noun is lengthened in compensation for the loss of the consonant.

The demonstratives for remoteness *-no* and *-go* consist of a [+ATR] vowel, which do not cause vowel harmony. Vowels turn [ATR] value from [-] to [+] only when they are followed by [+ATR] and high vowels.

(13)		sg.		pl.
	this	-ni		-gi
	that	-no		-go
	that, far	-ca		-ka

The nasal consonant of the demonstratives *-ni* 'this' and *-no* 'that' may be assimilated to the preceding consonant (14).

(14)	ot-ni	ɔɔt-i	'this house'
	ot-no	ɔɔt-o	'that house'
	ot-ca		'that, far house'
	ude-gi		'these houses'
	ude-go		'those houses'
	ude-ka		'those, far houses'

Independent, self-standing, demonstrative pronouns are the followings:

(15)		sg		pl
	this	mán(L)		mági(L)
	that	mánó(L)		mágó(L)
	that, far	mácá(L)		máká(L)

The independent, self-standing, demonstrative pronouns bear a floating low toneme in the rightmost position.

#### 4.6.3 Interrogative pronouns

Interrogative pronouns are distinguished in singular and plural.

(16)		sg.	pl.
	'who'	ɲáí	ólú
	'what'	ɲó	ɲóígo
	'which'	méné	mégé

(17) atɲn !méné amé i=mító  
 child which REL 2SG=IMPERF:want  
 'Which child do you want?'

(18) igwógín mégé amé i=mító  
 dogs which REL 2SG=IMPERF:want  
 'Which dogs do you want?'

The interrogative pronouns are located quite freely in sentences (19, 20, 21). However, when the interrogative pronouns bear grammatical relation as an object in sentences, they cannot intervene between subjects and predicates (22).

(19) ɲoro ó!kélo ɔ=wɪlo ɲó  
 yesterday Okelo 3S/P=PERF:buy what

(20) ɲó ɲoro ó!kélo ɔ=wɪlo  
 what yesterday Okelo 3S/P=PERF:buy

(21) ɲoro ɲó okélo ɔ=wɪlo  
 yesterday what Okelo 3S/P=PERF:buy

(22) \*ɲoro ó!kélo ɲó ɔ=wɪlo  
 yesterday Okelo what 3SG=PERF:buy  
 'Yesterday what did Okelo buy?'

#### 4.7 Numerals

The basic cardinal numbers are the followings:

(1)	1	acél(L)	6	kaɲapé
	2	aré	7	kaɲaré
	3	adéek	8	kaɲáíni(L)

4	ɔŋwón	9	kaŋaŋón
5	kaŋ	10	tómón <sup>35</sup>

The numbers 1 through 4 have a prefix *a-*, which is deleted before the stem vowel *ɔ* of the number 4 in vowel sandhi. The prefix seems to be the original attributive particle, because the numerals as modifiers are usually preceded by nouns. Even when they are pronounced in citation, the numerals are accompanied by the prefix.

Number 11 through 19 are formed by combining the numerals 1 through 9 with *tómón* '10' by *iwi-é* 'on top of it' (2).

- (2) 11 *tómón iwi-é á!cél(L)*  
 12 *tómón iwi-é á!ré*

- (3) *agúlú lá!cél*  
 pot one  
 'one pot'

- (4) *món lá!ré*  
 women two  
 'two women'

Numbers 20, 30, 40, 50, 60, 70, 80 and 90 are formed by modifying the noun *ɔt* with numerals 2 through 9 (5). Numbers 100, 200, etc. are formed by modifying *tól* with numerals 1 through 9 (6).

- (5) 20 *ɔt aré*  
 30 *ɔt adéek*  
 40 *ɔt ɔŋwón*  
 50 *ɔt kaŋ*

- (6) 100 *tól á!cél(L)*  
 200 *tól á!ré*

#### 4.8 Word order in nominal phrases

Nouns are followed by modifiers, which are placed in the following order; Nouns, Possessives,

<sup>35</sup> The number ten bears a lexical tonal pattern LLH.

Adjectives, Numerals and Demonstratives. Numerals can be replaced with adjectives (3). Moreover, demonstratives can be placed before adjectives (5).

- (1) del dóg-á    á-ltí    acyéł  
lip-1SG    ATT-big    one  
'my one big lip'
- (2) del dóg    á-ltí    acyéł-nr  
lip    ATT-big    one-this  
'this one big lip'
- (3) del dóg    álcyéł    a-tí-nr  
lip    one    ATT-big-this  
'this one big lip'
- (4) igwogin    aré    a-dóŋo-gi  
dogs    two    ATT-big pl.-these  
'these two big dogs'
- (5) igwogin    aré-gi    a-dóŋo  
dogs    two-these    ATT-big pl.  
'these two big dogs'



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## 6. List of abbreviations

ATT: Attributive particle

ATR: Advanced Tongue Root

BEN: Benefactive

Caus: Causative

FREQ: Frequentative

FREQINT: Frequentative intransitive

GER: Gerund

H: High toneme

(H): Floating high toneme

IMPERF: Imperfective

INF: Infinitive

INT: Intransitive

Intr: Intransitive

L: Low toneme

(L): Floating low toneme

MID: Middle

NEG: Negative

NEUT: Neuter

PAST: Past particle

PERF: Perfective

PL: Plurality

REL: Relative marker

SUB: Subjunctive

sub: subjunctive suffix

TBU: Tone bearing unit

Tr: Transitive

TR: Transitive formative suffix

TRI: Transitive infinitive suffix

1SG: 1<sup>st</sup> person singular

3SG: 3<sup>rd</sup> person singular

3S/P: 3<sup>rd</sup> person singular/plural

3SGPOS: 3<sup>rd</sup> person singular possessive