The Phonology of Endo

A Southern Nilotic Language of Kenya

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2003

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List of Symbols and Abbreviations

[...]	phonetic transcription, e.g. [rɔ:r] ‘to cook’
(...)	optional element, e.g. V(V)
→	is pronounced as, e.g. ku-am → kwăam ‘s/he ate’
<	‘comes from, e.g. Endo sùkûul < Eng. *school*
>	dominance in a hierarchy, e.g. glides > liquids
*	reconstructed form, e.g. Proto-Kalenjin *seemper ‘to weed’
.	syllable division, e.g. már.kwêe.tà ‘Marakwet’
.	connection of words in one gloss, e.g. become.blind
#	boundary symbol, e.g. # _ a
:	long vowel, e.g. [ɔ:]
a̲	advanced tongue root
a	retracted tongue root
á	high tone
à	low tone
â	falling tone (high low)
ā	mid tone
ă	rising tone
a̋	extra high tone
V	vowel
H	high tone
L	low tone
F	falling tone
ATR	advanced tongue root

	Labial	*Alveolar*	*Post-alveolar*	*Palatal*	*Velar*
Voiceless plosive	p	t		c	k
Voiced plosive	b	d		ɟ	g
Nasal	m	n		ɲ	ŋ
Trill		r			
Fricative		s	ʃ		x
Approximant	ʋ			j	
Lateral approximant		l			

Table 1: IPA consonant symbols

	Front		*Central*		*Back*	
Close	i					u
		ɪ			ʊ	
Close-mid	e					o
			ə			
Open-mid	ɛ					ɔ
Open	a				ɑ	ɒ

Table 2: IPA vowel symbols

1P	first person plural
1S	first person singular
2	class 2 prefix
2P	second person plural
2S	second person singular
3D	third person dependent
3I	impersonal
AMB	ambulative
ASS	associative
CN	condition
CO	coordination
DAT	dative
DEM	demonstrative
DEN	denominal
DF	definiteness
DP	distant past
DP!	emphatic distant past
ESS	essive
FEM	feminine
IMP	imperative
INC	inceptive
INS	instrumental
IPF	imperfective
ITV	itive
LOC	locative
MASC	masculine
MOT	motion
NG	negation
NG!	emphatic negation
NOM	nominalizer
O1P	first person plural object
O1S	first person singular object
O2P	second person plural object
O2S	second person singular object
PH	phase
PL	plural
PU	purpose
REL	relativizer
RP	recent past
RP!	emphatic recent past
S1P	first person plural subject
S1S	first person singular subject
S2P	second person plural subject
S2S	second person singular subject
SG	singular
SOC	sociative
STAT	stative
TH	thematic
VNT	ventive

1 Introduction

This is a description of the phonology of the Endo language, a southern Nilotic (Kalenjin) language spoken in Kenya by about 50 000 people. It is first of all written for linguists, but hopefully non-linguists interested in the Endo language might benefit from it too. However, a certain basic level of familiarity with phonological notions is assumed.

The Endo language is spoken in the north-eastern part of the Marakwet District of the Rift Valley Province in Kenya, slightly north-east of 1° N latitude and 35 E° longitude, in the Kerio Valley and on the Elgeyo Escarpment. The area ranges roughly from Liter in the north to Arror in the south and from the Kerio river in the east to the top of the escarpment and the Cherangany Hills in the west, with altitudes of over 3000 meters (see Figure 1). There is a huge difference in climate and vegetation between the highlands and the valley. The valley is semi-arid, but there are several rivers coming down from the escarpment that provide water for irrigation, which makes the area very lush and fertile. The highlands are temperate and wet.

The Endos are pastoralists and subsistence farmers. They keep mostly goats and grow a variety of crops and fruits, of which only mangoes are sold for cash. Although the power lines from a power plant in the north to the town of Eldoret pass through the area, there is no electricity available in the valley. There are no tarmac roads in the area; one main dirt road leads through the area from north to south, with two very rough roads branching off, one climbing the escarpment to the district center of Kapsowar, and one leading across Kerio river to Baringo district. It is only since 2001 that there is daily public transport to the valley.

In the south the Endos border with the Keiyos and in the west with another Marakwet group, the Talai or Sambirir. In the north and east the neighbours of the Endos are the Pokots. In spite of intermarriage and market contacts, the Endos and Pokots have never been on friendly terms. There is a long tradition of cattle rustling that has led to more bloodshed in recent years due to the large-scale ownership of firearms.

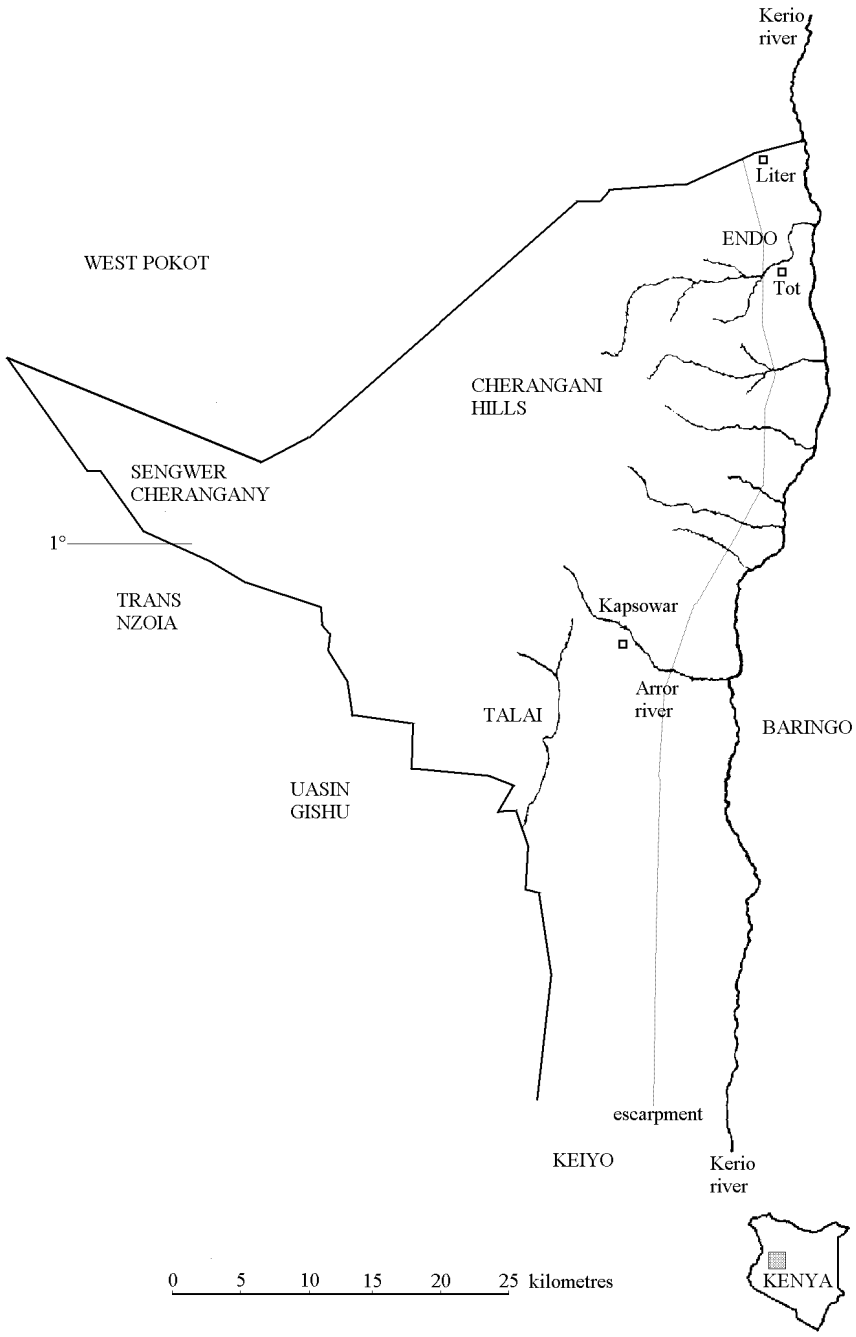

Figure 1: Marakwet district

What is called Endo here corresponds to the dialect of northern Marakwet, 5n in Rottland (1982) or Endo-Marakwet in other sources (Van Otterloo 1979, Grimes 1997). Originally there were several groups in the area, among which the Endos in the north and the Markwetas in the south of the valley, both of which are mentioned in early

reports.[1] The name Marakwet (a corruption of Markweta) is now used for the whole district and the word Endo for a location (a small administrative unit under a chief) in the valley. This means that neither term fits well. The term Marakwet is too broad: it covers an area with more variation than any other Kalenjin area (Rottland 1983), and it includes the Talai of the highlands around Kapsowar and the Sengwer Cherangany in the western corner of the district. The term Endo is strictly speaking too narrow for my purposes, because this phonological description encompasses more speakers than only those in the Endo location. Nevertheless, the term Endo is chosen because the language of the people in Endo location probably reflects most purely the features that are mentioned below and also because the short name Endo is easier to use than more complex labels like Endo-Marakwet or Northern Marakwet.

Genetically, Endo is one of the Kalenjin languages that are spoken by approximately two million people, mainly in Kenya but also in Uganda and Tanzania. The Kalenjin languages belong to the Southern Nilotic languages, together with Omotik and Datoga (Köhler 1955, Greenberg 1963, Rottland 1982).[2] Within the Kalenjin group there is some uncertainty about the precise classification of Endo. I follow Rottland (1982) in classifying it in the Nandi-Markweta branch together with Nandi, Kipsikiis, Tugen, and Keiyo. However, as Rottland (1982,1983) notes, Endo is special because it also shares many features with Pokot, a separate branch of Kalenjin.

Like the other Kalenjin languages, Endo is quite consistently head-initial. The unmarked word order of the sentence is VSO, the few adpositions that exist are prepositional, with few exceptions the noun precedes genitive complements, numerals and adjectives and the adjective its degree modifiers.

(1) a. kiyaat Cheeliima kurkee ‘Chelimo opened the door’
DP-open Chelimo door-TH-DF

[1] The earliest references to the Ndo/Endo and the Maragwetta/Maragweta were found by Moore (1986:10) in ethnographic works published in 1910 and 1911.

[2] This classification has superseded the older distinction of Nilotic (West Nilotic) and Paranilotic/Nilo-Hamitic (South and East Nilotic) languages (e.g. Tucker and Bryan 1962).

b. nkaa tapoot ‘in the attic’
in attic

c. laakoopa sukuul chaa chaang ‘many children of school’
child-PL-DF-ASS school REL many

d. karaam misin ‘very good’
good very

Morphologically, the Kalenjin languages are predominantly agglutinating, with both prefixation and suffixation, some non-concatenative processes and hardly any compounding (see Chapter 10 for more details about Endo). As for lexical structure, Endo has borrowed extensively from Swahili (mainly in the domain of agriculture and religion, but also numerals) and, more recently, from English (technological terms). There are also some possible loans from Cushitic.

The Endo language can be singled out from among the Kalenjin languages because of some unique phonological features (see also Rottland 1983). First, Endo is the only Kalenjin language that has the alveolar trill *r* where Pokot has the velar fricative *gh* ([x] in the International Phonetic Alphabet) and the other Kalenjin languages the approximant *y*, as in the word for ‘calf’:

(2) Endo: môor, Pokot: moogh, other Kalenjin languages: mooy

Second, Endo is the only language having the sequence *pk* instead of *pw* in the rest of Kalenjin, as in the word for ‘to think’:

(3) Endo: pkâat, other Kalenjin languages: pwaat

Third, in many verbs and adjectives Endo has changed the final *ch* of the other languages into a *k* and a final *ny* to *ng* (a process that is also found in Pokot)

(4) Endo (and Pokot): nwâak ‘short’ and réeng ‘to despise’, other Kalenjin languages: nwaach and reeny

The first linguistic work on Endo is probably the short vocabulary of Endo published in 1913 by Mervyn W.H. Beech. No linguistic work was done specifically on Endo until the 1980s when Ken and Judith Greenlee studied the language (J. Greenlee 1987, K. Greenlee 1990). This work was continued in the 1990s by Philemon Kisang', a native speaker, in cooperation with Ivan Lowe, Fraser Jackson, and students of the British SIL school (Kisaang' and Jackson 1994, Longley et al. 1996), and by Alice Ottow. Iver Larsen (1991) compared dissimilation of liquids in Sabaot dialects and Endo. Anthropological research among the Endos was done by Henriette Moore (Moore 1986) and information about the Endo area and culture can also be found in Kipkorir and Welbourn (1973) and Kipkorir, Soper, and Ssennyonga (1983), which also contains a study of Marakwet dialects (Rottland 1983). A few Kalenjin-wide studies need to be mentioned because they provided relevant information about Endo: the survey that Roger and Karen van Otterloo did in the Kalenjin area (Van Otterloo 1979), the comparative work of Franz Rottland on Southern Nilotic (1982), and the comparative tonology of Chet Creider (1981,1982). *Bible Translation and Literacy* (BTL) has developed an orthography for Endo that is close to the one it developed for Sabaot and some literature has now been published using that orthography.

The data in this paper were collected by me between 1998 and 2002, when I worked with SIL in a Bible translation project for the Endo language, in cooperation with William Kemboi, Meshack Kipkemboi, Philemon Kisang' and Philip Sang' and drawn from material (texts and word lists) collected by Ken and Judith Greenlee, Ivan Lowe and Alice Ottow. I gratefully acknowledge these people, as well as Constance Kutsch-Lojenga, Iver Larsen, Keith Snider, Joel Sutter, Mieke Trommelen and Wim Zonneveld for comments, discussion or assistance. Special thanks are due to the *Evangelische Gemeente Ommoord* in Rotterdam, The Netherlands, for having supported our work through SIL with the Endo people.

2 Consonant inventory

2.1 Consonant phonemes

Endo has a rather sparse inventory of consonant phonemes:

	Labial	*Alveolar*	*Palatal*	*Velar*
Plosive	p	t	ch	k
Nasal	m	n	ny	ng
Trill		r		
Fricative		s		
Approximant			y	w
Lateral approximant		l		

Table 3: Consonant phonemes

The nature of the phonemes should be clear from the table. Some of the symbols used here and in the rest of the book differ from the symbols of the International Phonetic Alphabet (IPA): *ch* is used for [c], *ny* for [ɲ], *ng* for [ŋ], and *y* for [j]. The consonant symbols in Table 3 are identical to the symbols used in the orthography of Endo, except that we use *ng* here instead of *ng'*.[3] See Appendix A (Chapter 9) for (near) minimal pairs confirming the phonemic status of the consonants in Table 3.

Voicing in Endo is not distinctive. Only those phonemes are voiced for which voicing is the unmarked option universally: the sonorants (vowels, nasals, liquids, and approximants), but not the other consonants (the obstruents). The plosives can become voiced in contexts that will be described in the next section.

The consonant inventory of Endo has no surprising typological properties (given the generalizations in Maddieson 1984). If a language has only one series of stops then these stops are voiceless, if there is only one fricative it is *s*. Also the four different places of articulation for stops and nasals are very common.

[3] This use of the apostrophe is taken over from Swahili where it distinguishes *ng'* = [ŋ] from *ng* = [ŋg]. The spelling of Endo does not need an apostrophe for [ŋ] since the sound [ŋg] is represented by *nk*.

2.2 Consonant realizations

The *t* is often realized as a dental plosive. The *ch* may be pronounced as an affricate [tʃ]. The *r* can be devoiced at the end of words. It can be pronounced as a trill, but also as a tap. At the beginning of words the plosives can be pronounced with aspiration; at the end of words they can be unreleased. All plosives are clearly voiced after nasals:[4]

(5) a. een-pa → èem[b]à 'river of'
river-ASS

b. chumpa → chúm[b]à 'Europeans'

c. paan-ta → páan[d]á 'the journey'
journey-DF

d. kuntul → kún[d]ùl 'knot'

e. pootan-chi → pòotân[ɟ]í 'to tremble for'[5]
tremble-DAT

f. nchoo → n[ɟ]ôo 'scream!'
scream-IMP

g. cham keey → chám[g]êey 'hello'
love self

h. nkok → n[g]òk 'chicken'

Voicing of *p* and *k* can often be heard between vowels:[6]

[4] Apart from Chapter 8 tones are not indicated on the lexical phonological forms of morphemes. Also, the effect of postlexical tonal rules on the realization of the high, falling and low tonemes is not indicated. See Chapter 8 for more details on tone.

[5] Unless indicated otherwise, verbs are given in their infinitival form, although the *kee-*prefix that is characteristic of this form has been omitted.

[6] *p* and *k* are *grave* stops, *t* and *ch* *acute* (cf. Creider 1982:26).

(6) a. kee-pe-V → kèe[b]êe ‘let’s go’

1P-go-IMP

b. roopiyaˆ → ròo[b]íyâ ‘money’

c. nuruk-ey → núrù[g]éy ‘s/he is dozing’[7]

doze-IPF

d. tokol → tó[g]ôl ‘all’

After liquids and glides the voicing of plosives is not so obvious as in the other contexts. Another environment where the *k* can be pronounced with voicing is between a vowel and *w*:

(7) kaaraak-waˆ → káarâa[g]wà ‘fish (sg.)’

fish-SG

As voicing is not a distinctive feature in Endo, it is not reflected in the orthography. Words with plosives, like those given as examples in this section, will be represented with the underlying voiceless stops:

(8) èempà, chúmpà, páantá, kúntùl, pòotânchí, nchôo, chám kêey, nkòk, kèepêe, ròopíyâ, núrùkéy, tókôl, káarâakwà

Hence, what is given to the right of the arrow → is not the final pronunciation of a string of morphemes, but a morphophonemic representation that does not indicate the effect of voicing and other postlexical processes, unless indicated by the square brackets [and].

[7] Third-person verbs make no gender and number distinctions. I will use ‘s/he’ as subject in the free translation, but ‘it’ or ‘they’ are also appropriate subjects.

3 Vowel inventory

3.1 Vowel phonemes

In essence, the vowel system of Endo is based on a combination of the five basic vowel qualities *a*, *e*, *i*, *o*, *u* with a distinction of *tongue root position* (retracted versus advanced tongue root) and a distinction of *length* (short versus long). In theory this gives a total of 5×2×2 different vowel phonemes, for which the following notation will be used:

Retracted tongue root					*Advanced tongue root*				
I				u	i				u
	e		o			e		o	
		a					a		

Table 4: Short vowels

Retracted tongue root					*Advanced tongue root*				
ii				uu	ii				uu
	ee		oo			ee		oo	
		aa					aa		

Table 5: Long vowels

The approximate IPA transcription of these phonemes is as follows:

Retracted tongue root					*Advanced tongue root*				
ɪ(:)				ʊ(:)	i(:)				u(:)
	ɛ(:)		ɔ(:)			e(:)		o(:)	
		a(:)					ɒ/ɑ(:)		

Table 6: Vowels in IPA notation

However, as we will see in section 3.4.2, in certain contexts the number of vowels is strongly reduced.

We will now look at the three dimensions of the vowel system of Endo: tongue root position, length and quality.

3.2 Tongue root position

In the transcription used in this book, advanced tongue root (+ATR) vowels are distinguished by means of underlining. This leaves room for tone marks above the vowel letters and it brings out more clearly than other notations that +ATR vowels have something that vowels with a retracted tongue root (–ATR) are lacking, or, in other words, that +ATR vowels are marked and –ATR vowels are unmarked, as we will see in Chapter 7. Hence the features +ATR (plus, presence of a property) and –ATR (minus, absence of a property). It also corresponds to the orthography of Endo, in which advanced tongue root is indicated by a macron over the vowel symbol. Notice that some authors have used underlining in the opposite way, for –ATR vowels, for typographical reasons (Rottland 1980 and Creider 1982).

Various terms and descriptions that are used for the two classes of vowels are given in Table 7 (Tucker 1964, Rottland 1980, Clements 2000):

–ATR	*+ATR*
open	close
lax	tense
light	heavy
‘hard’	‘hollow’
‘creaky’	‘breathy’
‘dull’	‘bright’

Table 7: Two classes of vowels

The two sets of vowels in Kalenjin have first been identified as involving an opposition of tongue root position in Hall et al. (1974). A detailed phonetic study of the distinction can be found in Local and Lodge (n.d.). There is no complete agreement in the literature about the proper phonetic transcription of the four low vowels of the vowel system of the Kalenjin languages:

	–ATR	*+ATR*
Tucker (1964)	a	ao[8], ɑ
Hall et al. (1974)	a	ɒ
Rottland (1982)	ɑ	a
Larsen (1991)	a	ɒ
Local & Lodge (n.d.)	a	ɑ

Table 8: Various transcriptions of the low vowels

The –ATR version of the short low vowel (written as *a* in this paper) goes towards cardinal vowel 4 [a], especially when it is long, but is closer to cardinal vowel 5 [ɑ] when short. The +ATR version of the short low vowel (written as *a̲*) sometimes sounds more like [ɑ] and sometimes more like cardinal vowel 6 [ɔ], at least for those speakers who distinguish it from *e̲* and *o̲*. Others pronounce *a̲*, *e̲* and *o̲* all as a schwa-like sound (section 3.4.3). The *long* +ATR vowel (*aa̲*) always sounds like [ɔː], which makes it indistinguishable from the long –ATR mid vowel (*oo* in Table 5).

If *aa̲* and *oo* both sound as [ɔː], and *a̲* and *o* are often difficult to distinguish, then how can we tell them apart? The phonological system of vowel harmony often offers clues to their identity. A +ATR vowel causes all the other vowels in the word to become +ATR. We know that the verb meaning 'to become blind' is *kór* with a –ATR *o* (and not a +ATR *o̲*) because the –ATR vowel *a* of the prefix is not affected (9a). On

[8] The symbol that Tucker uses for +ATR *a* is a non-IPA ligature of *a* and *o* that I did not manage to reproduce here.

the other hand, the verb meaning ‘to live, get well’ is *sáp* and not *sóp*, because it *does* affect the vowel of the prefix (9b):

(9) a. a-kor → àkôr ‘I became blind’
1S-become.blind

b. ka-sap → kàsáp ‘s/he lived, became well’
RP-live

Furthermore, as (10a) and (10b) show, a +ATR vowel in a suffix changes the –ATR *o* vowel of *kor* into its +ATR counterpart *ọ*, while the *a* vowel of *sáp* stays the same (because it is already +ATR):

(10) a. kor-ey → kórèy ‘becoming blind’
become.blind-IPF

b. ku-sap-ye → kùsápyâ ‘they live, become well’
3D-live-SOC

The same reasoning is even more important for distinguishing the long vowels *oo* and *aa* that are both pronounced as [ɔ:] by all Endo speakers. Also here there are phonological reasons for keeping them distinct and not treat them as one and the same phoneme. The verb stems for ‘to cook’ and ‘to laugh’ sound the same in Endo: [rɔ:r] in IPA transcription. However, we see two important differences when the –ATR prefixes *ak-* ‘and’ and *ku-* ‘third person’ are added. The verb ‘to laugh’ makes the vowels of these prefixes +ATR, but the verb ‘to cook’ does not. This is the clue for analyzing ‘to cook’ as *róor*, with a –ATR vowel and ‘to laugh’ as *ráar*, with a +ATR vowel:

(11) a. ak-ku-i-roor → àkùuróor ‘and to cook’
CO-3D-2-cook

b. ak-ku-raar → àkúrâar ‘and to laugh’
CO-3D-laugh

Then we can also understand the following pattern:

(12) a. ku-i-roor-ey → kùuròoréy ‘s/he is cooking’
3D-2-cook-IPF

b. ku-raar-ey → kùràaréy ‘s/he is laughing’
3D-laugh-IPF

The +ATR suffix *-ey* changes the −ATR vowel *oo* of ‘to cook’ into its +ATR counterpart *oo*, but the vowel of ‘to laugh’ does not change because it is are already +ATR.

In most cases, patterns like these can tell us the tongue root position of the vowels of a word, even in the absence of (clear) phonetic distinctions. Table 20 in the Appendix gives minimal pairs illustrating the contrastive value of tongue root position.

3.3 Vowel length

There are several indications that in the phonological system of Endo long vowels should be considered as consisting of two units and short vowels of one unit (or mora).[9] First, two short vowels coming together can form a long vowel:

(13) a. weeri-i → wêeríi ‘the son’
son-DF

b. kaa-ku-ir-u-in → kâakíirùun ‘s/he has done (it) for you’
RP-3D-do-VNT-O2S

c. ma-a-nket → mâankét ‘I don’t know’
NG-1S-know

d. ki-i-cham → kíichàm ‘you have accepted’
DP-2S-accept

In a sense, we have the equation: long vowel = short vowel + short vowel.

[9] Instead of distinguishing them by means of a binary feature [±long] as in Creider (1982), for instance.

The second indication that long vowels are two units comes from the phenomenon of *compensatory lengthening*. Under certain conditions a non-low vowel *i*, *u*, *e*, or *o* can turn into a glide *y* or *w* (see section 6.2):

(14) a. ki-a-meer → kyáamêer 'I am dying'
DP-1S-die

b. ku-am → kwăam 's/he eats'
3D-eat

The vowel 'slot' that is left by this vowel is taken over by the vowel that follows it, which lengthens as a result of this.

Thirdly, there is an important connection between vowel length and falling tones. Singular monosyllabic nouns can be high, low, or falling in tone:

	High tone	*Low tone*	*Falling tone*
Short vowel	kír	kèny	pâr
	'thing'	'year'	'grain'
Long vowel	póor	èer	rêel
	'body'	'hand'	'jackal'

Table 9: Tones and vowel length in nouns

However, there is only a handful of nouns like *pâr*, that have a falling tone on a short vowel. Falling tones occur almost exclusively on long vowels. Also, in some parts of the verbal paradigm there is a tone contrast between short and long vowels of class 1 verbs:

(15) a. kítêek 's/he built'
DP-build

b. kísír 's/he wrote'
DP-write

Other verbs that go like *têek* are *yêeng* 'to skin', *chôor* 'to steal', and *kêel* 'to kill', while *chám* 'to love', *kár* 'to close', and *lár* 'to burn' go like *sír*. This correlation between falling tones and long vowels is mysterious if we treat long vowels as single segments. However, the connection is very natural if we assume that both falling tones and long vowels consists of two units: a falling tone is a HighLow sequence and a long vowel is a VV sequence. There is probably a tone rule that changes high tones on long vowels into falling tones (under certain conditions) (Chapter 8).

Finally, for both nouns and verbs there are morphological processes that involve lengthening of the vowel of the last syllable of the word. For verbs this process is used to derive causatives from adjectives or verbs (see 10.2.11), and for nouns it is used (together with other changes) to derive plurals (see 10.1.7.3):

(16)	a.	mànák 'to conceive	mànáak 'to impregnate'
		ányîny 'sweet'	ànyíiny 'to sweeten'
		kúskûs 'light'	kùskúus 'to make light'
	b.	pánàn 'orphan'	pànáan 'orphans'
		írìn 'root'	ìríin 'roots'
		mósòk 'widow'	mòsóok 'widows'

If we separate the length of a vowel from its quality, then we can interpret these processes as involving suffixation. What is added is a suffix that does not have segmental content, but only a length unit (and possibly tone and a +ATR feature in the case of the plural suffix, see section 7.2).

On the other hand, there are no indications that in syllable structure in Endo long vowels have a different distribution from short vowels. Short and long vowels are followed by the same consonants (as the minimal pairs in Table 21 in the Appendix show). What this indicates is that consonants in Endo are not associated with a timing unit, only vowels are.[10]

[10] But if word-initial nasals before plosives (like in *mpo*) are syllabic, then they must be associated with a timing unit (see section 4.1.1.1).

3.4 Vowel quality

Endo has a vowel system of five vowels that is organized along the two dimensions of height and place of articulation:

	Front		*Back*
High	i		u
Mid	e		o
Low		a	

Table 10: Vowel space

These five basic vowel qualities combine with the tongue root and length distinctions to yield the full system of vowels. However, in comparison to most other Kalenjin languages, Endo has one gap in the system and a tendency towards reducing the system for the short vowels in certain contexts, in ways that are very similar to Pokot (Tucker 1964). Here I will discuss three aspects of these reductions.

3.4.1 The status of the short –ATR *e*

The short –ATR *e* is not heard in Endo. What is *e* in many other Kalenjin dialects (e.g. in *ner* 'to become fat, grow up') is pronounced as *a* in Endo (*nár*). If a process shortens the *ee*, the result is an *a*, as in the following example:

(17) kárkêey 'like' - kàrkàyíit 'to liken'

Before the inceptive suffix *-iit*, that derives verbs from adjectives (section 10.2.10), long vowels of polysyllabic words are shortened (section 6.5.1).

Some morphophonemic alternations still reflect the original *e* of older stages of the language. As we saw above, one way of forming plurals involves lengthening of the vowel in the last syllable of the noun. Normally the long version of *a* in such a plural is *aa* (18a), but sometimes it is *ee* (18b), and sometimes there is variation (18c):

(18) a. pátâr - pàtáar ‘back(s)’ (patay in other dialects)

b. ngályâp - ngàlyéep ‘tongue(s) (ngelyep in other dialects)

c. tákât - tàkáat, tàkéet ‘chest(s) (teket in other dialects)

We can see the same thing in some other processes:

(19) a. kwány ‘to shine’ - kwànykwéeny ‘to flash (repeatedly)’
(kweny in other dialects)

b. sàrát ‘to become scattered’ - sàréet ‘to cause to become scattered’
(seret in other dialects)

A few irregular verbs show alternations between a short vowel *a* and a long vowel *ee*:

(20) pa - peet ‘go (pl.), ma - meer ‘die’, ra - ree ‘drink’

For vowel harmony, however, every *a* corresponds to a +ATR *a*, irrespective of its historical origin. The verb *nár* ‘to grow’ in the following examples derives from Proto-Kalenjin **ner* and *tápêes* ‘wide’ from **tepees*:

(21) a. ki-nar-ey → kínârèy ‘s/he was growing up’
DP-grow-IPF

b. tapees-een → tápèeséen ‘wide (pl.)’
wide-PL

However, this historical *e* is not reflected in the +ATR form as a +ATR *e*, but as *a* (Rottland 1980).

What can we conclude from this about the status of short –ATR *e*? If this *e* is still part of the phoneme system of Endo, but occurs only in underlying forms, then we need to assume a rule that changes *e* to *a*. Morphological processes (like the pluralization process in (18)) apply *before* this rule, vowel harmony applies *after* it has changed *e*

into *a*.[11] On the other hand, it could also be that the *e* has completely disappeared from Endo and that *a-ee* alternations do not reflect a synchronic relation, but only a diachronic one. In this case, the system of short –ATR vowels is reduced to a four-vowel system:

	Front	*Back*
High	i	u
Low	a	o

Table 11: Short –ATR vowels

3.4.2 The reduction of –ATR short vowels

It seems that in some contexts the five-vowel system reduces even to a three-vowel system:

	Front	*Back*
High	i	u
Low	a	

Table 12: Reduced –ATR short vowel space

We can see this reduction at work in the inventory of prefixes and suffixes. The short-voweled prefixes only have *i*, *u*, or *a* (10.2):[12]

(22) a: ka- 'recent past', a- 'first person singular' and 'second person plural', ma- 'negation'
i: ki- 'distant past', i- 'second person singular'

[11] The underlying form for 'chest' would then vary among speakers in this view: for some it is *tákêt*, for others *tákât*.

[12] Another sense is which prefixes are reduced is that they are always –ATR.

u: ku- ‘dependent third person’

The short *o* that is found in prefixes of other Kalenjin languages has become *a* in Endo: the medial past *ko-* is conflated with the recent past *ka-* and the second person plural prefix *o-* has become *a-*.

The so-called primary or thematic suffixes in nouns (see Tucker and Bryan 1962,1964,1965, Rottland 1982, Creider 1982 and Larsen 1986 for grammatical details and section 10.1.6) take their vowels from a strongly reduced set; only short −ATR vowels from the set *a*, *i*, *u* are possible:[13]

(23) a: -a -ta -na -ka -ya -wa
i: -i -ti
u: -u

Even in some roots we can see the reduction in comparison to other Kalenjin languages. The verb *nyá* ‘to go ahead, come first’ in Endo is *nyo* in other Kalenjin languages. Another interesting confirmation of this is what happens with the word for wheat: borrowed from Swahili, *ngano*, it is rendered *nkâanù* in Endo for some speakers. Here the final *o* has become an *u* as a result of the reduction tendency.

3.4.3 The reduction of +ATR short vowels

Some speakers of Endo make no distinction anymore in the pronunciation of the non-high vowels *a*, *e* and *o*. Their set of short +ATR vowels is:

	Front	*Back*
High	i	u
Low	a	

Table 13: Reduced +ATR short vowel space

where *a̲* sounds like a somewhat open schwa [ə].[14] As a result the word for 'water' *pe̲r* and for 'killers' *pa̲r* sound the same, as well as *wo̲l* 'place' and *wa̲l* 'translators' and *pe̲l* 'to defeat' and *pa̲l* 'to dig'. Other speakers still make the distinctions.

Underlyingly, the quality of the non-high vowels is probably preserved. One indication of this is that many speakers pronounce the vowel of *le̲* 'to tell' word-finally in the same way as *a̲* and *o̲* but when the dative suffix *-chi̲* follows (which lengthens the preceding vowel), it shows its underlying quality again:

(24) a. *le̲* → l[è] 'to tell'

b. *le̲-chi̲* → l[é:]ch*i̲* 'to tell to'

tell-DAT

3.4.4 The reduction of the high vowels *i* and *u*

In some contexts the distinction between *i* and *u* seems to be neutralized, both for retracted and advanced tongue root. It is impossible to make out whether the word for 'bow' should be written as *kírâang* or *kúrâang* and whether the word for 'dog' is *sí̲kò̲y* or *sú̲kò̲y*. What we hear is a centralized vowel [ɨ].[15] In other cases native speakers can still make the distinction, like *sír* 'to write' versus *súr* 'to bite' or *rú̲k* 'to tie a knot' versus *rí̲k* 'to mate'. This suggests that neutralization of the contrast is possible when the vowel does not have to carry the full functional load of distinguishing the word from similar words, i.e. when there are other vowels in the root.

That this reduction only touches the surface pronunciation can be seen in the behaviour of the third person prefix:

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[13] In *chèepyóosò* 'woman', the primary suffix is *o* because of assimilation to the *oo* of the root (see section 6.6). The generalization here concerns the underlying form of these suffixes.

[14] Tucker (1964) uses the symbol [ä] for the corresponding sound in Pokot.

[15] A sound that Tucker (1964) symbolizes as [ə] for –ATR and [ɨ] for +ATR.

(25) a. ku-nyooru → k[ì]nyòorù ‘s/he gets’

3D-get

b. ku-i-nket → kùunkét ‘s/he knows’

3D-2-know

c. ku-ap → kwăap ‘s/he brings’

3D-bring

The vowel of this prefix betrays its underlying nature before certain vowels. Before the *i* of the class 2 verb *nkét* it is lengthened to *uu* and before *a* or *a* it is turned into the glide *w* (section 10.2.1). This shows that this vowel is really the back vowel *u* that is realized as a central vowel [ɨ].

4 Syllable structure

4.1 The core syllable

The basic syllable structure of Endo is given in (26):

(26) *Syllable schema*
(C)(G) V(V) (C)
where C is a consonant, G a glide, and V a vowel

We will first discuss the onset of the syllable in more detail (the part before the vowel) and then the coda (the part after the vowel).

The initial nasal that occurs in words like *nkâa* 'and' is not represented in the syllable structure, because there are reasons to believe that it is not part of the onset of the syllable. See section 4.2 for this.

4.1.1 The onset

4.1.1.1 Complex onsets

At the beginning of the syllable Endo can have a consonant-glide sequence:

(27) a. mwâar 'oil', kwéen 'middle', syál 'to quarrel', ryâang 'to stand'
b. Már.kwêetà 'idem', tìr.syáan 'to sneeze', kìpsén.kwèt 'heaven'

There are three reasons for treating such complex sounds as sequences and not as modified units (i.e. as palatalized or labialized segments). The first reason is that such sequences only occur as the onset of a syllable, but never as the coda, which can only consist of one segment in Endo. Roots like the following are not found:[16]

(28) raamw, neekw, lasy, ngaary

[16] The *sy* combination is a sequence, even though it is often realized as a single segment /ʃ/.

Notice that the sounds *ch*, *ny*, and *ng* (which might be sequences in other languages) are units in Endo, since they are found both as onsets and codas, sometimes even in the same root:

(29) chîich 'person', nyâany 'to be out of control', ngûung 'to vomit'

The second reason is that the two glides involved in these complex sounds are part of the consonant inventory of the language anyway and available for the formation of sequences without further 'costs'. It would have been different if *w* or *y* only occurred in combinations with other consonants, but not independently. Thirdly, assuming palatalized and labialized consonants as basic phonemes of the language would extend the inventory with many more sounds. The analysis of these ambiguous sounds as sequences seems therefore well motivated.

In a consonant-glide cluster, there are no major restrictions on the occurrence of *w*, but *y*, on the other hand, only follows alveolar consonants:

	w	y
p	pwâat 'to remember'	-
t	twâal 'bells'	tyâm 'to try'
ch	chwán 'to chop off'	(indistinguishable from *ch*)
k	kwáang 'to cook'	(only derived)
s	swát 'to eat too much'	syáar 'to remove'
l	(only derived)	lyáak 'to smoothen'
r	rwáak 'to string beads'	ryál 'to glitter'
m	mwâar 'oil'	(derived or becomes *mny*)
n	nwâak 'short'	(indistinguishable from *ny*)
ny	(becomes ngw)	(indistinguishable from *ny*)
ng	ngwáal 'to limp'	-
y	(only derived)	(only derived)
w	-	-

Table 14: Consonant-glide onsets

Initial *pw* is a rare dialectal variant in Endo; the *w* is usually assimilated to *k* (most speakers saying *pkâat* instead of *pwâat*).[17] The onsets *lw* and *ky* and *yw* and *yy* are only found in derived contexts:

(30) a. lu-ey → lwéey 'be drinking milk'
drink-IPF

b. ki-a-nyaril → kyáanyárìl 'I have suffered'[18]
DP-1S-suffer

c. ku-yu-ee-ey → kùywéey 's/he is warming her/himself with'
3D-warm-INS-IPF

d. yi-ey → yyéey 'producing'
bear-IPF

Here the complex onsets derive from glide formation, one of the processes that occurs when two vowels end up next to each other (see section 6.2).

As we will see later, *y* always disappears after the palatals *ch* and *ny*. The initial sequence *my* that is found in other Kalenjin languages (e.g. *myaan* 'to be sick') never occurs in Endo because of an assimilation rule that changes the *y* into *ny* after *m*, leading to the only possible initial NN cluster: *mnyáan*.[19] This rule will be described more fully in section 5.1.1.2. However, a *my* onset can appear when an *i* becomes a *y* before vowels:

(31) a-mii-aa → ámyàa 'I am'
1S-be-S1S

[17] The *p* of *pkáat* becomes a coda when a vowel precedes, e.g. *kèep.káat* 'to think'.

[18] In the northern variant of EM, this initial *ky* tends to be pronounced as *ch*, as in some other Kalenjin dialects. See section 5.6.

[19] A word like *myèeyín* 'grace' is probably a loanword from the Kalenjin (Nandi-Kipsigis) Bible.

The cluster *nyw* also never surfaces because of an assimilation rule. Section 5.1.2.1 shows that the nasal assimilates in place to the following glide, resulting in *ngw*.

Evidence for the restricted onset clustering that we discussed in this section comes from the way English borrowings are adapted:

(32) sùkûul (< school), kìlâas (< glass), pùrâas (< brush), tìrâam (< drum)

A *u* or *i* is inserted between consonants in the onset to avoid the kind of onsets that are possible in English but not in Endo.[20]

4.1.1.2 Absent and empty onsets

There are also syllables with no onset at all, but here we have grounds to make a distinction between an *absent* onset and an *empty* onset. The verb *ám* 'to eat' has no onset, the verb *ír* 'to make' has an empty onset. How do we know? Consider how the prefixes *ku-* (third person), *ki-* (distant past), and *ka-* (recent past) behave before *ám* 'to eat' and *ír* 'to do':

(33) a. ku-am → kwăam 's/he eats'
3D-eat

b. ki-am → kyáam 's/he ate'
DP-eat

c. ka-am → kăam 's/he ate'
RP-eat

(34) a. ku-ir → kùhír 's/he does'
3D-do

b. ki-ir → kíhír 's/he did'
DP-do

[20] The default epenthetical vowel is *i* (see section 5.5) but it is sometimes 'coloured' (labialized) as *u* under the influence of a *u*, *p*, or *w* (all of them labial sounds) nearby. However, the quality of the vowel is often difficult to determine (section 3.4.4).

c. ka-ir → kàhír ‘s/he did’
RP-do

Before *ám* the prefix vowels *u* and *i* are changed into glides and the vowel of the verb root is lengthened (a case of compensatory lengthening); the *a* of the recent past prefix merges with the *a* of the verb into a long *aa*. Before *ír*, however, the prefixes remain separate and unaffected; instead a kind of *h* is inserted between the vowels.[21] We can explain this distinction if we assume that *ír* does have an onset, but one that has no content. We could notate this as *øír*, where *ø* represents an ‘empty sound’.[22] We can make a few observations about this empty sound.

First, not all Kalenjin languages have this empty sound. The Sabaot cognate of *øír* is *yey*, with an initial *y*. There are many other cases where an initial glide in Sabaot before non-low vowels is missing in Endo:

(35)

	Endo	*Sabaot cognate*	
a.	øúut	wuut	‘to shoot’
b.	øóon	woon	‘to chase’
c.	øíim	yiim	‘to trouble’
d.	øéet	yeet	‘to grow up’

Notice that this glide in Sabaot is always homorganic with the following vowel: *w* before *u* and *o*, and *y* before *i* and *e*.

Second, the empty onsets in Endo only occur before the non-low vowels *i*, *u*, *e*, and *o*, but not before *a*. This suggests that the empty onsets might have resulted from not pronouncing an initial glide because its place of articulation is identical to the vowel that follows: *i* and *e* are front (and correspond to *y*) and *u* and *o* are back (like *w*), but *a* is unspecified in this respect and does not in any way correspond to *y* or *w*. (As we will see in section 6.2, *i* and *e* can change into *y* and *u* and *o* into *w* under the

[21] In the orthography this *h* is not spelled. Instead a hyphen is used: *ku-ir*, *ki-ir*, *ka-ir*.

[22] I will only use this symbol when it is relevant for the discussion.

appropriate circumstances, but *a* will never become a glide.) Notice in this respect that Endo does not delete glides before non-homorganic vowels or before *a*:

(36) wêer ‘to pass’, wíir ‘to throw’, yóot ‘to spy’, yú ‘to warm oneself’, yám ‘to suffice’ (vs. ám ‘to eat’), wál ‘to change’ (vs. ál ‘to buy’)

However, the problem with this view is that there are words where we would expect the initial sound to be silent, like *yéeng* ‘to skin’, which is nevertheless pronounced with a clear initial *y*, and *wól* ‘place’, which is never pronounced without the *w*. If Endo is undergoing a process of making initial glides silent before homorganic vowels, then this process must have spread only through part of the lexicon. It seems that currently ø can sometimes contrast with a glide:

(37) a. ku-yeet-ey → kùyèetéy ‘s/he has to be saved’
3D-save-IPF

b. ku-øeet-ey → kùhèetéy ‘s/he has to be promoted’
3D-promote-IPF

Here the distinction between *y* and ø is clearly contrastive.

Third, the *h*-like sound that is used to pronounce the empty onset when a vowel precedes it, is often ‘coloured’ by the sounds around it:

(38) a. ku-oon → kùwóon ‘s/he chases’
3D-chase

b. ki-oon → kíyôon ‘s/he chased’
DP-chase

c. ka-oon → kàhôon ‘s/he chased’
RP-chase

Although the differences are subtle, we can hear a *w* after *u*, a *y* after *i*, and an *h* after *a*.

Fourth, an initial *h* can sometimes be heard very clearly in certain words, even when no vowel precedes it:

(39) a. øoow → hôow ‘big’

b. øor → hór ‘inside’

The existence of an empty onset position in Endo seems well-motivated then. We have seen three ways of demonstrating its existence: (i) because its blocks certain processes at the junction of vowels (only with verbs); (ii) because it is sometimes heard as *h*; (iii) because other Kalenjin languages, notably Sabaot, have a glide in the same position.

However, there are speakers of Endo who do not seem to have this empty onset (or maybe not in all words). Glide formation and coalescence are not blocked, as in the following examples with *ír* ‘to do’:

(40) a. ku-ir → kwǐir ‘s/he does’ (and not kùhír)

3D-do

b. ki–ir → kíir ‘s/he did’ (and not kíhír)

DP-do

Their lexical representation of the verb ‘to do’ for these speakers is not *øír* but *ír*.

4.1.2 The coda

The coda of the syllable in Endo consists of at most one segment. We can see again that complex codas in words borrowed from English can be broken up by an epenthetical vowel, or by deleting one of the consonants:

(41) a. táawùn (< town), láayìn (< line), máayîl (< mile), pôokìs (< box)

b. tôoch (< torch), pùrâas (< brush)

In (41a) a *u* or *i* is inserted between consonants in a coda to avoid an unwanted cluster. In (41b) the onset cluster is simplified by deletion of one of the consonants: the *r* in

torch and the *y* in the cluster *sy*, which would be the Endo rendering of the English *sh*. See also section 5.6 about simplification of complex codas.

4.2 Outside the syllable

The core syllable structure described above does not cover all the clusters found in Endo. There are two types of clusters that need a separate treatment, the nasal-plosive clusters in (42a) and the clusters with an initial *p* in (42b):

(42) a. m̀pó 'even', ǹtó 'or', nchôo 'scream!', nkâa 'and, with'[23]

b. ptòrókà 'squirel', pchùrâat 'naked', pkómpà 'stick', psákàr 'pancreas', pkâat 'to think'

In the nasal-plosive clusters the plosive gets its voicing from the nasal and the nasal its place of articulation from the plosive:

(43) a. npo → [m̀b]ó 'even'

b. nteel → [nd]éel 'to glitter'

c. nkok → [ŋg]ók 'chicken'

d. nchuur → [ɲɟ]úur 'to scream'

However, we follow the standard Endo orthography in writing the nasal in such clusters as *n*, but as *m* when it occurs before *p*. In other words, the place assimilation in these homorganic clusters is only represented for labials.

The *pC* clusters are the result of a synchronic reduction of the masculine prefix *kip-* (although the masculine meaning element is clearly not present in these examples):[24]

[23] The nasals of the first two words in (42a) have their own low vowel. I was not able to hear whether in the last two words, the nasals are toneless or whether they have high tones that merge with the high or falling tone on the second syllable.

(44) a. kip-toroka → ptòrókà ‘squirel’

b. kip-churaat → pchùrâat ‘naked’

c. kip-kompa → pkómpà ‘stick’

d. kip-sakar → psákàr ‘pancreas’

We treat both the nasal-plosive clusters and the *p*-consonant clusters as sequences, for the same reasons that consonant-glide clusters were treated as sequences in section 4.1.1.1. Notice, for example, that the clusters can never occur as codas of syllables. The following examples cannot be Endo words:

(45) a. omp, ont, oonch, aank

b. ropt, rupch, mopk, kaps

There is evidence that the initial segments of the clusters in (42) are not part of the syllable onset, but extrasyllabic in some way and only found at the beginning of roots. It is possible to find consonant-glide onsets of a syllable *within a root* (although they are very rare):

(46) r.kw Márkwêetà ‘idem’

r.sy tìrsyáan ‘to sneeze’

n.kw kìpsénkwèt ‘heaven’

However, we never find forms in which a syllable within a root starts with a nasal-plosive or *p*-consonant cluster:

(47) r.nk marnkeeta

---

[24] There is an interjection *pto*, used to express disgust. Interjections are known to disobey the syllable structure of a language, e.g. English *pshaw*. An initial *pk* cluster also arises when the *w* in a *pw* onset becomes a *k*: pwâat → pkâat ‘to think’.

l.mp	almpo
y.nt	eeynta
r.ps	marpseeta
l.pt	alpto
y.pk	eeypka

These forms are impossible in Endo, which suggests that the nasal and *p* in (42) are not part of the onset. They can only come at the beginning of a root form, where the root may consist of one or more core syllables.

Interestingly, words with an initial nasal and both onset positions filled are quite rare; one of the very few examples is *nkwâch* 'bugs'. Such a cluster of three initial segments can also arise when a final vowel of a verb root turns into a glide before a vowel:

(48) ncho-ey → nchwěey 's/he is crying'
cry-IPF

4.3 Syllable sequences

The syllable structure of a root can be described as a sequence of one or two syllables with an optional initial nasal or *p*:

(49) *Root schema*
(X) Syllable (Syllable)
where X is a nasal or *p* and Syllable has the structure in (26)

In this section we will look at several aspects of the phonological structure of roots: (i) the combinations of consonants that are possible at the juncture of two syllables (section 4.3.1), (ii) the phonological structure of reduplicated roots (section 4.3.2), (iii) combinations of vowels in polysyllabic roots (section 4.3.3), and (iv) roots of more than two syllables (section 4.3.4).

4.3.1 Syllable junctures

What are the combinations of consonants at the juncture of two syllables, i.e. what are the values of $C_1.C_2$, where C_1 is the coda of the first syllable and C_2 the onset of the second syllable?

The class of words in which C_1 is *p* (50a), *s* (50b) or *y* (50c) is very limited and I found no words in which C_1 is *w*. Here are all the examples I could find:

(50) a. típtém 'twenty', làptánì 'brother-in-law', típchâr 'pregnant', lépkêeyà 'brightness', ròpkôonnyáan 'sweet potatoe', ápsíkît 'haversack'

b. pâastà 'pastor', àskárì 'policemen', kìswàyîilì 'Swahili'

c. chèep-tèylèel 'Sun', áynêe 'river', ayper 'young men', kâaykèny 'everlasting'

The words in (50b) are all borrowed from Swahili and the ones in (50c) probably from Nandi or some other Kalenjin language. It is possible that the *pk* and *pch* clusters in (50a) are always the surface realizations of underlying *pw* and *py* clusters, respectively:

(51) a. ropwoon-yaan → ròpkôonnyáan 'sweet potatoe'
sweet.potatoe-SG

b. tipyar → típchâr 'pregnant' (?)

This leaves a handful of cases with *p.t* and *p.s* clusters.[25]

Keeping the special cases in (50) apart, we can observe that C_1 is typically a liquid or nasal:

[25] The numeral *típtém* is probably borrowed from Cushitic. Maybe *làptánì* and *ápsíkît* are also loanwords.

(52)

$C_1.C_2$	*Examples*
liquid.glide	tìryáal ‘to make bare’, káalyâang ‘flies’, káarwâl ‘grey hair’, cháalwâak ‘sin’, ...
liquid.nasal	tármà ‘branch’, pêerngàt ‘rainy season’, ...[26]
liquid.obstruent	àlpá ‘maize’, ártám ‘fourty’, pàrsíntà ‘brother-in-law’, ...
nasal.glide	tímwâr ‘promise’
nasal.liquid	-
nasal.obstruent	chúmpà ‘Europeans’, kùntúul ‘stumps’, ...

When C_1 is a liquid, C_2 can be any kind of sound. With a nasal as C_1, C_2 seems to be restricted to the plosives *p*, *t*, *ch* and *k* only.

There is also a clear *minimum* of one consonant between vowels. In other words, there is no hiatus within morphemes. Two vowels of adjacent syllables need to be separated by a consonant.

4.3.2 Reduplication

Many roots in Endo (nouns, verbs, and adjectives) are total reduplications of one syllable and for most of these the base of the reduplication does not occur as an independent root. Some examples:[27]

(53) chàmchám ‘to taste’, kámkâm ‘difficult’, kúlkúl ‘armpit’, kwàangkwáang ‘destabilize’, wáaywâay ‘restless’, séemsèem ‘slander’

It often happens that the first syllable is short and the second long (but the reverse never occurs in total reduplications):

(54) kàrkáar ‘to spread’, táamîrmìir ‘spirit’

---

[26] In this case, the liquid is always *r*, never *l*, unless perhaps before *m*, as in *Almo*, the name of a section in the Marakwet district.

[27] There is a productive morphological process of verb reduplication with iterative meaning that will not be discussed here: *cháràachár* ‘to keep dividing’ (section 10.2.1).

There are no obvious restrictions on the possible $C_2.C_1$ combinations in the reduplicative structure $C_1V(V)C_2.C_1V(V)C_2$, except that C_2 is never *w*.

There are quite a few syllable sequences that involve what looks like either partial reduplication or total reduplication with deletion. It is not always clear whether we are dealing with a genuine reduplication, or whether a form accidentally has two indentical consonants and vowels. The reader should keep the provisional nature of the presentation in mind when reading the remainder of this section.

The partial (or reduced) reduplications come in two forms:

(55) a. $C_1V(V)\underline{C_1V(V)C_2}$

chùchúk 'to sift', tàtáp 'to touch', réerèes 'bat'

b. $\underline{C_1V(V)C_2}V(V)C_2$

chòolóol 'to gulp', lítît 'straight', kápàp 'wing'

There are two ways of looking at it. The reduplications of type (55a) can be seen as partial reduplications of the base (here underlined) or as total reduplications with subsequent deletion of the coda of the first part:

(56) $C_1V(V)C_2 \rightarrow C_1V(V)C_2C_1V(V)C_2 \rightarrow C_1V(V)C_1V(V)C_2$

e.g. tap → tàptáp → tàtáp

The second type (55b) could be a partial reduplication of a base, or a total reduplication followed by elision of the onset of the second part:

(57) $C_1V(V)C_2 \rightarrow C_1V(V)C_2C_1V(V)C_2 \rightarrow C_1V(V)C_2V(V)C_2$

e.g. kap → kápkàp → kápàp

There are arguments for the total reduplication + elision view, but not yet for a kind of partial reduplication that is the reflex of an abstract prefix (55a) or suffix (55b). One

argument for total reduplication is that sometimes this kind of reduplication occurs side by side with total reduplications in other variants or stages of Kalenjin:

(58) a. tàtáp ‘to touch’ next to tàptáp
b. kìpsêengèeng ‘fool’ next to kìpsêengsèeng
c. kápàp ‘wing’ next to kápkàp

If the partial reduplication pattern is the result of elision, we would expect to find phonological regularities. The following table gives examples of elision in reduplications:

(59)

	Coda elision	*Onset elision*
p	tà(p)táp ‘to touch’	kìpâang(p)àang ‘hornbill’
t	mù(t)mút ‘to grasp’	wàantìr(t)íir ‘to encircle’
ch	?	chùr(ch)úur ‘to strip of’
k	lù(k)lúk ‘to turn upside down’	káy(k)àayén ‘to hesitate’
s	rêe(s)rèes ‘bat	sèeng(s)éeng ‘to fool’
m	?	mìin(m)íin ‘to foam’
n	mà(n)mán ‘to roll’	?
ny	?	?
ng	kìrò(ng)ròng ‘windpipe’	ngìr(ng)íir ‘to smoothen’
l	ngùu(l)ngúl ‘to suck’	lít(l)ît ‘straight’
r	tìi(r)tír ‘to be firm’	?
w	?	wàar(w)áar ‘to mix’
y	náa(y)nâay ‘kind of tree’	?

The incomplete data that we have suggest that many of these elision cases are governed by the *sonority scale*: the consonant that drops out is often the consonant that is less sonorant than the consonant that stays. The sonority hierarchy orders the phonological classes from more to less sonorant as follows:

(60) glides > liquids > nasals > obstruents

The sonority hierarchy motivates the deletion of obstruents that end up next to a nasal, liquid, or glide. A nasal can disappear when it ends up next to a liquid, or a liquid next to a glide:

(61)	*C1.C2*	*Examples*
	nasal.(obstruent)	kìpâang(p)àang 'hornbill'
	(obstruent).nasal	mù(t)mút 'to grasp'
	liquid.(obstruent)	chùr(ch)úur 'to strip of'
	(obstruent).liquid	lù(k)lúk 'to turn upside down'
	glide.(obstruent)	káy(k)àayén 'to hesitate'
	liquid.(nasal)	ngìr(ng)íir 'to level'
	(nasal).liquid	kìrò(ng)ròng 'windpipe'
	(liquid).glide	wàa(r)wáar 'to mix'

The sonority hierarchy accounts for many of the forms, but there are still cases that do not fit the hierarchy, like the following:

(62) lítît 'straight', chùuchún 'to suck', mìimíl 'to make round', nyìinyír 'to rub', náanâay 'kind of tree', lèelèey 'kind of tree', táwárâr 'weak', sìsín 'to flatten'

These words might not be reduplications, or, if they are reduplications, then there are other reasons for why the expected form is not the form that surfaces. Also, the hierarchy does not account for deletion patterns when the adjacent vowels belong to one and the same phonological class, like *kápàp* from *kápkàp* 'wing' (both obstruents). Notice furthermore that *mìiníin* (from *mìinmíin* 'to foam' with onset deletion of *m*) exists side by side with *màmán* (presumably from *mànmán* 'to roll' with coda deletion of *n*).

All the reduplications discussed here have a $C_1V(V)C_2$ base, with an onset and a coda. The onomatopoeic reduplication *ùtúutù* 'ground hornbill' is a special case, because it involves a base *utu*.

4.3.3 Vowel combinations

We have looked at the behaviour of consonants at syllable junctures in polysyllabic morphemes. We will now focus on vowels in polysyllabic morphemes. Every such morpheme has a 'vowel melody', which is the sequence of vowel qualities abstracted away from the segment, as in the following examples:

(63)	*Word*	*Vowel melody*	*ATR*	*Length*	
a.	ngétûny 'lion'	e u	+ATR	V	V
b.	kàrpúus 'to destroy'	a u	−ATR	V	VV
c.	kárâam 'good'	a a	−ATR	V	VV

We separate the qualities of the vowels from their other two properties: ATR and length (V for short and VV for long vowels). We can say that *ngétûny* and *kàrpúus* have heterogeneous vowel melodies and that *kárâam* has a homogeneous vowel melody.

For disyllabic roots we have in theory a total of 25 possible vowel melodies and, when we ignore the order in which the vowels occur, 15 possible combinations of vowels. If Endo imposes no special constraints on the vowel melodies of these roots we would expect each combination to have about the same number. However, as I will show in this section, some combinations predominate (especially the homogeneous vowel combinations), others are very rare, or might reveal an old morphological complexity. Instead of taking the whole set of roots, I have decided, for practical purposes, to consider the verbs, adjectives, and nouns separately.

4.3.3.1 In verbs

I took 125 disyllabic verb roots from our database that looked monomorphic and that did not show any signs of reduplication. Of this set the numbers of each vowel combination are as follows:

	a	e	i	o	u
u	10	4	0	1	16
o	7	0	3	8	
i	18	0	10		
e	16	8			
a	24				

Table 15: Vowel combinations in disyllabic verb roots

66 words out of a total of 125 have identical vowels, which is about 52%, far more than the 20% we would expect if identity of vowels was purely dependent upon chance. The percentage is even slightly higher because some of the *a/e* combinations go back to homogeneous *e* cases:

(64) kàméer 'to put on top' (< *kemeer), nàréek 'to be sad' (< *nereech), sèempár 'to weed' (< *seemper), tèentár 'to unroll' (< *teenter)

Within the set of heterogeneous vowel combinations the following generalizations are possible:

(i) Vowels of the same height also tend to have the same position in the front-back dimension. We don't find *u/i* or *o/e* combinations.

(ii) Most of the heterogeneous combinations involve the low vowel *a* (86% of the heterogeneous combinations).

(iii) When mid vowels combine with high vowels, the front-back feature tends to be different. In other words, the combinations *o/u* and *e/i* are special. One counterexample is *k̲ò p̲ú r* 'to turn upside down' (which is *k̲u p̲u y̲* in Sabaot however).

4.3.3.2 In adjectives

Let us next take a look at a sample of 51 disyllabic adjective roots. Of these, 24 (47%) are homogeneous and 27 (53%) heterogeneous. This is again far more homogeneity than we would expect.

But more restrictions become visible when we take a closer look at the heterogeneous adjectives and the percentages of the vowel combinations:

	a	e	i	o	u
u	6	0	0	0	5
o	0	0	0	4	
i	11	3	5		
e	7	0			
a	10				

Table 16: Vowel combinations in disyllabic adjective roots

From this table we can see some of the same patterns that we saw with the verbs (although the small number of adjectives available requires some care). First, there are no combinations of vowels with the same height (*e* with *o* or *i* with *u*). Second, the vowel *a* combines with all other vowels (except with *o*). It is interesting to see that the mid vowels are not so prominently present in the vowel combinations. (Three of the combinations of *a* and *e* are homogeneous at an underlying level because the *a* corresponds to an original *e*, like in *tápêes* 'wide' (*tepees* in other dialects).)

4.3.3.3 In nouns

In a total of 236 nouns the vowel combinations were counted:

	a	e	i	o	u
u	20	13	3	5	13
o	11	4	13	26	
i	24	13	17		
e	14	19			
a	41				

Table 17: Vowel combinations in disyllabic noun roots

The results of this table can be summarized as follows:

(i) The percentage of homogeneous vowels is 49%, which is similar to the percentages above for verbs and adjectives.

(ii) The percentage of *i/u* and *e/o* combinations is very low (both around 1%), as well as the *o/u* combinations. The number of *e/i* combinations, however, comes out relatively high for the nouns. Hopefully, future research can demonstrate the presence of affixes in these nouns.

(iii) More than half of the heterogeneous combinations involves *a*.

4.3.3.4 Summary

In all three major word classes the same general pattern can be seen. About half of all the morphemes have homogeneous vowels. Within the heterogeneous vowel combinations, *a* combines with all other vowel qualities, other combinations tend to be maximally distinct, i.e. mostly *u* with *e* and *i* with *o*.

4.3.4 Roots that are longer than two syllables

Monomorphemic words of three or more syllables are less common than mono- and disyllabic roots. Many of these polysyllabic roots might be morphologically complex. Let me mention a few suggestive patterns.

There are quite a few trisyllabic words that can be analyzed as consisting of a prefix followed by a root with (partial) reduplication:

(65)

Prefix	*Reduplication*	
tá	pálꝑâl	‘flat’
tá	wárwâr	‘weak’
tà	wêrwèr	‘grasshopper’
táa	pûrpùur	‘butterfly’
táa	kîlkìl	‘molar’
táa	mîrmìir	‘spirit’
táa	ngâsngàas	‘millipede’
táan	pàyꝑáay	‘to be flooded’ (→ táampàyáay)
táan	pìlꝑíil	‘to swell up’ (→ táampìlíil)
táan	kùrkúur	‘to snore’
tàan	kìykìiy	‘pool

Words with a similar structure (but a less obvious prefix) are:[28]

(66)

Prefix	*Reduplication*	
miin	tilꞇil	‘sour’ (→ míintírîl)[29]
sí	mármâr	‘striped’
kâa sìn	kílkîil	‘hawk’
sìin	kòrkòr	‘urine’
síin	kòykóoy	‘to hang’
wáan	tìrꞇíir	‘to encircle’
mà	kàskás	‘pimples’

The noun *kâasìnkílîil* ‘hawk’ has an additional prefix ***kaa-*** (or ***kaap-***, section 10.1.1). The adjective *síngórtôt* ‘rough’ also exhibits the same prefix ***si-***. Maybe

[28] Alternatively, some of these words might be analyzed as involving a different pattern of reduplication: ***makas-makas-kas*** ‘pimples’. Even then trisyllabic roots can be reduced to disyllabic roots.

[29] Rottland (1982) assumes that Endo and some other Kalenjin languages have undergone a dissimilation process: the first of two ***l*** sounds is changed into an ***r***. See Larsen (1991) for a discussion of this process and an alternative view of the historical changes involved.

múunchùurúus ‘merchants’ has the prefix *miin-* with its vowels assimilated to the back vowels of the root.

A suffix *-Vt* could be present in the following nouns:

(67) sòsòp–ùt ‘sea weed’, áléép–ût ‘wooden pitcher for milking’, púrùut–út ‘pus’, móróonk–ît ‘quiver’, ápsík–ît ‘haversack’

In verbs with three syllables we can recognize an ending *-V(V)n* that is close to the derivational suffix *-an* (10.2.9). Many of these forms also have reduplication:

(68) káyàayén ‘to hesitate’, lóoklòokén ‘to burst out in tears’, rómròmón ‘to cheat’, táamtàamén ‘to be without words’, téktèkén ‘to speak in fear’, táaytàayén ‘to disagree’, wáaywàayén ‘to talk deliriously’, túulùunkén ‘to become cloudy’, súlùumén ‘to maltreat’, sékènéen ‘to hang’,

This only leaves us with a relatively small set of nouns and one numeral which cannot be straightforwardly reduced to a root of one or two syllables:

(69) pàrànkôoyà ‘kind of vegetable’, pàkànár ‘kind of small mushrooms’, nyàkwàláltà ‘slug’, múkúlêr ‘heart’, mokochor ‘grandchildren’, kósólíny ‘evening’, kórpôtòon ‘kind of bird’, kòróyìit ‘colobus monkey’, kàmàtár ‘cactus’, chàpùnánà ‘forearm’, átòoméey ‘kind of tree’, ámàtúun ‘yesterday’, tápéesâay ‘soles’, ákôongò ‘one’, ákútâan ‘intestines’, áráarây ‘sea’, áráwâas ‘fungus’, kâakùmíinkòot ‘wasp’, káyàaríin ‘day after tomorrow’

We can conclude that all verbs and adjectives have at most two syllables and most nouns. The schema in (49) then characterizes almost all (native) roots in the language. If the roots in (69) can not be shown to be borrowed or morphologically complex, then we would have to revise schema (49) by adding one or two extra syllables.

5 Processes involving consonants

There is a range of processes that occur when two consonants of different morphemes come together. All these processes serve to make the combination of those consonants smoother: assimilation, weakening, elision, degemination, and vowel epenthesis. Also there might be a process of simplification of complex sounds at the end of words and occasional cases of metathesis.

5.1 Assimilation

Assimilation is the adaptation of a sound to a neighbouring sound. For consonants we can distinguish three kinds of assimilation:

(70) a. *manner assimilation* (e.g. oral becomes nasal before nasal)
kip-ngwaan-yaan → kìmngwâannyáan 'ankle bone'
MASC-ankle.bone-SG

b. *place assimilation* (e.g. palatal becomes alveolar before alveolar)
peeny-ta → péentá 'the meat'
meat-DF

c. *voice assimilation* (e.g. voiceless plosive becomes voiced after voiced nasal)
een-ta → én[d]á 'the river'
river-DF

Voice assimilation has already been discussed when we introduced the consonants and their realizations. In this section we will concentrate on manner and place assimilation.

5.1.1 Manner assimilation

5.1.1.1 Plosives assimilating in manner to nasals

The final plosive *p* of the gender prefixes *kìp-* 'masculine' and *chèep-* 'feminine' (see 10.1.2) can optionally assimilate in manner to a following *ny* or *ng*:[30]

[30] Before *n* and *m* the *p* is not assimilated but deleted, see section 5.3.2.1.

(71) a. kip-nyiikeew → kìmnyîikèew ‘member of age set 8’
MASC-age-set.8

b. cheep-ngoor-ey → chèemngôorèy ‘fortune-teller’
FEM-foretell-IPF

c. kip-ngwaan-yaan → kìmngwâannyáan ‘ankle bone’
MASC-ankle.bone-SG

d. cheep-ngwaal → chèemngwàal ‘lame woman’
FEM-lame

What happens in the following examples is difficult to tell:

(72) a. kip-makeet → kìmàkèet ‘hyena’
MASC-hyena

b. cheep-marmar → chèemármár ‘zebra’
FEM-striped

The single *m* at the junction of the prefix and the root can either result from deletion of the *p* or from a combination of assimilation (*pm* > *mm*) and degemination (*mm* > *m*).

5.1.1.2 Glides assimilating in manner to nasals

When *y* follows a nasal, it usually becomes a palatal nasal itself:

(73) a. kip-seemseem-yaan → kìpséemsèemnyáan ‘slanderer’
MASC-slander-SG

b. mukun-ya → múkúnnyá ‘condensed milk’
condensed.milk-SG

c. kwong-ye → kwóngnyá ‘to be suprised (pl.)’
be.suprised-SOC

For combinations of *ny* and *y* (which are pronounced as *ny*) there are two possible analyses.

(74) piinyiiny-yaan → píinyìinyáan ‘leech’
leech-SG

Either the *y* of the suffix is deleted (see section 5.3.1) or it is assimilated and the resulting *nyny* sequence is degeminated.

5.1.1.3 Glides assimilating in manner to plosives

The two glides *w* and *y* both assimilate in manner to a preceding plosive.

The *w* becomes *k* after *p*. This can be analyzed as assimilation of manner (i.e. both become stops). The assimilation seems to occur more or less generally, within morphemes and across morpheme boundaries, in all parts of speech. Some examples:[31]

(75) a. pwaat → pkáat ‘to remember’[32]

b. tup-wa → tùpkà ‘burial’
bury-NOM

c. ap-u-aan → ápkâan ‘bring to me’
bring-VNT-O1S

d. cheep-woos-aat → chèepkòosâat ‘mad person’
FEM-mad-STAT

The *y* becomes *ch* after *p* and *k*. This might be seen as the same kind of assimilation, but it is more restricted since it only applies clearly when a *y*-initial suffix follows *p* (but not always) and maybe occasionally within roots. It does not apply between a prefix and the stem.

(76) a. típyâr → típchâr ‘pregnant’ (?)

b. sélèp-yáan → sélèpcháan ‘cockroach’
cockroaches-SG

[31] I found only one exception, *kápêepwà* ‘meat-pot’, which does not seem to be common word.

[32] In other Kalenjin languages the form is *pwaat*.

c. lòok-yáan → lòocháan ‘tear’
tears-SG

The plosive *k* is deleted in *lòocháan*, which is a regular elision process (see section 5.3.2.2). The sociative (plural) verbal suffix *-ye* has the allomorph *-cha* after nasals:

(77) a. ryaang-ye → ryáanchá ‘to stand’
stand-SOC
b. pootan-ye → pôotànchà ‘to tremble’
tremble-SOC

This alternation could be seen as assimilation too. Instead of fully assimilating to the preceding nasal, the glide assimilates only to the consonantal manner of the nasal.

5.1.2 Place assimilation

5.1.2.1 Nasals assimilating in place to consonants

Palatal and velar nasals clearly assimilate to a following *t*, but the assimilation is sometimes optional as the last example shows:

(78) a. peeny-ta → péentá ‘the meat’
meat-DF
b. koong-ta → kóontâ ‘the eye’
eye-DF
c. raang-ta → ràantà ‘to pour out’
pour-ITV
d. saang-ta → sáangtá ‘the village’
village-DF

With a following *p* we see assimilation of *n* and *ny* only, *ng* remains unaffected:

(79) a. een-pa → èempà ‘river of’
river-ASS

b. peeny-pa → pèempà ‘meat of’

meat-ASS

c. koong-pa → kôongpà ‘eye of’

eye-ASS

Assimilation to *ch* is hard to hear for *n* but obvious for *ng*:

(80) a. pootan-chi → pòotâ[ɲ]chí ‘to tremble for’

tremble-DAT

b. yeeng-chi → yée[ɲ]chí ‘to slaughter for’

skin-DAT

There are unfortunately no suffixes with an initial *k* following a nasal, so we can not determine the assimilation processes there. We know however that in morphemes a nasal before *k* is velar, unless that nasal is *m*:

(81) a. tankus → tá[ŋ]kûs ‘soft’

b. támkòong ‘caterpillar’

This suggests that *n* and *ny*, but not *m*, assimilate before *k*. The general pattern is that the non-labial nasals *n*, *ny*, and *ng* usually assimilate to a following stop, except that *ng* stays *ng* before *p* and that *m* never assimilates.[33]

The *ny* also assimilates in place of articulation to the glide *w*:

(82) maakany-wa → máakângwà ‘fig-tree’

fig.trees-SG

A relevant observation in this respect is also that the cluster *nyw* does not occur in Endo, but *ngw* does, as in *ngwènyy* ‘ground’ and in several other words.

[33] Recall that in this grammar we will follow the Endo orthography in not spelling the assimilation in *nch* and *nk*.

5.1.2.2 Glides assimilating in place to vowels

Sometimes a glide can assimilate to a vowel:

(83) saay-uut → sáawûut ‘prayers’
pray-NOM

The front glide *y* takes on the back (or rounded) pronunciation of the vowel *u*, becoming *w*.

5.2 Weakening

The *k* can become *y* before *t*, which is probably a case of weakening. The process is optional and applies only in verbs:

(84) a. puuk-ta → púuytá ‘to sweep away’
sweep-ITV

b. kitook-tiin → kìtôoktìin ‘beds’
bed-PL

The motivation behind this process could be to make the cluster conform to the sonority ordering that we saw in section 4.3.2: *k* has to become lower in sonority than *t* and one way to do this is to turn it into a glide. Why is the resulting glide *y* instead of *w*? This could be because, as we saw also in section 4.3.1 and 4.3.2, a *w* in that position in a cluster tends to be avoided.

5.3 Elision

We can distinguish two kinds of consonant deletion: onset deletion or coda deletion.

5.3.1 Onset elision

We have already seen cases of onset elision in reduplications (e.g. *kapkap* 'wing' becoming *kápàp*). Here I will focus on onset elisions involving suffixation.[34]

One clear case of onset elision involves the dative suffix *-chi* (10.2.17), which looses its *ch* after *t* and *s*:

(85) a. nguut-chi → ngúutí 'to show to'
show-DAT

b. tas-chi → tásí 'to add to'
add-DAT

Some suffixes that begin with *y* lose their onset after palatal sounds:

(86) a. saawaach-yaan → sáawâacháan 'weaver bird'
weaver.birds-SG

b. motoony-yaan → mótòonyóon 'vulture'
vulture-SG

c. paay-yaan → páayâan 'old man'
old.man-SG

This last example could also be analyzed as degemination of *yy* to *y* (5.4).

The singular demonstrative suffixes (10.1.10) lose their initial *n* when they occur after a consonant:

(87) a. peeny-ni → pèenyì 'this meat'
meat-this

a'. laak-wa-ni → làakwàanì 'this child'
child-TH-this

b. chiich-naanee → chìicháanêe 'that person'
person-that

[34] There are no cases where a prefix or root loses its *initial* consonant.

b'. koor-a-naanee → kòoràanáanêe 'that area'
land-TH-that

Another analysis would be to assume that the underlying form of the singular demonstratives has no initial consonant, but that the *n* is an epenthetical segment inserted between vowels (Larsen 1986).[35] However, one reason to assume that the nasal is underlyingly present is to maintain the parallelism with the demonstrative pronouns (that all have an initial nasal *ny*).

5.3.2 Coda elision

More common than onset elision is the deletion of a coda consonant. This occurs in prefixes, roots and suffixes.

5.3.2.1 Elision of the coda of prefixes

There are only three prefixes that clearly have a coda and these are the gender prefixes *kìp-* and *chèep-* and the locative prefix *kâap-*, all three with a coda *p* (10.1.1 and 10.1.2). The *p* of these prefixes can be dropped before almost all consonants:

(88) a. cheep-tuum → chèetûum 'name'
b. kaap-chiich → káachîich 'family'
c. kaap-kasum → kâakàsúm 'place of water pot'
d. kip-saang → kìsâang 'name'
e. cheep-marmar → chèemármár 'zebra'
f. kaap-na → káanâ 'place of goats'
g. cheep-liimaasan → chèelìimáasân 'name'
h. kip-roop → kìrôop 'name'

[35] See also section 6.4 for epenthetical consonants.

There is no deletion of *p* before the nasals *ny* and *ng*. Instead, as we saw in section 5.1.1.1, the *p* is assimilated to the nasals. The *w* assimilates after *p* (as shown in section 5.1.1.3). Only before *y* we find no elision of *p*.

Interestingly, for most of the above *p-C* clusters we can find examples where *p* does not disappear:

(89) a. kìptáapúrpûr 'butterfly'
b. káapchâang 'constellation of stars'
c. chèepkòrôot 'blind person'
d. kìpsákâasyáan 'hunter'
e. kìpménkêech 'last born of twins'
f. káapléelâch 'male age set 2'
g. kìprângràng 'earthquake'

This shows that elision is a somewhat irregular process, except maybe with the nasals *m* and *n*.

5.3.2.2 Elision of the coda of roots and suffixes

There are two type of elisions occurring at the end of roots and suffixes. One type of elision occurs to avoid consonant clusters that are disallowed in the language. A *t* drops out in (90), *ch* in (91), *k* in (92), and *y* in (93):[36]

(90) a. keet-it-kay → kêetìkáy 'that tree'
tree-DF-DEM
b. met-it-nyuun → métìnyùun 'my head'
head-DF-my
c. ka-it-ngwaang → kâangwàang 'their house'
house-DF-their
(91) a. chiich-pa → chìipà 'person of'
person-ASS

[36] Recall that we observed in section 4.3.1 that *yC* sequences are not native to Endo.

b. piich-kay → pìikáy ‘those people’

people-DEM

c. chiich-nyuun → chìinyùun ‘my person’

person-my

d. chiich-ngwaang → chìingwàang ‘their person’

person-their

(92) a. ngal-a-ik-pa → ngàlèepà ‘words of’

words-TH-DF-ASS

b. laak-ooy-ik-chiich → làakóochìich ‘his/her children’

child-PL-DF-his/her

(93) ooy-chi → óochí ‘to return to’

return-DAT

These elisions occur without exception and always to avoid an impossible cluster.

Then there are elisions that occur only with certain roots or prefixes but not with others:

(94) a. kir-ta → kíitá ‘the thing

thing-DF

a’. wiir-ta → wìirtà ‘to throw away’

throw-ITV

b. chiich-ta → chíitá ‘the person’

person-DF

b’. tokoch-ti-i → tókóchtîi ‘the face’

face-TH-DF

c. cheep-ta → chéetá ‘the girl’

girl-DF

c’. lap-ta → làptà ‘to drive’

hit-ITV

d. muren-chu → múrêchù ‘these men’

men-these

d'. pootan-chi → pòotânchí 'to tremble for'
tremble-DAT

e. muren-kay → múrèkáy 'that man'
man-DEM

e'. a-nket → ánkèt 'I know'
1S-know

These deletions are part of the irregular allomorphy of a few nominal roots (*kír* 'thing', *chîich* 'person', *chéep-* 'girl'[37], *múrèn* 'man', and *múrên* 'men'). The elision of a consonant is sometimes compensated for by compensatory lengthening:

(95) taaytaayen-chi → táaytàayéechí 'disagree with'
disagree-DAT

The personal pronouns can serve as possessive pronouns before a noun. In this use they lose their final *n*:

(96) a. aneen kuumat → ánêe kûumát 'my honey'
I honey

b. inyeen kaaw → ínyêe kâaw 'your (sg.) home'
you.sg home

A special kind of deletion involves the *n* of the short plural suffix *-in* and its allomorphs before *-ik*:

(97) a. tyaany-in-ik → tyáangîik 'the animals'
animal-PL-DF

b. tuk-un-ik → túkúuk 'the things
thing-PL-DF

[37] The root *cheep* never occurs without a suffix.

It is special because it does not occur before a consonant, like the other deletions described above, but before a vowel. The explanation for this rule might be as follows. Sequences of a plural suffix and a definite suffix can never involve two vowels of the same length. Either the plural suffix is long and the suffix of the definite suffix short, or the plural suffix is short but then the definite suffix has a long vowel:

(98) a. set-aan-ik → sétàaník 'the gourds'
gourd-PL-DF

b. oor-tin-a-ik → ôortínêek 'the roads'
road-PL-TH-DF

Some processes are meant to make sure that no plural definite noun ends in two syllables with the same length. Length dissimilation applies to avoid that the final two syllables are both long (99a); consonant deletion applies to avoid that they are both short (99b):[38]

(99) a. kuuka-tiin-a-ik → kúukàtìinék 'the ancestors'
ancestor-PL-TH-DF

b. iit-in-ik → îitíik 'the ears'
ear-PL-DF

Another instance of elision of a consonant between vowels is the following:

(100) cheep-yoos-ooy-ik → chèepyóosóok 'the women'
FEM-old-PL-DF

[38] The analysis of *length* dissimilation assumed here goes back to Tucker and Bryan (1964) and assumes that some plural suffixes come with a special 'vowel appendix' (Rottland 1982, Creider and Creider 1989). But see Larsen (1986) for an alternative analysis of this phenomenon in Sabaot based on *height* dissimilation. In his view the plural suffix is just *-iin*, without a following *a*, and the *i* in the ending *-iin-ik* becomes *e* to make it dissimilar to the high vowel in *-iin*.

Only in the *-ooy-ik* sequence *y* is deleted and the *i* of the definite suffix merged into the long vowel of the plural suffix. This is an instance of a more general pattern of *y*-deletion between vowels seen in other Kalenjin languages. The Endo word *wúrûr* 'difficult' corresponds to *wuuy* in Sabaot, which really derives from a form *wuyuy*.

A historical process of deletion of final plosives after long vowels can be seen in associative and definite forms. Endo has lost the final *p* of the associative suffix and the final *t* of the definite suffix that can still be heard in most other Kalenjin languages:

(101) a. cheep-ta-aa → chèetàa 'girl of' (Endo)
girl-DF-ASS

a'. cheep-ta-aap → chèetàap 'girl of' (Other Kalenjin)
girl-DF-ASS

b. laakwa-i → làakwée 'the child' (Endo)
child-DF

b'. laakwa-it → làakwéet 'the child' (Other Kalenjin)
child-DF

5.4 Degemination

When two identical consonants meet, one of the two has to go. It is difficult to find good examples of this process because most degemination cases can also be brought under the elision processes mentioned in 5.3. Some examples might be:

(102) a. kaap-piich → káapîich 'families'
LOC-people

b. chaat-ta → cháatá 'the thigh'
thigh-DF

c. keech-chi → kéechí 'to peel for'
peel-DAT

d. ngal-a-ik-kuuk → ngàlèekùuk 'your words'
words-TH-DF-your

5.5 Vowel epenthesis

The vowel *i* is inserted between a verb stem ending in *t* and a suffix that begins with *t* to avoid a geminate *tt*:

(103) ak-ku-wuut-ta → àkúwúutìtà ‘and to shoot’
CO-3D-shoot-ITV

The insertion of a vowel in words borrowed from English to avoid unwanted consonant clusters was already mentioned in section 4.1. In both cases it is an *i* that is inserted.

5.6 Simplification

As we saw in section 4.1.2 complex codas of English loan words have to undergo simplification or epenthesis to fit the Endo syllable structure (e.g. *torch* becomes *tôoch*). The words in (104) show an alternation between *ng* and *nk* but the words in (105) don’t:

(104) a. kárêeng ‘a leg’ - káréenkêe ‘the leg’
b. kítông ‘milking container’ - kítônkàan ‘milking containers’
(105) a. lôong ‘shield’ - lóongêe ‘the shield’
b. kúutûng ‘knee’ - kúutúngêy ‘knees’

As Creider & Creider (1989:14) argue for Nandi, underlyingly forms like those in (104) have a final *nk*, which is then changed into a *ng*. The force behind this process is that *nk* is not a well-formed coda in Endo, as we saw in section 4.1.2 and, in a sense, the *n* and *k* merge into a velar nasal *ng* to escape a violation of the syllable structure:

(106) a. kareenk → kárêeng ‘a leg’
leg.of.animal
a’. kareenk-a-i → káréenkêe ‘the leg’
leg.of.animal-TH-DF

b. kitonk → kítông ‘milking container’

milking.container

b’. kitonk-aan → kítônkàan ‘milking containers’

milking.container-PL

The underlying final sound of the nouns in (105) is simply *ng*.

Some speakers of Endo simplify a *ky* cluster (that originates from a prefix *ki-* or *kee-*, see section 6.2) to *ch*:

(107) ki-a-pankan-aa → chaapankanaa ‘I prepared’

DP-1S-prepare-S1S

If Larsen (1986) is correct in analyzing *-VVs* plural suffixes (*-iis*, *-uus*, and *-oos*) as ending underlyingly in *sy*, then this gives us another instance of an underlying complex coda which requires simplification word finally:

(108) a. cheep-saakey-iisy → chèepsáakêyíis ‘sorcerers’

FEM-sorcerer-PL

b. cheep-saakey-iisy-ik → chèepsáakêyíisyék ‘the sorcerers’

FEM-sorcerer-PL-DF

When the *sy* cluster occurs word-finally it is simplified by deletion of the glide; when it combines with a following vowel it is pronounced as [ʃ]. The *i* becomes *e* to make it dissimilar with the preceding glide *y* (see footnote 38).

5.7 Irregular alternations

There are a few words where *ny* alternates with *ng* in an irregular way:

(109) a. tyâany ‘animal’ - tyáangín ‘animals’

b. kôong ‘eye’ - kóonyîn ‘eyes’

In both cases the plural nouns are formed with the plural suffix *-in*, but it is not clear what triggers the alternation, which has an opposite direction in the two cases.

5.8 Metathesis

Occasionally one can observe cases of metathesis involving consonants separated by a vowel:

(110) a. kìmálàt vs. kìlámàt ‘lizard’

b. mókòchór vs móchòkór ‘grandchildren’

c. múkúlêr vs. múkúrêl ‘heart’

d. ráal vs. láar ‘to cough’

6 Processes involving vowels

This chapter describes those morphophonemic processes that apply to vowels, except for vowel harmony, to which a separate chapter (Chapter 7) is devoted.

6.1 Vowel elision

Vowel elision can sometimes be seen before the singulative suffix *-yaan* when the final vowel of a (borrowed) noun root drops out:

(111) a. nkâanyáan 'wheat' (from Swahili *ngano*)
b. ntîisyáan 'banana' (from Swahili *ndizi*)
c. màkàtyáan 'bread' (from Swahili *mkate*)

But there are also examples where this does not happen:

(112) a. míiwàyáan 'sugar cane' (from Swahili *mua*)
b. nóotìyáan 'note' (from Swahili *noti*)
c. mùchéelèyáan 'rice' (from Swahili *mchele*)

In native words, however, the situation is less clear:

(113)	*Plural*	*Singular*	
a.	chèemêerì	chèemêeryáan	'circumcised girl'
b.	wôorà	wôoryáan	'circumcised girl'

The problem is the status of the final vowels in the plural forms here. The *i* and *a* at the end of the plural forms can be integral parts of the root that are deleted before *-yaan*, but they could also be suffixes that are characteristic for the plural and that alternate with the singulative suffix in the paradigm, analogous to the following examples:

(114)

	Plural	*Singular*	
a.	chèepsáakîtíis	chèepsáakîtyáan	'herbalist'
b.	kìpsákâastìin	kìpsákâasyáan	'hunter'

Here the plural endings *-iis* and *-tiin* alternate with the singulative suffix in a clear replacement pattern which does not involve elision, of course. The examples in (113) might also work like this. The same problem can be seen in the following examples:

(115)

	Plural	*Singular*	
a.	chúmpà	chúmpíin	'European'
b.	kàtôoy	kàtá	'thorn'

Is the *a* of *chúmpà* deleted because of phonological reasons (because it precedes a long vowel, for example), or is it a plural suffix? Is the plural suffix *–ooy* suffixed after *kàtá* (with deletion of the *a*), or does it take a nominal root *kat–* that is followed by a suffix *–a* in the singular? This is an issue that will have to be left open here. A closer examination of tonal patterns might lead to further insight. (See also sections 10.1.6 and 10.1.7 of the morphological appendix).

There are not many disyllabic verb roots that end in a short vowel, but those that do, can show deletion:

(116) a. nyálá 'to annoy'

b. nyala-iisya → nyálìisyà 'to be angry'

annoy-ESS

Also, the short final vowel of some verbal suffixes is elided before vowel-initial suffixes:

(117) a. was-aata → wásàatà 'to go looking'

look-AMB

a'. was-aata-ey → wásàatéy 'to go looking'

look-AMB-IPF

b. kar-ta → kàrtà 'to lock up'

close-ITV

b'. kar-ta-eech → kártèech 'to lock us up'

close-ITV-O1P

c. neet-iisya → nèetíisyá 'to teach'

teach-ESS

c'. neet-iisya-aata → nèetìisyáatá 'to go teaching'

teach-ESS-AMB

This elision seems to happen before long vowels: before the object suffixes *-aan*, *-iin*, *-eech*, and *-aak*, the ambulative *-aata*, the essive *-iisye*, and various other suffixes. Only in the example with the imperfective does elision happen before a short vowel.[39]

6.2 Glide Formation

When followed by an another vowel the non-low vowels *i* and *e* and *u* and *o* can change into the corresponding semivowels *y* and *w*, respectively. This can happen with prefixes (118), roots (119), and suffixes (120) ending in one of these four vowels:

(118) a. ki-a-keet → kyâakèet 'I have killed'

DP-1S-kill

b. ku-am-ey → kwàaméy 's/he is eating'

3D-eat-IPF

c. kee-ap → kyáap 's/he was taken'

3I-take

(119) a. a-mii-aa → ámyàa 'I am'

1S-be-S1S

[39] Also in some of these cases we may wonder whether there is not allomorphy of the suffixes, e.g. *-aat(a)*.

b. ku-yu-ey → kùywéey ‘s/he is warming her/himself’

3D-warm-IPF

c. nchoo-ey → nchwěey ‘be screaming’

scream-IPF

(120) a. ka-a-met-chi-aak → káamêtyàak ‘I have left you (pl.)’

RP-1S-leave-ITV-O2P

b. ka-mwaar-u-eech → kàmwáarwèech ‘s/he has told us’

RP-tell-VNT-O1P

Note what happens in (120a): the *ch* of *-chi* drops out because it comes after *t* (section 5.3.1) and the remaining *i* changes into a glide *y*. The ventive suffix *-u* in the following example first changes to a *w* because it precedes a long vowel and then into a *k* because it follows a *p*:

(121) ap-u-aan → ápkâan ‘bring to me’

bring-VNT-O1S

When the vowel following the *i* or *u* is short, then there is compensatory lengthening of this vowel, as seen above in (118) and (119).

Glide formation does not always happen when we would expect it. Sometimes we get coalescence or epenthesis:

(122) a. ka-a-sir-u-in → káasîrúun, not kaasirwiin

RP-1S-write-VNT-O2S ‘I have written to you’

b. i-al-ta → ìyáaltà not yaalta ‘you are selling’

2S-buy-ITV

This shows that the conditions determining how Endo responds to ‘vowel encounters’ are still unclear.

6.3 Coalescence

Two vowels can combine to form a single long vowel. If the vowels are identical, then the result is a long vowel of the same quality:

(123) a. ma-a-suwa → máasûwà ‘I haven’t seen (him/her)’
NG-1S-see

b. ki-i-cham → kíichàm ‘you have accepted’
DP-2S-accept

c. tuukaani-i → tùukâaníi ‘the shop’
shop-DF

More commonly however, the two vowels are of different quality. We see that *a* and *i* make *ee*:

(124) a. ka-i-chaas → kèecháas ‘you are tired’
RP-2S-tire

b. ma-i-nket → mèenkét ‘s/he does not know’
NG-2-know

c. laakwa-i → làakwée ‘the child’
child-DF

d. roopiya-ik → ròopíyêek ‘the money’
money-DF

The combination of *u* and *i* always gives *uu*:

(125) a. ku-i-nket → kùunkét ‘s/he knows’
3D-2-know

b. kitaapu-i → kìtâapúu ‘the book’
book-DF

c. ka-a-sir-u-in → káasîrúun ‘I have written to you’
RP-1S-write-VNT-O2S

The *e* of the imperfective exhibits the following combinations:

(126) a. nguut-u-ey → ngùutûuy 'to show'
show-VNT-IPF

b. ku-i-laak-ta-ey → kûulàaktáay '(how) to dress'
3D-2-dress-ITV-IPF

c. pees-ye-ey → péesyěey 'be separating'
separate-SOC-IPF

The generalization is that the first vowel always determines the quality of the resulting long vowel, at least if we can show that the vowel of the sociative suffix *-ye* in (126c) is in fact underlyingly *e*. Evidence for this can in fact be found. Vowels before the suffix *-chi* are lengthened (see also section 6.5.2):

(127) a. ku-al-ta-chi → kwăaltàachí 's/he sells it to'
3D-buy-ITV-DAT

b. ku-tuuy-ye-chi → kùtúuyèechí 's/he meets with'
3D-meet-SOC-DAT

The lengthening patterns in (127) and the assimilation patterns in (126) can both be understood if the itive suffix is *-ta* and the sociative suffix is *-ye* underlyingly. The reason that it is pronounced *-ya* word-finally might relate to the tendency of short vowels in suffixes to reduce to the vowel qualities *i*, *u*, or *a* (see section 3.4.2).

6.4 Epenthesis of consonants between vowels

The clearest examples of epenthetic consonants between vowels are the *y* and *w* that are inserted before front and back vowels, respectively:

(128) a. changaa-ik → chàngáayîk 'kind of beer'
beer-DF

b. ra-iit → ràyíit 'to become bad'
bad-INC

c. tala-een → tálàayéen ‘gentle (pl.)’

gentle-PL

d. taa-u → tàawù ‘to begin’

begin-VNT

Since the word *chàngâa* is borrowed from Swahili, we know that the *y* is not part, underlyingly, of the root, but inserted in the definite form. Epenthesis is chosen above coalescence, because the final vowel of *chàngâa* is long.

Other emerging consonants are not so clear. We could either analyze them as epenthetical consonants or as part of an allomorph of one of the morphemes involved. There are cases with an *n*, both with suffixes (*-chi(n)*) and roots (*-te(n)*):

(129) a. ku-char-chi → kùchárchî ‘s/he shares’

3D-share-DAT

a’. ku-char-chi-aata → kùchárchìnáatá ‘s/he goes and shares’

3D-share-DAT-AMB

b’. ku-i-te → kûté ‘s/he gives to’

3D-2-give

b’. ku-i-te-ii → kùutèníi ‘s/he is giving to’

3D-2-give-IPF

In other cases we find an *r*:[40]

(130) a. ki-paar-ye → kípáaryâ ‘they fought’

DP-fight-SOC

a’. ki-paar-ye-ee → kípâaryèerèe ‘they fought with’

DP-fight-SOC-INS

b. ku-pe → kúpâ ‘they go’

3D-go

[40] I assume that the underlying form of the verb for ‘to go’ is *pe*. This vowel becomes *a* word-finally and is lengthened in other contexts.

b'. ku-pe-a → kúpéerâ 'they go from'

3D-go-INS

Some verb roots have *l* or *t*:

(131) a. kee-le → kêelè 'we said'

1P-say

a'. kee-le-ii → kèelèelíi 'we were saying'

1P-say-IPF

b. ki-pe → kípá 'they went'

DP-go

b'. ki-pe-ii → kípêetíi 'they were going'

DP-go-IPF

More details about this allomorphy belong in a description of the morphology of Endo. See section 10.2 for a partial description.

6.5 Changes of vowel length

We see various occasions where the length of a vowel is changed, either from long to short, or from short to long:

(132) a. karaam-iit → kàràmíit 'to become good'

good-INC

b. laakwa-ni → làakwàanì 'this child'

child-this

In this section I will give an overview of these changes.

6.5.1 Vowel shortening

Polysyllabic adjectives that have a long vowel in the last syllable shorten that vowel before the inceptive suffix *-iit/-iit(u)*:

(133) a. kórôom ‘fierce’ - kórómìit ‘to become fierce’

b. nyíkîis ‘heavy’ - nyìkìsíit ‘to become heavy’

c. kárkêey ‘like’ - kàrkàyíit ‘to liken’

Monosyllabic adjectives are not affected by this process:

(134) a. châang ‘much’ - chàangíit ‘to become much’

b. tûur ‘black’ - tùuríit ‘to become black’

The plural noun *pîich* ‘people’ shows shortening before demonstratives which is probably an irregularity of this root:

(135) a. piich-chu → pìchù ‘these people’

people-these

b. piich-chaachee → pìcháachêe ‘those people’

people-those

As we saw already in section 5.3.2.2, the final syllable of a definite plural noun ending in *-eek* or *-eek* is shortened under certain conditions:

(136) a. araaray-tiin-a-ik → áráarâytìinák ‘the lakes’

lake-PL-TH-DF

b. kuuka-tiin-a-ik → kúukàtìinék ‘the ancestors’

ancestor-PL-TH-DF

This happens after plural suffixes with a long, high vowel:

(137) a. keny-iis-ya-ik → kényíisyék ‘the years’

year-PL-TH-DF

b. pereet-uus-ya-ik → pérêetúusyék ‘the days’

day-PL-TH-DF

c. meeli-iin-a-ik → mêelìinék ‘the boats’

boat-PL-TH-DF

d. eer-uun-a-ik → éerúunêk ‘the hands’

hand-PL-TH-DF

e. mukuler-tiin-a-ik → múkúlêrtìinék ‘the hearts’

heart-PL-TH-DF

After a plural suffix with a short vowel there is no shortening:

(138) kookwa-aatin-a-ik → kookwaatineek ‘the councils’

council-PL-TH-DF

The vowel is also shortened after the plural suffix *-oosy* and in the combination *-wa-ik* (which only occurs with the two words mentioned here):

(139) a. koor-oos-ya-ik → kòoróosyék ‘the countries’

country-PL-TH-DF

b. asiis-wa-ik → ásîiswék ‘the days’

sun-PL-DF

c. sapaan-wa-ik → sápâanwék ‘the lives’

life-PL-DF

Furthermore, it happens after underived plural nouns with a long high vowel, but not always when these are monosyllabic:

(140) a. keechiir-a-ik → kéechíirêk ‘the sheep (pl.)’

sheep(pl)-TH-DF

b. saasuur-a-ik → sáasûurék ‘the wild bananas’

wild.banana-TH-PL

(141) a. puut-a-ik → pùuték ‘the hair’

hair-TH-DF

a’. muum-a-ik → mûuméek ‘the oaths’

oaths-TH-DF

b. miis-a-ik → mîiséːk ‘the covenants’

covenants-TH-DF

b’. riir-a-ik → rìiréːek ‘the oxpeckers’

oxpeckers-TH-DF

If the analysis of these forms is correct and there is indeed a rule of length dissimilation, then the precise conditioning of this shortening process is still unclear.

6.5.2 Vowel lengthening

Vowel lengthening is a very common phenomenon before certain suffixes, both in the verbal and nominal system and it involves the vowels of roots as well as of suffixes themselves.

In the verbal system the dative suffix *-chi* triggers lengthening of the preceding vowel. This can the vowel of a verb root:

(142) a. ak-ku-mwa → àkúmwá ‘and to say’

CO-3D-say

a’. ak-ku-mwa-chi → àkúmwáːachî ‘and to say to’

CO-3D-say-DAT

b. ku-we → kúwáː ‘to go’

3D-go

b’. ku-we-chi → kúwéːechî ‘to escape’

3D-go-DAT

or the vowel of a preceding suffix:

(143) a. ku-al-ta-chi → kwăaltàachí ‘to sell it to’

3D-buy-ITV-DAT

b. ku-tuuy-ye-chi → kùtúuyèechí ‘to meet with’

3D-meet-SOC-DAT

The potential cases of epenthesis between vowels in verbs that we saw in section 6.4 often involve lengthening both of verb and suffix vowels:

(144) a. ku-pe-a → kùpéerá ‘they go from’
3D-go-INS

b. kee-le-ii → kèeléelìi ‘we were saying’
1P-say-IPF

(145) a. ki-paar-ye-ee → kípâaryèerèe ‘they fought with’
DP-fight-SOC-INS

b. ku-it-u-a → kú-ítùunà ‘s/he arrived from’
3D-arrive-VNT-INS

In the nominal system the most obvious instance of vowel lengthening is that found before demonstratives in the singular:

(146) a. ang-wa-ni → àngwàanì ‘this belt’
belt-TH-this

b. ar-a-naanee → árâanáanêe ‘that way’
way-TH-that

c. kari-niina → kârìiníinà ‘that car
car-that

Some plural noun roots show lengthening of their final vowel before the definite suffix *-ka*:

(147) chè - chéeká ‘milk’, ná - néeká ‘goats’, túch - túuká ‘cows’

At the moment I have not been able to make a generalization that covers the changes in length that we have seen in this section.

6.6 Assimilation

In many contexts a short or long *a* assimilates to a preceding *o(o)*:

(148) a. akoonga → ákôongò ‘one’

b. choora-n → chòorón ‘to draw’[41]

draw-DEN

c. cheep-yoos-a → chèepyóosò ‘woman’

FEM-old-TH

d. kor-aat → kòróot ‘blind’

blind-STAT

e. lokor-yaan → lókôryóon ‘fruit’

fruit-SG

f. kor-ta → kórtó ‘the stone’

stone-DF

It does not happen in all cases:

(149) a. sòomán ‘to read’

b. roos-a → róosâ ‘look!’

look-IMP

The process is not found in other Kalenjin dialects and so it is not surprising that we also see variation within Endo.

[41] Borrowed from Swahili *chora* or *chor-* with a suffix *-n* or *-an*.

7 Vowel harmony

Even though vowel harmony is a process involving vowels, and could have been included in Chapter 3, it is treated here in a separate chapter because it is such an important and extensive topic.

As we saw in section 3, the vowels of Endo come in two sets, a −ATR set and a +ATR set:

−ATR	+ATR
a(a)	a̲(a̲)
e(e)	e̲(e̲)
i(i)	i̲(i̲)
o(o)	o̲(o̲)
u(u)	u̲(u̲)

Table 18: Two sets of vowels

Usually, all the vowels of a word belong to one and the same set. As the following two examples show, the vowels of a word are either all −ATR or all +ATR:

(150) a. taakwees-aak → táakwêesàak ‘to greet you’
greet-O2P

b. taakwees-ey-aak → táakwêesàak ‘s/he will greet you’
greet-IPF-O2P

−ATR vowels in a morphologically complex word harmonize to the +ATR vowels:

(151) a. ku-i-taakwees-ey → kùutàakwèesέy ‘s/he is greeting’
3D-2-greet-IPF

b. paay-yaan-ta-i → páayáantêe ‘the old man’
old.men-SG-TH-DF

In other words, one +ATR vowel, like the *e* in (151a) or the *aa* in (151b) makes all the −ATR vowels in the word to become +ATR.

This process of vowel harmony has received a lot of attention in the literature about Kalenjin: descriptive or theoretical discussions can be found in Tucker (1964), Hall et al. (1974), Rottland (1980), Halle and Vergnaud (1981), Rottland (1982), Ringen (1988), Lodge (1995), Local and Lodge (n.d.), Dimmendaal (2002).

In this chapter I will first look at the basic principles of vowel harmony in Endo and then consider some special instances of it as well as troublesome cases where harmony does not apply straightforwardly throughout the whole word or where it might apply even outside the word.

7.1 The basic pattern

Roughly speaking, vowel harmony is a form of assimilation operating over the vowels of a word: one class of vowels imposes one or more of its features (+ATR in this case) on the other class (−ATR), a type of vowel harmony that is known as dominant-recessive: the +ATR vowels are dominant, the −ATR vowels recessive (also: adaptive). A −ATR vowel can become +ATR, but a +ATR vowel can never become −ATR. It seems reasonable then to treat −ATR vowels as unmarked and +ATR vowels as marked (as proposed in Ringen 1988, Lodge 1995, and Local and Lodge n.d. for Kalenjin). I am aware of only one example in Endo (the same that Tucker & Bryan 1964 and Rottland 1982 give for Nandi-Kipsigis en Hall et al. 1974 for Keiyo) where a +ATR vowel seems to become −ATR:

(152) a. rêel ‘white’

b. rêelàchéen ‘white (pl.)’

In isolation the word for ‘white’ is +ATR, but in its plural form, with a suffix, it is −ATR. This plural form is exceptional for a number of reasons. The plural morpheme for adjectives is usually *-een* (section 10.3.2). The plural ending *-e(e)ch* that is common in other Kalenjin adjectives is not found in Endo except in this word and in the

plural forms of *rá* ‘bad’, *mínîng* ‘small’ and *ôow* ‘big’, but always in combination with *-een*:

(153) a. ràachéen or ràachéen ‘bad (pl.)’

b. ménkèechéen ‘small (pl.)

c. èechéen ‘big (pl.)’

Furthermore, the plural morpheme *-een* is +ATR except in the forms *rêelàchéen* and *ràachéen*. Given the singularity and irregularity of this example it does not invalidate the general dominant-recessive pattern of vowel harmony in Endo.

The spreading of +ATR can proceed in both directions, from root to affixes, or from a suffix to the root and prefixes (which is what Halle and Vergnaud 1981 call dominant vowel harmony):

(154) a. kuuyer-a-i → kûuyèrée ‘the horn’

horn-TH-DF

b. melmeel-aan → mélmêelàan ‘to deceive me’

deceive-O1S

(155) a. ngot-wey → ngótwêy ‘spears’

spear-PL

b. ka-par-ey → kàpárèy ‘s/he was killing’

RP-kill-IPF

Prefixes in Endo are always –ATR, something which seems to be common for African ATR vowel harmony languages (Clements 2000).

7.2 'Floating' +ATR

Sometimes a word exhibits a change from –ATR to +ATR, but no morpheme is 'visible'.[42] There are at least two cases where this happens in a more or less systematic way, and a few cases where it is part of an irregular root allomorphy.

One way of forming plurals involves making the vowels of the noun +ATR (in addition to performing other operations, section 10.1.7.3):

(156) a. mákâl - màkáal 'ram(s)'
b. ngályâp - ngàlyéep 'tongue(s)'
c. írìn - ìríin 'root(s)'
d. môorìn - mòoríin 'finger(s)'

In this case we can assume that there is in fact a suffix that carries the +ATR feature and spreads it across the whole word. This suffix does not have segments, but it contributes a unit of length to the last syllable of the word (as we saw in section 3.3) and it changes the tone pattern to Low-(Low)-High.

Another example can be found in plural agent nominalizations (10.1.5). Any verb V can be changed into a plural noun meaning 'people who V' by making the vowels +ATR:

(157)	*Verb*	*Plural Agent Noun*
a.	wál 'to translate'	wál 'interpreters'
b.	táang 'to forge'	kìitáang 'blacksmiths'
c.	túup 'to follow'	túup 'followers'

Here the suffix is the nominalizing suffix that has no other phonological aspects except the +ATR feature and tone.

[42] This is what Tucker (1964:468) calls *Ablaut*, as opposed to *Umlaut*, where a suffix is responsible for shifting the vowels of the root from open to close.

The plural agreement marker on adjectives, which is normally *-a* for predicative and *-een* for attributive adjectives, has a zero +ATR allomorph (although this is very rarely used):

(158) ki-a-meer-aat-0 → kyáamèeráat ‘you were dead (pl.)’
DP-2P-die-STAT-PL

It probably only occurs after the stative suffix *-aat*.

In a number of nouns there is an unexpected shift in tongue root position from −ATR to +ATR:

(159)	a.	éen	éentá	‘(the) river’
	b.	éey	éeytá	‘(the) ox’
	c.	kêel	kéeltâ	‘(the) leg’
	d.	kêet	kéetît	‘(the) tree’
	e.	ngàl	ngàlyâan	‘word(s)’
	f.	píyât	pîyáan	‘excrement(s)’

The suffixes here (the definite suffixes *-ta* and *-it*, and the singulative suffix *-yaan*) are normally −ATR, so they cannot be the source of the morphological forms on the right hand side becoming +ATR. I will assume that this ATR alternation is simply part of an irregular allomorphy involving a few noun roots.

7.3 Neutrality

The basic pattern of ATR vowel harmony in Endo is that one +ATR vowel in a word makes all −ATR vowels to become +ATR too. Some affixes, however, can be described as neutral (or opaque). Two types of neutrality are usually distinguished. First, there are −ATR affixes that do not give in to a dominant +ATR vowel elsewhere in the word; second, there are +ATR affixes that do not or only partially affect −ATR vowels in the word. We will take a closer look at different cases of neutrality.

7.3.1 Neutral prefixes

There are several prefixes that are insensitive to the ATR quality of the word that they combine with, like the verbal prefixes *kaa-* 'emphatic recent past', *kii-* 'emphatic distant past' (10.2.3), and *maa-* 'emphatic negation' (10.2.4):

(160) a. kaa-ku-kiil → kâakúkîil 'it has become ready'
RP!-3D-become.ready

b. ki-kii-ku-chep → kíkîikúchép 's/he had prepared'
DP-DP!-3P-prepare

c. ki-maa-ku-nyooru → kímâakúnyóorú
DP-NG!-3P-find 's/he did not find him/her'

Any material before these prefixes remains unaffected, something that can be clearly heard with the conjunctive prefix:

(161) a. ak-kaa-ku-tala-iitu-ey → àkâakútálâyìitúuy
CO-RP!-3D-peaceful-INC-IPF 'and it has become peaceful'

b. ak-kii-ku-cho → àkîikúchó
CO-DP!-3D-come 'and s/he had come'

c. aku-maa-ku-lar-ey → àkúmâakùlàréy
CO-NG!-3D-shine-IPF 'and it will no longer shine'

In the nominal system we see that this happens with the locative prefix *kâap-* and sometimes with the nominalizing prefix *kaa-*:

(162) a. kaap-tuum → káaptûum 'wedding'
LOC-song

b. kaa-iim-uut → káa-íimûut 'trouble'
NOM-trouble-NOM

b'. kaa-tikaan-a → kàatìkáaná 'advice'
NOM-advise-NOM

It has been suggested (Hall et al. 1974 and Local and Lodge n.d., Dimmendaal 2002) that harmony in the verbal examples is blocked because there are really two separate words. The forms *kaa*, *kii*, and *maa* are not prefixes, but a kind of auxiliaries that take a tenseless verb form as their complement. One piece of evidence for this is that in the third person these three prefixes are always followed by *ku-*, the third person dependent prefix that does usually not combine with other prefixes. The nominal prefix *kâap-* might be an associative form composed of **kaa* 'home' with **-aap* 'of'. Unfortunately, no synchronic or diachronic evidence is available to demonstrate that the nominalizing prefix *kaa-* has a separate status, but a construction where *kaa* is an associative noun with the meaning 'thing of' is at least not impossible.

7.3.2 Neutral clitic-like suffixes

There are also suffixes that always remain −ATR, irrespective of the vowels in the word:

(163) a. cheep-ta-aa → chèetàa 'girl of'
girl-DF-ASS

b. per-a-ik-aa → pérèekàa 'water of'
water-TH-DF-ASS

c. chiich-nyuun → chíinyúun 'my person'
person-my

d. eer-uun-a-ik-chiich → éerúunéchìich 'his/her hands'
hand-PL-TH-DF-his

e. choor-0-iin-ta-i-kay → chóoríintêekáy 'the thief'
steal-NOM-SG-TH-DF-DEM

(164) a. a-weet-ii-aa → áwêetyàa 'I am going'
1S-go-IPF-S1S

b. a-tep-ta-ey-akwaan → átéptáakwàan '(how) you are behaving'
2P-behave-ITV-IPF-S2P

c. nyooru-aa → nyóorwâa 's/he will get me'
get-O1S

d. ki-ma-sur-ey-achaan → kìmàsúréechâan

DP-NG-bite-IPF-O1P ‘s/he would not bite us’

Other suffixes are +ATR, but do not spread this feature backwards to the rest of the word:

(165) a. sira-naanee → sírâanáanêe ‘that dress’

dress-that

b. ayee-tiin-a-ik-chaach → àyèetìinàchàach ‘our mothers’

mother-PL-TH-DF-our

c. ngal-a-ik-pa → ngàlèepà ‘words of’

words-TH-DF-ASS

(166) a. ka-i-kar-aan-nyeen → kéekâráanyèen ‘you have milked me’

RP-2S-milk-O1S-S2S

b. ma-a-kar-iin-nyeen → máakâríinyêen ‘I am not milking you’

NG-1S-milk-O2S-O2S

The neutral suffixes in the examples above are two preposition-like elements (*-aa* and *-pa*, both meaning ‘of’) and pronominal elements (demonstrative, personal, or possessive). It seems likely that all of these suffixes are really more like clitics that originate historically from separate words. They are always last in the word and can also occur independently. If they are still separate words (although cliticized to the noun or verb), then we can understand why they are neutral: they are a vowel harmony domain all by itself.

There are cases where a neutral +ATR suffix (or clitic) *does* seem to spread its feature, but only to the immediately preceding vowel:

(167) a. laak-wa-i-nguung → làakwèengùung ‘your (sg.) child’

child-TH-DF-your

a’. laak-wa-i → làakwée ‘the child’

child-TH-DF

b. ngal-a-ik-kuuk → ngàlèekùuk / ngàlèekùuk
words-TH-DF-your ‘your (sg.) words’

b’. ngàléek ‘the words’
words-TH-DF

c. man-ta-ngwaang → mântàngwàang ‘your (pl.) faith’
faith-DF-your(pl)

c’. man-ta → mântá ‘the faith/truth’
faith-DF

The reverse occurs before −ATR suffixes:

(168) a. koor-a-i-nyuun → kòorèenyùun ‘my area’
area-TH-DF-my

a’. koor-a-i → kòorée ‘the area’
area-TH-DF

b. keel-yen-ik-chiich → kêelyèechìich / kêelyèechìich
leg-PL-DF-its ‘its footprints’

b’. keel-yen-ik → kéelyèek ‘the footprints’
leg-PL-DF

c. poor-ta-nyiin → póortányíin ‘its body’
body-DF-its

c’. poor-ta → póortá ‘the body’
body-DF

Here a morpheme that we would expect to be +ATR because of the noun root, turns out to be −ATR as a result of the suffix that follows it. It is as if all the suffixes of the noun are drawn outside the domain of the word into the domain of clitic. This phenomenon is subject to variation, however.

7.3.3 Neutrality in compounds

Endo has very limited facilities for making compounds. Those that exist are phrasal compounds consisting of a verb with a subject or object noun and often a prefix *kip-*

or *cheep-*. There is no harmony between the two parts of the compound, although there is harmony between the first part and a prefix:

(169) a. saay-sere → sàaysérè 'goodbye'
pray-peace

b. cheep-pet-kwaan → chèepétkwàan 'illegitimate child'
FEM-be.lost-father

c. cheep-reel-kaat → chèerêelkáat 'kind of crow'
FEM-white-neck

d. kip-mukuul-met → kìmùkúulmèt 'human being'
MASC-round-head

Presumably, these compounds have maintained their phrasal structure in some way, and just like vowel harmony does not obtain between a verb and its subject or object it does not obtain here.

7.3.4 Neutrality in plurals

Plural suffixes that are +ATR usually affect the whole word:

(170) a. ngot-wey-ik → ngótwéyîik 'the spears'
spear-PL-DF

b. taman-waak → tàmánwâak 'tens'
ten-PL

c. saang-uut-a-ik → sáangúutêk 'villages'
village-PL-TH-DF

However, there are two plural suffixes *-ooy* and *-oos* that do not spread their feature to the noun root:

(171) a. kipaang-ooy → kìpàangóoy 'snakes'
snake-PL

b. lakam-oos-ya-ik → lákâmóosyék ‘the hills’
hill-PL-TH-DF

Interestingly, only when the vowel of the noun is *o*, does +ATR spread all across the word:

(172) a. cheep-yoos-ooy → chèepyóosóoy ‘women’
FEM-old-PL

b. kikoompa-oos → kìkôompóos ‘cups’
cup-PL

This might be related to the vowel assimilation that applies in these words (see section 6.6):

(173) a. cheep-yoos-a → chèepyóosò ‘woman’
FEM-old-TH

b. kikoompa → kìkôompò ‘cup’
cup-PL

The final *a* becomes *o* because of the preceding *o* in the root.

7.4 Harmony across word boundaries

Sometimes the vowel harmony domain seems greater than the word. The relative pronouns *cháa* and *nyáa* occur with adjectives, but they become *cháa* and *nyáa* before +ATR adjectives:

(174) a. nyáa mánàng ‘small’
b. cháa chàang ‘many, much’
c. nyáa òow ‘big (sg.)’
d. cháa ménkèechéen ‘small (pl.)’

This suggests that the relativizers are maybe prefixes or proclitics of adjectives. Notice however that sometimes *nyaa* occurs with +ATR adjectives:

(175) a. nyáa káràam ‘good’

b. nyáa rà ‘bad’

8 Tone

Endo has three underlying tones (tonemes): high (H), low (L), and falling (F):[43]

(176) a. tány ‘cow’

b. tèr ‘pot’

c. kêet ‘tree’

There is a mid tone that is in conditioned variation with the low tone:

(177) a. tány àkà → tány ākā ‘another cow’

b. sétìim àkà → sétīim ākā ‘another castrated goat’

A sequence of low tones that follows a high tone is ‘pulled up’ to a mid level (M). For some speakers, a high tone following these low tones is pulled up to an extra high level:

(178) cháa tápèes-éen → cháa tápēesə́en ‘wide (pl., attr.)

REL wide-PL

This suggests that a low tone following a high tone starts a new, higher ‘register’.

A rising tone is sometimes heard when a low and a high tone end up on one syllable:

(179) kù-ám → kwăam ‘s/he eats’

3d-eat

It only seems to happen when the vowels of prefix and root merge.

[43] See Creider (1982) for a in-depth study of the nominal tone system of Nandi, which includes a comparison with Endo.Unfortunately, no study has been made of sentential patterns of tone in Endo.

The falling tone can be treated as a sequence of a high and a low tone associated with one syllable. One clear indication of this is the way falling tones alternate with high tones:

(180) a. kêet nyáa òow → kéet! nyáa òow 'a big tree'
tree REL big

b. kêet àkà → kéet àkà 'another tree'
tree other

A falling tone is only falling at the end of an utterance, but when not utterance-finally it is realized as a high tone. The low part of the fall however, is still active, as can be seen from the downstep effect that it has on a following high tone in (180a), which is a common phenomenon in African tone languages.[44] In (180b) the low tone blocks the raising of the low tones of *àkà* to mid level. Notice also the tonal contrasts in the following words:

(181) a. sétìim àkà → sétīim ākā 'another castrated goat'
wether other

b. môorìn àkà → móorìn àkà 'another finger'
finger other

c. kûurúur àkà → kúu!rúur ākā 'another liver'
liver other

Clear differences can be heard in the tonal levels of these three nouns when followed by the word *àkà* 'other'. (181a) has a small step from high to mid, (181b) has a big step from high to low, and (181c) has three small steps. The differences between these words can be explained when we assign an underlying HL melody to *setiim*, a FL melody to *moorin*, and a FH melody to *kuuruur*. The L after H in *setiim* becomes a M. The falling tone F in the other two words is a HL sequence of which only the H is

[44] The level of a downstepped high lies between a mid and a high tone.

pronounced; the L however is floating, keeping the L of *moorin* from raising to M level and causing downstep of the H on the second syllable of *kuuruur*.

Another argument for treating falling tones as HL melodies is the phenomenon of dissimilation that takes place when two high tones end up attached to one syllable:

(182) a. má-ít → mâat 'the fire'
fire-DF

b. kàtá-í → kàtêe 'the thorn'
thorn-DF

This HH sequence is avoided by changing the second tone to L, which then results in a falling tone.

Sometimes high tones on long vowels become falling tones. When this happens exactly is still unclear, but we can see the effect of this rule in the following nouns:

(183) a. chólòn 'coward', írìn 'root', kárìn 'metal', pánàn 'orphan'

b. kâarìn 'name', kûuyèr 'horn', môorìn 'finger', pôonìt 'hole in tree'

These nouns form their plurals by modification of the stem (see section 3.3 and 7.2). The melody then changes to a LH pattern. Whether a noun has a HL or a FL pattern depends on the length of the first vowel.

The following example shows that a high tone can overrule a low tone.

(184) a. kúukà-í → kúukée 'the grandfather'
grandfather-DF

b. wàsà-í → wàsée 'the hatchet'
hatchet-DF

The low tone on the second syllable is replaced by the high tone of the definite suffix.

9 Appendix A: Minimal pairs

This appendix motivates the consonant and vowel phonemes of Endo by showing how they contrast in segmentally identical or analogous environments. The following table shows contrasts between consonants in different positions in the word:

	Initial (#_a)	*Medial (a_a)*	*Final (a_#)*
p	pár 'to pierce'	tápân 'side'	táp 'to light'
t	tár 'to stick'	pátâr 'back'	tát 'to explain'
ch	chár 'to distribute'	ngàchár 'chair'	wách 'to peel'
k	kár 'to close'	psákàr 'pancreas'	nyák 'to surprise'
s	sár 'to snatch'	kàsár 'watchpost'	tás 'to add'
m	már 'to want'	tàmár 'branch'	rám 'to draw'
n	nár 'to grow'	pánàn 'orphan'	rán 'to believe'
ny	nyár 'to chew'	ànyàríl 'I suffer'	kány 'to wait'
ng	ngár 'to slash'	tángât 'soil'	pkáng 'to flash'
l	lár 'to burn'	málàt 'reptile'	kál 'to click'
r	rár 'to tell'	márâl 'thirst'	nyár 'to chew'
y	yáp 'to hew'	tàyáng 'gaze'	táy 'to refuse'
w	wár 'to fear'	káwât 'poison'	nyáw 'to emaciate'

Table 19: Consonant contrasts

In the first column we see that minimal pairs with an initial contrast can be found for all the consonants except for *y*, because the word *yar* does not seem to exist. But additional minimal pairs can be found that show that *y* is a separate phoneme:

(185) yáp 'hew' contrasts with páp 'cobra', táp 'to light', sáp 'follow', náp 'sew' and láp 'hit'; yáat 'open' contrasts with cháat 'thigh', kâat 'neck', ràat 'stone'; yáar 'other side' contrasts with máar 'show', nyáar 'treat', ngáar 'grind' and wáar 'mix'

In the second column we can see how the consonant phonemes make contrast between two vowels (between two *a*s). The consonants also contrasts word-finally in near-minimal words, as seen in the third column.

Vowels contrast in tongue root position (Table 20), length (Table 21) and quality (Table 22 for short vowels and Table 23 for long vowels). Notice that in Table 22 and Table 23 –ATR vowels are in the upper right-hand corner and +ATR vowels in the lower left-hand corner. As we discussed in section 3.4.3 not all speakers make the contrasts shown in Table 22 between the +ATR vowels *a̲*, *e̲* and *o̲*.

	–ATR	*+ATR*
a	sáp ‘to follow’	s̲áp ‘to live’
i	ríp ‘to hide’	r̲íp ‘to run’
o	tókól ‘container’	t̲ók̲ôl ‘all’
u	mùr ‘rats’	m̲úr ‘to cut’
aa	ráar ‘to stir’	r̲áar ‘to laugh’
ee	sèes ‘acacia’	s̲èes ‘trumpet’
ii	sìir ‘nail’	s̲îir ‘skin cloth’
oo	róor ‘to cook’	r̲ôor ‘harvested field’
uu	múut ‘to break’	m̲ûut ‘five’

Table 20: Tongue root contrasts

	Short	*Long*
a	chám ‘to love’	cháam ‘to whisper’
a̲	sa̲p ‘to get well’	sa̲ap ‘to heal’
e̲	pe̲l ‘to defeat’	pè̲e̲l ‘elephants’
i	líng ‘to sink’	líing ‘to delay’
i̲	si̲ch ‘to be born’	si̲i̲ch ‘eagles’
o	kór ‘stone’	kôor ‘long’
o̲	mo̲sô̲k ‘widow’	mò̲so̲o̲k ‘widows’
u	mút ‘to bring’	múut ‘to break’
u̲	mu̲r ‘to cut’	mû̲ur ‘skin’

Table 21: Vowel length contrasts

	a	e	i	o	u
a			lít ‘sharpen’ lát ‘castrate’	ngót ‘spear’ ngát ‘stand’	ngút ‘spit’ ngát ‘stand’
e	pa̲r ‘killers’ pe̲r ‘water’				
i	sa̲p ‘heal’ si̲p ‘start’	pe̲r ‘water’ pi̲r ‘beat’		sór ‘attract’ sír ‘write’	lím ‘listen’ lúm ‘wrap’
o	wa̲l ‘translators’ wo̲l ‘place’	pe̲l ‘defeat’ po̲l ‘shout’	tíng ‘have’ to̲ng ‘finished’		súr ‘bite’ sór ‘attract’
u	ru̲m ‘murder’ ra̲m ‘drawers’	sè̲t ‘gourd’ su̲t ‘lift’	rík ‘mate’ rú̲k ‘tie’	tól ‘explode’ tù̲l ‘hill’	

Table 22: Vowel quality contrasts of short vowels

	aa	ee	ii	oo	uu
aa		péel ‘roast’ páal ‘tear’	chíil ‘smoke’ cháal ‘leave’	tóor ‘push’ táar ‘chew the cud’	tûur ‘black’ táar ‘chew the cud’
ee	ráar ‘laugh’ réer ‘suckle’		líit ‘draw a line’ léet ‘plait’	kôong ‘eye’ kéeng ‘peel’	púus ‘breathe’ pées ‘split’
ii	sáap ‘heal’ síip ‘sharpen’	réem ‘to delay’ ríim ‘to roof		sôos ‘swamp’ síis ‘be quiet’	rúur ‘hum’ ríir ‘cry’
oo	ráar ‘laugh’ rôor ‘harvested field’	réer ‘suckle’ rôor ‘harvested field’	ríip ‘to guard’ róop ‘join’		tûur ‘black’ tóor ‘push’
uu	kàar ‘women’ kúur ‘call’	sèes ‘trumpet’ sùus ‘grass’	kíir ‘inquire’ kúur ‘call’	kòor ‘land’ kúur ‘call’	

Table 23: Vowel quality contrast of long vowels

10 Appendix B: Morphological compendium

The morphology of Endo is extensive and complex and therefore the overview given here can only be relatively brief and superficial, serving as a reference section for morphological notions mentioned in the main text. It is also restricted in that it only deals with the segmental aspect of Endo morphology. Tone plays an important role in the marking of case and certain verbal categories, but I have not been able to get a good picture of these areas.

10.1 Nouns

The general morphological structure of nouns is as follows:

Prefixes			*Root*	*Suffixes*					
Locative	Gender	Nominalization		Nominalization	Thematic suffixes	Number	Definiteness	Association	Demonstrative suffixes	Possessive suffixes

Table 24: Morphological structure of the noun

10.1.1 Locative prefix

The prefix *kaap-* 'place of' (LOC) is first of all used to derive locative nouns from nouns, but also collective nouns for age and kinship groups and other nouns:

(1) a. tuum 'ceremony' kaaptuum 'place of ceremony'
b. kuuka 'grandfather' kaapkuuka 'father's family'
c. chaang 'many' kaapchaang 'constellation of stars'

10.1.2 Gender prefixes

The gender prefixes *kip-* 'masculine' (MASC) and *cheep-* 'feminine' (FEM) are primarily used to form person nouns and animal names, but also inanimates (sometimes in combination with a suffix). The base does often not exist separately.

(2)
a.	roop 'rain'	kiroop 'boy born during rainy season'
b.	saakit 'herbs'	cheepsaakityaan 'herbalist'
c.	leekwa '?'	kipleekwa 'hare'
d.	marmar 'striped'	cheemarmar 'zebra'
e.	sakar '?'	kipsakar, psakar 'pancreas'
f.	kaalaas '?'	cheepkaalaas 'haze'

10.1.3 Nominalizing prefixes

When verbs of class 2 (see section 10.2.1) are nominalized, the prefixes *kaa-* and *kii-* (NOM) are used, almost always in combination with a nominalizing suffix:

(3)
a.	pkaat 'think'	kaapkaatuut 'thoughts'
b.	root 'to sweat'	kiiroot 'sweat'

10.1.4 Combinations of prefixes

Combinations of the three nominal prefixes are possible in the order LOC - MASC/FEM - NOM:

(4)
	LOC	MASC/FEM	NOM	
a.	kaap-	kip-		tuura → kaakiptuura 'spec. age-set'
b.	kaap-		kii-	rwaak → kaapkiirwaak 'council place'
c.		cheep-	kii-	nchoo → cheepkiincho 'jackal'

10.1.5 Nominalizing suffixes

When we turn to the suffixal morphology of nouns we first find nominalizing suffixes. Most nominalizations (NOM) work on verbs, forming nouns that refer to the action, agent, instrument or result associated with the verb:

(5)	a.	nareek 'be sad'	nareeka 'sadness'
	b.	neet 'teach'	kiineetat 'teaching'
	c.	kar 'to close'	karwa 'fence'
	d.	yaayta 'send'	kiiyaaytaar 'mission'
	e.	sap 'live'	sapaan 'life'
	f.	choor 'steal'	choor 'thieves'[45]
	g.	raak 'to patch'	raakey 'patches'
	f.	yiim 'to trouble'	kaayiimuut 'distress'
	h.	rat 'to tie'	ratan 'prisoner'

Some of the nominalizing suffixes derive singular nouns, others derive plural nouns, from which a singular must be derived by means of a singulative suffix (see section 10.1.7.2). There are also suffixes that derive nouns specifically from adjectives or from other nouns:

(6)	a.	kartit 'cold'	kartiitya 'coldness'
	b.	nwaak 'short'	nwaakin 'shortness'
	c.	tuur 'black'	cheeptuuya 'black female animal'
	d.	suuy 'misers'	suuynan 'selfishness'
	e.	choorwo 'friend'	choorwoonti 'friendship'

Systematic conversion (zero-derivation) does not exist, but there are cases where noun and verb have identical forms, like *pan* 'a curse' versus *pan* 'to curse'. The direction of derivation cannot easily be determined.

[45] The 'suffix' here consists of just a +ATR feature spreading over the vowels of the word.

10.1.6 Thematic suffixes

A special feature of the Kalenjin languages, including Endo, is the existence of a class of *thematic suffixes* (TH) or *class suffixes* (Larsen 1986) that show up typically before other suffixes without making a clear semantic contribution of their own. The noun *kuukaay* 'crow', for example, gets a thematic suffix *-a* before the definite suffix *-i*, the associative suffix *-V*, singular demonstrative suffixes like *-ni* 'this', and in the nominative case (expressed by a tonal pattern that is not represented here):

(7) a. kuukaay-a-i → kuukaayee 'the crow'
b. kuukaay-a-V → kuukaayaa 'crow of'
c. kuukaay-a-ni → kuukaayaani 'this crow'
d. kuukaay-a → kuuyaaya 'crow (nom.)'

In addition to *-a* we also find the following thematic suffixes with singular nouns:

(8)	-u	taay 'front'	taayuu (taay-u-i) 'the front'
	-i	saayit 'time'	saayitii (saayit-i-i) 'the hour'
	-ya	nkok 'chicken'	nkokyee (nkok-ya-i) 'the chicken'
	-ta	saan 'husband'	saantee (saan-ta-i) 'the husband'
	-ti	pukan 'guitar'	pukantii (pukan-ti-i) 'the guitar'
	-wa	tul 'hill'	tulwee (tul-wa-i) 'the hill'
	-na	siir 'nail'	siirnee (siir-na-i) 'the nail'

The thematic suffixes can follow the roots of certain nouns, but also some derivational suffixes (like *-uut*) and singulative suffixes (like *-yaan*):

(9)	-ya	kar-uut 'obstacle'	karuutyee 'the obstacle'
	-ta	mur-yaan 'rat'	muryaantee 'the rat'

In plurals we see a subset of the thematic suffixes found with singular nouns:

(10)	-a	mur ‘rats’	mureek (mur-a-ik) ‘the rats’
	-i	chaak ‘cattle’	chaakiik (chaak-i-ik) ‘the cattle’
	-ya	kenyiis ‘years’	kenyiisyek (keny-iis-ya-ik) ‘the years’
	-wa	suus ‘grass’	suusweek (suus-wa-ik) ‘the grass’
	-u	kaar ‘women’	kaaruuk (kaar-u-ik) ‘the women’

They follow the plural noun root or a nominalizing or plural suffix. In contrast to the singular thematic suffixes, the presence of the plural thematic suffixes seems to be based on phonological length considerations.

It is important to make a distinction between two kinds of singular nouns: *thematic nouns* and *non-thematic nouns*. All the nouns that take thematic suffixes are thematic nouns, but also almost all polysyllabic nouns that end in a short vowel. For example, *kuukaay* ‘crow’ and *eema* ‘tent’ are both thematic nouns. Characteristic for these nouns is that the definite suffix takes the form *-i*, that the associative suffix can be *-V* and that the demonstrative suffixes have an initial *n*, all following after the vowel of the thematic suffix or the root:

(11)	kuukaay-a ‘crow’	eema ‘tent’
	kuukaayee ‘the crow’	eemee ‘the tent’
	kuukaayaa ‘crow of’	eemaa ‘tent of’
	kuukaayaani ‘this crow’	eemaani ‘this tent’

All nouns that end in a consonant and do not take a thematic suffix are non-thematic nouns. These nouns take the definite suffix *-it* or *-ta*, the associative suffix *-pa* and demonstrative suffixes without an initial *n*, all immediately after the root:

(12)	chiich ‘person’	met ‘head’
	chiita ‘the person’	metit ‘the head’
	chiipa ‘the person of’	metpa ‘the head of’

chiichi ‘this person’ meti ‘this head’

10.1.7 Number

10.1.7.1 The singular-plural distinction

The number of a noun can be determined from its agreement pattern, independently of the internal morphological structure of the noun. None of the nouns *roop* ‘rain’, *chaayi* ‘tea’, *kipaw* ‘rhino’ and *peel* ‘elephants’ has any internal marking for number. Nevertheless, they show their number in the forms of the relative pronouns and adjectives they combine with. This is illustrated here with the two forms for ‘other’, *aka* in the singular and *walak* in the plural:

(13)	a.	roop aka	‘other rain’	roop is singular
	b.	chaayi walak	‘other tea’	chaayi is plural
	c.	kipaw aka	‘another rhino’	kipaw is singular
	d.	peel walak	‘other elephants’	peel is plural

In the same way we can determine the number of nouns with inflection:

(14) a. kenyiis walak ‘other years’
year-PL other.PL

b. kaaraakwa aka ‘another fish
fishes-SG other.SG

c. ngalyaanteenyuun aka ‘my other word’
words-SG-TH-DF-my other.SG

d. lokooyichu walak ‘this other news’
news-DF-these other.PL

This tells us that *kaaraakwa* and *ngalyaanteenyuun* are singular while *kenyiis* and *lokooyichu* are plural, independently of their internal morphological structure.

Most noun roots are intrinsically singular, but there are relatively many that are intrinsically plural. The kind of nouns that predominate in this class are mass nouns

(like *chaayi* ‘tea’), names for small animals occurring in large numbers (like *toor* ‘ants’), names for trees (like *saasuur* ‘wild banana’) and names for age-sets and other groups of people (like *paay* ‘old men’). In addition there are nouns that mark both singular and plural, like *kipookityaan* ‘drunkard’ versus *kipookitiis* ‘drunkards’, with the singular suffix *-yaan* in the singular and the plural suffix *-iis* in the plural.

10.1.7.2 Singulative suffixes

A singulative suffix (SG) is a number suffix that takes a plural noun and turns it into a singular noun that denotes individual members or particles of the plural. Here are some examples:

(15)	-yaan	saakit ‘medicine’	saakityaan ‘unit of medicine’
	-iin	chumpa ‘Europeans’	chumpiin ‘European’
	-wa	taraak ‘cedars’	taraakwa ‘cedar’
	-ta	pool ‘clouds’	poolta ‘cloud’
	-waan	suus ‘grass’	suuswaan ‘patch of grass’
	-wa	taalim ‘grasshoppers’	taalimwa ‘grasshopper’
	-ka	kaar ‘women’	kaarka ‘woman’
	-a	kweer ‘shoes’	kweera ‘shoe’

The first three singulatives are very common, the others are rare and sometimes restricted to only one plural noun stem.

10.1.7.3 Plural suffixes

Endo has a rich inventory of plural suffixes (PL). Phonologically we can distinguish between suffixes of the form *-CV(:)C* that occur with non-thematic noun stems and *-V(:)C* suffixes that mostly go with thematic noun stems. Some examples of non-thematic plural suffixes are:

(16)	a.	kipaw ‘rhino’	kipawtiin ‘rhinos’

b. iit ‘ear’ iitin ‘ears’
c. ngot ‘spear’ ngotwey ‘spears’
d. taman ‘ten’ tamanwaak ‘tens’
e. oor ‘way’ oortin ‘ways’
f. supeen ‘ewe’ supeentaan ‘ewes’
g. poor ‘body’ poorwaan ‘bodies’
h. sapaan ‘live’ sapaanwa ‘lives’

The first plural *-tiin* is the default plural in several respects (productive, used for borrowed nouns), the other non-thematic plurals are much more limited in their distribution, some of them being even restricted to only one or two nouns.

Thematic plural suffixes occur after noun stems that have a vowel, either overtly or covertly:

(17) a. wiiki ‘week’ wiikiis ‘weeks’
b. eer(u) ‘hand’ eeruun ‘hands’
c. choorwo ‘friend’ choorweey ‘friends’
d. kepen(a) ‘hole’ kepenaat ‘holes’

The vowel of these suffixes merges with the final vowel of the noun stem. In addition to these monosyllabic suffixes we also find a few disyllabic suffixes: *par-eetin* ‘fields’, *koor-aatin* ‘countries’, and *lep-iisey* ‘hips’, but these are quite rare.

Another productive way of making plurals (especially used for body parts) is illustrated in the following examples:

(18) a. takat ‘chest’ takaat ‘chests’
b. mukuler ‘heart’ mukuliir ‘hearts’
c. moorin ‘finger’ mooriin ‘fingers’
d. sosoy ‘lung’ sosooy ‘lungs’
e. kulkul ‘armpit’ kulkuul ‘armpits’

The plural is expressed here by means of internal modifications in the noun root, consisting of lengthening of the vowel of the last syllable, change to advanced tongue root and change in tone pattern. Finally, there are suppletive and irregular plurals, like:

(19)	a.	araan ‘goat’	na ‘goats’
	b.	tany ‘cow’	tuch ‘cows’
	c.	chiich ‘person’	piich ‘persons’
	d.	cheeta ‘girl’	tiipin ‘girls’
	e.	kir ‘thing’	tukun ‘things’
	f.	kaaw ‘village’	keestaan ‘village’

10.1.8 Definiteness

Endo has definite suffixes (DF) on the noun, *-i(t)* or *-ta* for singular and *-ik* or *-ka* for plural. In Endo these mark roughly the same semantic category of contextual ‘familiarity’ as definiteness in many other languages. However, in most other Kalenjin languages the ‘definite’ form has become the unmarked form of the noun and the semantic or pragmatic function is much more difficult to define.

In the singular, *-i* is used with thematic nouns, merging with the final vowel, *-ta* and *-it* are used with non-thematic nouns (but all three forms come from the same Kalenjin form **-ita*, Rottland 1982):

(20)	a.	cheepyooso ‘woman’	cheepyoosee ‘the woman’
	b.	eer(u) ‘hand’	eeruu ‘the hand’
	c.	tokol ‘container’	tokolta ‘the container’
	d.	kaat ‘neck’	kaatit ‘the neck’

In the plural the suffix is mostly *-ik* ; *-ka* is restricted to a handful of nouns:

(21)	a.	roopiya ‘money’	roopiyeek ‘the money’
	b.	kaar ‘women’	kaaruuk ‘the women’
	c.	kamaswaak ‘side’	kamaswaakik ‘the sides’

d. che ‘milk’ cheeka ‘the milk’

10.1.9 Association

An associative suffix (ASS) is a suffix with the meaning ‘of’ that connects the noun with the following noun in an associative (genitive) relation. There are three associative suffixes in Endo, the suffixes *-pa*, *-V* (i.e. vowel lenghthening) and *-aa*:

(22)

-pa	laakook ‘the children’	laakoopa ‘the children of’
-V	sira ‘cloth’	siraa ‘the cloth of’
-aa	saantee ‘the husband’	saanteetaa ‘the husband of’

The suffix *-pa* comes after singular non-thematic noun stems and after definite plurals. The form *-aa* only follows definite nouns.[46] Lengthening of the final vowel to indicate association is mainly restricted to singular thematic nouns.

10.1.10 Demonstrative suffixes

There is an elaborate system of demonstrative suffixes (DEM) in Endo, as shown in the following table:

		Singular	*Plural*
Proximal	*Nonemphatic*	-ni	-chu
	Emphatic	-nyee	-chwee
		-nyeenyi	-chweechu
		-nyeera	-chweera
Medial	*Nonemphatic*	-naan(a)	-chaach(a)
	Emphatic	-naanee	-chaachee
Distal	*Nonemphatic*	-niin(a)	-chuuch(a)
	Emphatic	-niinee	-chuuchee

Table 25: Demonstrative suffixes

[46] Before *-aa* the definite suffix *-i* has maintained its original final *t* (section 5.3.2.2).

The non-emphatic forms can be analyzed as consisting of three parts: (i) an agreement element (*-n* or *-ny* for singular and *-ch* for plural), (ii) a deictic distance element (*-i*/*-u* for proximal, *-aa* for medial, *-ii*/*-uu* for distal), (iii) an appendix *-n(a)*/*-ch(a)* for non-proximal forms. The forms that are called 'emphatic' all share a formal element *ee* added to the nonemphatic forms, sometimes with additional reinforcements in the proximal forms.

The plural demonstrative suffixes usually follow the definite form but a few nouns take the demonstrative suffixes immediately after their stem, like *muren* 'men':

(23) a. keetiik 'the trees' keetiichu 'these trees'
b. lokooyik 'the news' lokooyichaachee 'that news'
c. muren 'men' murechu 'these men'

The singular demonstrative suffixes do not follow the definite suffix but the thematic suffix or a vowel (with thematic nouns) or the stem (with non-thematic nouns):

(24) a. pereet(u) 'day' pereetuuni 'this day'
b. kari 'car' kariiniina 'that car'
c. wol 'place' woliina 'that place'

The demonstrative suffix *-kay* 'that, those' stands apart from the other demonstrative suffixes. It goes with both singular and plural definite nouns:

(25) a. keetit 'the tree' keetikay 'that tree'
b. cheepyoosook 'the women' cheepyoosookay 'those women'

It is primarily used in an anaphoric way, as a way to strengthen the definiteness of the noun.

10.1.11 Possessive suffixes

Here are the more common possessive suffixes used in Endo:

	With singular nouns		*With plural nouns*	
	Singular possessor	*Plural possessor*	*Singular possessor*	*Plural possessor*
First person	-nyuun	-nyaan	-chuuch	-chaach
Second person	-nguung	-ngwaang	-kuuk	-kwaak
Third person	-nyiin	-ngwaang	-chiich	-kwaak

Table 26: Possessive suffixes

It is possible to reduce these forms to a combination of more basic elements or features (Rottland 1982:111). Rottland suggests that the repetition of the first and last consonant might have resulted from a reduplication process, e.g. the form *-chuu* 'my (with plural nouns)' is reduplicated *-chuuchuu* and then truncated to *-chuuch*. A final *ny* is simplified to *n*: *-nyuu* → *-nyuunyuu* → *-nyuuny* → *-nyuun*. The nature of the initial consonant is determined, like with the relative and demonstrative pronouns, by number agreement: it is *ny* with singular nouns and *ch* with plural nouns. This leads to the following schematic overview, in which REDUP stands for the reduplicated part:

	Singular possessor	*Plural possessor*
First person possessor	{ny,ch}-uu-REDUP	{ny,ch}-aa-REDUP
Second person possessor	{ny,ch}-wuu-REDUP	{ny,ch}-waa-REDUP
Third person possessor	{ny,ch}-ii-REDUP	{ny,ch}-waa-REDUP

Table 27: The structure of possessive suffixes

In this way we can isolate the possessor itself, separate from the agreement element and reduplication. The *w* can be held responsible for the initial palatal (*ny* or *ch*) becoming nasal (*ng* or *k*, respectively), as a form of assimilation of place (e.g. nywaa → ngwaa). The *w* drops out when a homorganic vowel follows (ny-wuu → ngwuu →

nguu).[47] We can see that a high vowel *i* or *u* is characteristic for singular possessors and a low vowel *a* for plural possessors.

The possessive suffixes usually follow the definite form of the noun, with some exceptions:

(26) a. kitookii 'the bed' kitookiinguung 'your (sg.) bed'
b. poorta 'the body' poortanyiin 'his body'
c. roopiyeek 'the money' roopiyeekuuk 'your (sg.) money'
d. apaa 'father' apaanyuun 'my father'
e. piich 'people' piichuuch 'my people'

10.2 Verbs

The schematic morphological structure of verbs is as indicated in the following table:

Prefixes						*Root*	*Suffixes*			
Conjunction	Tense	Negation	Phase	Motion	Person		Derivational suffixes	Imperfective / Imperative	Object suffixes	Subject suffixes

Table 28: Morphological structure of the verb

I will first say something about morphological aspects of the verb root before turning to an overview of prefixes and suffixes.

10.2.1 Verb roots

There is one productive and regular process of verbal reduplication. This process makes use of a linking vowel *-aa-*. The reduplicated verb refers to a repetition of the event of

[47] The sequences *Cyi(i)* and *Cwu(u)* do not occur in Endo.

the base verb ‘keep V-ing, V several times’, but it may also have acquired special meanings on the basis of this repetitive core meaning:

(27) a. kul ‘bend’ kulaakul ‘zigzag’
b. nyar ‘chew’ nyaraanyar ‘keep chewing’
c. lar ‘burn’ laraalar ‘itch’
d. sak ‘split’ sakaasak ‘tear in several pieces’
e. til ‘cut’ tilaatil ‘chop’

The direct type of reduplication, without the linking vowel *-aa-*, is much less regular and productive. The base often does not occur separately, and if it does, then the meaning of the reduplication is not always one of repetition of the event. Nevertheless, in most cases these reduplicated verbs express events that are either extended in time and space or more intense than events expressed by non-reduplicated verbs.

There are three cases in which a verb root has different forms for singular and plural, as seen in the following three paradigms:

Gloss	*Person*	*Singular*	*Plural*
‘come’	1	achoo ‘I come’	keepkaa ‘we come’
	2	ichoo, ‘you come’	apkaa ‘you come’
	3	kucho ‘s/he comes’	kupka ‘they come’
‘go’	1	awo ‘I go’	keepa ‘we go’
	2	iwo ‘you go’	apa ‘you go’
	3	kuwo ‘s/he goes’	kupa ‘they go’
‘run’	1	arip ‘I run’	amwer ‘you run’
	2	irip ‘you run’	keemwer ‘we run’
	3	kuurip ‘s/he runs’	kumwer ‘they run’

Table 29: Suppletive number marking in verbs

All these are motion verbs that assume an implicit spatial reference point (e.g. the position of the speaker) and the subject of the verb is moving towards that point (‘coming’) or moving away from it (‘going’ and ‘running’).

As we can already see in the paradigm above, some verb roots have two or more different forms for the root, one or two *long forms* and one *short form*. There are about ten verbs like this:[48]

Long root form	*Short root form*	*Gloss*
choon	cho	‘come (sg.)
pkaan	pka	‘come (pl.)’
weer/weet	wo	‘go (sg.)’
peer/peet	pe	‘go (pl.)’
meer	me	‘die’
mwaar	mwa	‘tell’
saay	sa	‘pray’
roos/root	ro	‘see’
leel	le	‘say’
ten	te	‘put’

Table 30: Long and short verb roots

It seems likely then that the longer form is basic and the shorter form derived from it by a process of truncation. Simplifying matters somewhat we can say that the short form is used word-finally with the third person.

When no suffix follows, short open roots (both regular and irregular) can be marked for non-third person in two ways. Most verbs lengthen the vowel, some irregular verbs use the long form:

[48] Notice that some verbs are given in this section with the underlying or original short *e* (3.4.1), in order to more clearly represent the morphological patterns.

First person	*Second person*	*Third person*	*Gloss*
achoo(n)	ichoo(n)	kucho	‘come’
keepkaa(n)	apkaa(n)	kupka	‘come’
ameer	imeer	kume	‘die’
amwaa	imwaa	kumwa	‘say’
aree	iree	kure	‘drink’

Table 31: Person marking in verb roots

As in other Nilotic languages every verb in Endo belongs to one of two verb classes, that are traditionally called class 1 and class 2. The number of class 1 verbs in Endo is almost twice as large as the class 2 verbs. The main phonological characteristic of class 2 verbs is an initial vowel *i-* (2 in the glosses) that only shows itself in the lengthening and colouring of certain verbal prefixes:

(28) a. ki-ma-i-nket → kimeenket ‘s/he didn’t know’
DP-NG-2-know

b. ku-i-taakwees-ey → kuutaakweesey ‘to greet’
3D-2-greet-IPF

The meaning difference between the two classes of verbs is much harder to pin down. The impression is that class 2 verbs are predominantly agentive, in the sense that their subject instigates or controls the event, and transitive. Non-agentive, intransitive class 2 verbs, like *ntis* ‘to drizzle’ are quite rare.

10.2.2 Conjunction prefixes

Conjunction prefixes are those prefixes that coordinate or subordinate the verb to what precedes it. There is a prefix for coordination (CO, *ak-* ‘and’), for purpose (PU, *si-* ‘so that’), and one for condition (CN, *na-* ‘if’):

(29) a. ak-a-yir → akaayir ‘and I do’
CO-1S-do

b. si-ku-sowu → sikusowu ‘so that s/he knows’

PU-3D-know

c. na-a-taakwees → naataakwees ‘if you (pl.) greet’

CN-2P-greet

10.2.3 Tense prefixes

Endo has a prefix *ki-* for distant past (DP) and *ka-* for recent past (RP, ‘just’, ‘earlier today’):

(30) a. nkaa keny kimii laakwa nyaa manang

in year DP-be child REL small

‘Long ago there was a little child’

b. kakituuyeechaan een

RP-1P-meet-SOC-S1P river

‘We met at the river’

Both tense prefixes have long opaque variants (DP! and RP!):

(186) a. kiikuma laakwaa ngetuny

DP!-3D-die child-ASS lion

‘The child of Lion has died’

b. nee kaakwaap

if RP-3I-take

‘if it has been taken

The difference in meaning between the short and long tense forms is not clear. Two tense prefixes can be combined to express a pluperfect meaning. The first morpheme is *ki-*, the second *kii-* or *kaa-*:

(31) a. piich chaa chaang kikiikulukurta kimakeet

people REL many DP-DP!-3D-swallow-ITV hyena

‘many people that the hyena had swallowed’

b. kikaakuteeng eeni
DP-RP!-3D-dry.up river-this
'This river had dried up'

The double tense marking is interpreted as a past in a past.

10.2.4 Negation prefixes

The negation prefix in Endo is expressed by *ma-* (NG) or its emphatic variant *maa-* (NG!):

(187) a. ma-mii → mamii 's/he is not'
NG-be

b. ki-maa-ku-i-ro → kimaakuuro 's/he did not see'
DP-NG!-3D-2-see

A special cases is the plural imperative with negation, in which we find a person marker *before* and *after* the negation prefix:

(32) a-ma-a-pa → amaapa 'don't go (pl.)!'
2P-NG-2P-go

10.2.5 Phase prefixes

The phase prefixes *-ta* 'still' *taama-* 'not yet' and *sip-* 'already' express in what stage (or phase) the activity is that corresponds with the verb at a particular moment of time.

(33) a. ki-ta-ku-sap-aat → kitakusapaat 's/he was still alive'
DP-PH-3D-live-STAT

b. taama-ku-rur → taamakurur 'it was not yet ready'
PH-3D-ripe

c. mata-ku-riir → matakiriir 's/he did not cry anymore'
NG-PH-3D-cry

d. sip-ku-choon-ey → sipkuchooney 's/he will come already, first'
PH-3D-come-IPF

10.2.6 Motion prefixes

The motion verbs for 'come' and 'go' can, in a reduced form, be used as motion prefixes:

	Singular	*Plural*
'come'	cha-	pka-
'go'	wa-	pa-

Table 32: Motion prefixes

(34) a. cha-ku-nam → chakunam 'he came to take'
MOT-3D-take

b. pka-a-riip → pkaariip 'you (pl.) came to guard'
MOT-2P-guard

c. i-wa-i-yir-ey → iweeyirey 'you (sg.) are going to do'
2S-MOT-2S-do-IPF

d. pa-kee-ro → pakeero 'we went to see'
MOT-1P-see

10.2.7 Person prefixes

The person prefixes of Endo are given in Table 33:

		Singular	*Plural*
First person		a-	kee-, ki-
Second person		i-	a-
Third person	*Dependent*	ku-	
	Impersonal	kee-, ku-	

Table 33: Person prefixes

As far as I could see, *kee-* and *ki-* (for 1P) and the impersonal forms *kee-* and *ku-* are free variants. There are tonal distinctions among the prefixes that are not represented here. The three single-vowel prefixes do not merge with the initial *i-* of class 2 verbs, but the *k*-initial prefixes do:

(35) 1S a-i-nket → anket 'I know'
1S-2-know

1P ka-ki-tuuya-ey-achaan → kakituuyeechaan 'we met'
RP-1P-meet-IPF-1P

2S ka-i-teer → keeteer 'you have listened'
RP-1S-listen

2P ki-a-yir → kyaayir 'you (pl.) have done'
DP-2P-do

3D ku-i-neet → kuuneet 'they teach'
3D-2-teach

3I kee-ap → kyaap 'it was taken'
3I-take

The third person can remain unmarked or have the prefix *ku-* (3D) when the verb is embedded under another verb or when it is part of a narrative sequence. The impersonal prefix corresponds to what in English would be indicated with impersonal 'they', 'you' or 'one', but it is often more naturally translated with a passive.

10.2.8 Derivational suffixes

In the context of verb morphology I use the term derivation for those morphological processes that create a verb from a noun or adjective or that change the valency or Aktionsart of a verb. The verbal suffixes that are not derivational are the imperfective, imperative and subject and object marking.

Term	*Forms*
Denominal (DN)	-(a)n
Inceptive (INC)	-iit(u)
Causative	root modification
Stative	-ak
Sociative (SOC)	-ye, -yeer
Essive (ESS)	-iisye, -iisyeer
Ventive (VNT)	-u, -uun
Itive (ITV)	-ta, -taar
Dative (DAT)	-chi, -chin
Ambulative (AMB)	-aata and -aanu
Instrumental (INS)	-a or -ee

Table 34: Verb derivation

10.2.9 Denominal suffix

The suffix *-(a)n* derives verbs from nouns:

(36) a. chaalwaak 'sin' chaalwaakan 'to sin'
b. takal 'evil' takalaan 'to do evil'
c. liima 'morning grazing' liimaan 'to take for morning grazing'

The form is *-an* after long vowels and *-aan* after short vowels (a case of length dissimilation, section 6.5.2). It is also used when verbs are borrowed from Swahili:

(37) a. liipan 'pay' (from *lipa*)
b. cheleewan 'be late' (from *chelewa*)

10.2.10 Inceptive suffix

The inceptive suffix *-iitu* derives verbs of class 1 with an inceptive meaning from adjectives:

(38) a. chaang ‘much’ chaangiitu ‘become much’
b. paypay ‘happy’ paypayiitu ‘become happy’
c. tiliil ‘clean’ tililiitu ‘become clean’

Notice that as a result of length dissimilation the long vowel of the syllable immediately preceding the suffix is shortened unless the adjective is monosyllabic (section 6.5.1). When no other suffix follows, the final *u* is deleted in the third person:

(39) ki-koroom-iitu → kikoromiit ‘he became fierce’
DP-fierce-INC

10.2.11 Causatives

Class 2 verbs can be derived from adjectives or class 1 verbs in a process which involves lengthening of the vowel of the last syllable, if that vowel is short:

(40) a. kuskus ‘light’ (i-)kuskuus ‘make light’
b. tiliil ‘clean’ (i-)tiliil ‘make clean’
c. ngarak ‘be happy’ (i-)ngaraak ‘make happy’
d. ngeet ‘stand’ (i-)ngeet ‘make stand’

The meaning of the derived class 2 verb is always the causative of the adjective or class 1 verb from which it is derived.

10.2.12 Stative suffix

The suffix *-aka* is mainly restricted to the verbs *ir* ‘do’ and *muuk* ‘can’:

(41) a. ir ‘to do’ iraka ‘to happen’
b. muuk ‘to be able’ muukaka ‘to be possible’

The resulting verbs have a special meaning. The object of the verb becomes the subject (Rottland 1982) and the agent is completely obviated.

10.2.13 Sociative suffix

If an action is done by a group of people together or reciprocally this can be indicated by the sociative suffix *-ye* (SOC):

(42) a. sap-ye → sapya 'get well (pl.)'
get.well-SOC

b. piryaang-ye → piryaancha 'be satisfied (pl.)'
be.satisfied-SOC

c. cham-ye → chaamnya 'reconcile'
love-SOC

d. teena-iitu-ye → teeniitya 'become the same'
same-INC-SOC

Some verbs never occur without this suffix, like *paarya* 'fight', *tuuya* 'meet', that are inherently reciprocal. The suffix has an allomorph *-yeer* before certain suffixes with a vowel:

(43) tuu-yeer-a → tuuyeera 'to meet with'
meet-SOC-INS

10.2.14 Essive suffix

The essive suffix *-iisye* (ESS) signals that a verb occurs without its usual object:

(44) a. mii kwaamey lokor 's/he is eating fruit'
be 3D-eat-IPF fruit

a'. mii kwaamiisyey 's/he is eating
be 3D-eat-ESS-IPF

b. kiyaat Cheeliima kurkee 'Chelimo opened the door'
DP-open Chelimo door-TH-DF

b'. kuyaatiisye iitiik 'the ears opened'
3D-open-ESS ear-PL-DF

In the a'-example the object is simple dropped and the subject remains what it was. In the b'-example, however, the object (what is opened) has become subject and the agent has disappeared, a use that seems close to a *middle*. Here are some more examples of both uses:

(45) a. mang 'dwell' mangiisye 'be alive'
b. keny 'wait for' kenyiisye 'wait'
c. reer 'suckle' reeriisye 'suckle'
d. kuur 'call' kuursye 'call out'
e. ngaal 'deceive' ngaalsye 'cheat'

The *ii* part of the essive suffix is often deleted when it follows a class 1 verb with a long vowel (e.g. *teeksye* 'build') and before certain suffixes (like the instrumental *-a*) the allomorph *-iisyeer* is found (e.g. *pay-iisyeer-a* 'use' based on a root meaning 'make').

10.2.15 Ventive suffix

The suffix *-u*, called the ventive (VNT), indicates that the action of the verb is directed towards the speaker or another salient point of view.

(46) ku-ap-u kuumat-a-i → kwaapu kuumatee
3D-take-VNT honey-TH-DF
's/he brought the honey (to the perspective point)'

It is also used in a benefactive function ('for') in combination with object suffixes:

(47) i-met-u-aan saayit-i-i-nguung → imetwaan saayitiinguung
2S-leave-VNT-O1S watch-TH-DF-your.sg
'You will leave your watch for me'

In some contexts the form of this suffix is *-uun*:

(48) sar-u 'save' sar-uun-ee 'save with'
snatch-VNT snatch-VNT-INS

10.2.16 Itive suffix

The opposite of the ventive suffix is the itive suffix (ITV), used to express motion away from the speaker or perspective point. The normal form of this suffix is *-ta*, with *-taar* as an allomorph before certain suffixes:

(49) a. piriir 'fly' piriirta 'fly away'
b. pin-ta 'cross' pintaara 'cross through'
pass-ITV pass-ITV-INS

Many uses of this suffix have idiomatic meanings.

10.2.17 Dative suffix

Closely related to the two directional suffixes is the dative suffix (DAT), that comes in two basic forms: *-chi* and *-chin*:

(50) a. ku-ap-chi → kwaapchi 's/he brought it to her'
3D-bring-DAT
b. ngalaal-chin-ii → ngalaalchinii 's/he is talking to him'
talk-DAT-IPF

The basic function of *-chi*(*n*) is to add an extra argument to the verb for a goal or benefactive, but also for other roles:

(51) a. kimaakunyoor nkokyee weempa
DP-NEG!-3D-get hen-TH-DF razor-DF
'Hen did not get the razor'
b. kinyoorchinii Kipeet tanyaanee che

DP-get-DAT-IPF Kibet cow-that milk

'Kibet could get milk from the cow'

In the a-example the verb *nyoor* 'get' is transitive; it takes a subject and one object. With the suffix *-chi* in the second sentence, however, it becomes a ditransitive verb that takes an additional object that expresses the source of the 'getting', the cow in this example. *nyoorchi* corresponds with 'get-from' in English. There are also many cases where the meaning of the form with *-chi* does not have an obvious systematic relation with the base verb semantically.

10.2.18 Instrumental suffix

A similar role is played by the instrumental (INS) suffix *-a* or *-ee(n)*:

(52) a. wung 'hide' wunga 'hide from'

b. riir 'cry' riiree 'cry about'

In this sense the dative and instrumental are what are sometimes called applicative or prepositional suffixes. The instrumental suffix *-a* also has another use, illustrated in the following examples:

(53) a. kuyaat cheepyooseekay kurkee 'the woman opened the door'

3D-open woman-TH-DF-DEM door-TH-DF

b. kuyaata kurkaanaanee 'the door opened'

3D-open-INS door-TH-that

It can take a transitive verb and turn it into an intransitive verb. What used to be the direct object has become the subject of the sentence. No agent is expressed in the sentence.

10.2.19 Ambulative suffixes

The ambulative suffixes *-aata* and *-aanu* (AMB) indicate that the action of the verb is performed while moving, away from or towards the speaker, respectively:

(54) a. was ‘look for’ wasaata ‘go looking for’

b. rip ‘run’ ripaanu ‘come running’

10.2.20 Imperfective suffix

The imperfective suffix (IPF) comes in two basic forms: *-ey* and *-ii*. The allomorph *-ey* is the normal form, while *-ii* occurs only after a handful of verb roots and after the dative suffix *-chi*:

(55) a. roor-ey → roorey ‘s/he is cooking’
cook-IPF

b. ku-yu-ee-ey → kuyweey ‘s/he is warming her/himself with (it)’
3D-warm-INS-IPF

c. ten-ii → tenii ‘s/he is giving’
give-IPF

d. piiren-chin-ii → piirenchinii ‘s/he is playing with (it)’
play-DAT-IPF

The imperfective is used in a wide range of functions that all have in common that the event described by the verb is presented as being not completed. The following sentence illustrates its typical use well:

(56) nkaa ati kyaamey piich kimakeetyee, kurip cheepyoosee
at when DP-eat-IPF people ogre-TH-DF 3D-run woman-TH-DF
‘When the ogre was eating people, the woman ran away’

There is a clear relation here between the eating process, which has some duration and which is presented as open-ended, and the running away event of the woman which occurs during that as a closed, point-like event. Always when such a configuration occurs the longer event is marked as imperfective. But if an event is extended for some time, is of a general nature, repeats itself, or is located in the future, the imperfective is also used:

(57) a. kituumey kimakeet

DP-sing-IPF hyena

'The hyena was singing'

b. kitingey laakoochiich chaa lee areeny

DP-have-IPF child-PL-DF-his REL be two

'He had two children'

c. kichooney laakweekay kosoliny aka tokol

DP-come-IPF child-DF-DEM evening other all

'The child came every evening'

d. iweetii ano?

2S-go-IPF where

'Where are you (sg.) going?'

10.2.21 Imperative suffix

Imperative uses of a verb are indicated by a suffix that always comes at the end of the word and that consists of the vowel *-a* or *-V* (i.e. lengthening of the preceding vowel):

(58) a. roos-a → roosa 'look!'

look-IMP

b. a-siis-ye-V → asiisyee 'be quiet all of you!'

2P-be.quiet-SOC-IMP

There is no person marking in front of the verb in the singular, but only in the plural. Adhortative uses, with the first person plural, are also possible:

(59) kee-par-a → keepara 'let's kill it!'

1P-kill-IMP

10.2.22 Person suffixes

All the way at the end of the verb come suffixes that mark the object or subject of the verb. There are only suffixes for first and second person, the third person remains unmarked.

	Singular	*Plural*
First person	-a(a)n	-eech
Second person	-i(i)n	-aak

Table 35: Object suffixes

	Singular	*Plural*
First person	-aa	-chaan
Second person	-nyeen	-kwaan

Table 36: Subject suffixes

The singular object suffixes have a short form (*-an*, *-in*) that is only used when the *subject* of the verb is third person:

(60) a. ki-koon-an → kikoonan 's/he gave me'
DP-give-O1S

b. ka-i-koon-aan → keekoonaan 'you (sg.) have given me'
RP-2S-give-O1S

c. ki-ku-kar-in → kikukarin 'it has covered you'
DP-3D-close-O2S

d. kaa-a-pan-iin → kaapaniin 'I have cursed you'
RP!-1S-curse-O2S

There is no such variation with the plural object suffixes:

(61) a. kar-ta-eech → karteech 'to lock us up'
close-ITV-O1P

b. i-taaret-ta-ey-eech → itaaretitaayeech ‘you help us’

2S-help-ITV-IPF-O1P

c. ka-a-met-chi-aak → kaametyaak ‘I have left you (pl.)’

RP-1S-leave-ITV-O2P

d. a-mwaar-u-aak → amwaarwaak ‘I tell you’

1S-tell-VNT-O2P

(62) a. a-mii-aa → amyaa ‘I am’

1S-be-S1S

b. i-muuk-ey-nyeen → imuukeenyeen ‘you (sg.) are able’

2S-be.able-IPF-S2S

c. kee-mii-chaan → keemiichaan ‘we are’

1P-be-S1P

d. a-peet-ii-kwaan → apeetiikwaan ‘you (pl.) are going’

2P-go-IPF-S2P

Sometimes a subject suffix can be found after an object suffix:

(63) ka-i-kar-aan-nyeen → keekaraanyeen ‘you have milked me’

RP-2S-milk-O1S-S2S

The similarity between the subject suffixes and the independent pronouns (and the fact that they are separate words in most other Kalenjin languages) suggests that the subject suffixes might really be pronouns cliticized to the verb:

	Suffix	*Pronoun*
‘I’	-aa	anaan
‘you (sg.)’	-nyeen	inyeen
‘we’	-chaan	achaan
‘you (pl.)’	-kwaan	akwaan

Table 37: Subject suffixes and pronouns

Only the first person singular suffix *-aa* really diverges from the pronoun *anaan*.

10.3 Adjectives

In comparison to nouns and verbs, the morphology of adjectives is quite simple. There is one derivational suffix and there are two inflectional suffixes.

10.3.1 Derivation of adjectives

The suffix *-aat* (STAT) derives adjectives from verbs:

(64)	a.	tyaak 'untie'	tyaakaat 'free'
	b.	peeruur 'bless'	peeruuraat 'blessed'
	c.	nar 'become fat'	naraat 'fat'
	d.	ngarak 'rejoice'	ngarakaat 'happy'
	e.	sap-ya 'live (pl.)'	sapyaat 'alive (pl.)'

The suffix can follow some verbal suffixes, as the last example shows. If the verb is transitive, its object becomes the subject of the adjective. The subject of an intransitive verb is the subject of the adjective. In a sense it functions like a participial in other languages.

10.3.2 Number inflection on adjectives

The adjective in Endo is inflected for number. The singular is unmarked, the plural is marked by the suffix *-a* for predicative adjectives and *-een* for attributive adjectives:

(65)	a.	karaam inyeentee	'S/he is good'
		good s/he	
	b.	laakwa nyaa karaam	'a good child'
		child REL good	
	c.	karaama akwaaneek	'They are good'
		good-PL they	
	d.	piich chaa karaameen	'good people'

people REL good-PL

References

Beech, Mervyn W.H. (1913). Endo Vocabulary. *Man* 41-42, 70-72.

Bender, M. Lionel eds. (1991). *Proceedings of the Fourth Nilo-Saharan Linguistics Colloquium*. [Nilo-Saharan Linguistic Analyses and Documentation Vol. 7] Hamburg: Helmut Buske Verlag.

Clements, George N. (2000). Phonology. In Bernd Heine and Derek Nurse eds., *African Languages: An Introduction*. Cambridge: Cambridge University Press, 123-160.

Creider, Chet A. (1981). The Tonal System of Proto-Kalenjin. In Schadeberg and Bender, 19-39.

Creider, Chet A. (1982). *Studies in Kalenjin Nominal Tonology*. [Language and Dialect Atlas of Kenya, Supplement 3]. Berlin: Dietrich Reimer Verlag.

Creider, Jane Tapsubei and Chet A. Creider (1989). *A Grammar of Nandi*. Hamburg: Helmut Buske Verlag.

Dimmendaal, Gerrit J. (2002). Constraining disharmony in Nilotic: What does an optimal system look like? *Journal of African Languages and Linguistics* 23, 153-181.

Greenberg, Joseph H. (1963). *The Languages of Africa*. Bloomington: Indiana University.

Greenlee, Judith Marie (1987). *Some Features of Cohesion in Four Endo Narratives*. MA Thesis, University of Texas at Arlington.

Greenlee, Ken (1990). Endo report. Ms. SIL/Bible Translation and Literacy.

Grimes, Barbara F. ed. (1996). *Ethnologue*. 13th Edition. Dallas: Summer Institute of Linguistics.

Hall, Beatrice L., Stephen A. Antell, Godfrey K. Cherono, R.M.R. Hall, Amy Myers, and Martin D. Pam (1974). Nilo-Saharan vowel harmony from the vantage point of Kalenjin. *Afrika und Übersee* 57, 241-267.

Halle, Morris and Jean-Roger Vergnaud (1981). Harmony processes. In W. Klein and W. Levelt, eds., *Crossing the Boundaries in Linguistics*, Dordrecht: Reidel, 1-22.

Heine, Bernd (1971). Kalenjin glottochronology. *Mila* 11.2, 51-55.

Kipkorir, Benjamin E., R.C. Soper and J.W. Ssennyonga (1983). *Kerio Valley: Past, Present and Future*. Nairobi: Institute of African Studies.

Kipkorir, Benjamin E. and F.B. Welbourn (1973). *The Marakwet of Kenya: a preliminary study*. Nairobi: East African Literature Bureau.

Kisaang', Philemon and Fraser Jackson (1994). Eento Phonological Statement. Ms. Bible Translation and Literacy, Nairobi.

Köhler, Oswin (1955). Geschichte der Erforschung der nilotischen Sprachen. *Afrika und Übersee*, Beiheft 28. Berlin: Dietrich Reimer.

Larsen, Iver (1986). Sabaot Noun Classification. In Rottland and Omondi, eds., 143-163.

Larsen, Iver (1991). A Puzzling Dissimilation Process in Southern Nilotic. In Bender, 263-272.

Local, John and Ken Lodge (n.d.). Kalenjin is not (just) a vowel harmony language: An exercise in declarative phonological representation and phonetic interpretation. Ms. University of York/University of East Anglia.

Lodge, Ken (1995). Kalenjin phonology and morphology: A further exemplification of underspecification and non-destructive phonology. *Lingua* 96, 29-43.

Longley, John, Stuart McGill, Emma Pavey, Philemon Kisang and Ivan Lowe (1996). *GRIP Endo Analysis*. British SIL, Horsleys Green.

Maddieson, Ian (1984). *Patterns of sound*. Cambridge: Cambridge University Press.

Moore, Henriette L. (1986). *Space, Text and Gender: An Anthropological Study of the Marakwet of Kenya*. Cambridge: Cambridge University Press.

Ringen, Catherine O. (1988). Underspecification Theory and Binary Features. In H. van der Hulst and N. Smith, eds., *Features, Segmental Structure, and Harmony Processes* (Part II). Dordrecht: Foris Publications. 145-160.

Rottland, Franz (1980). Vowel Harmony in Southern Nilotic. Ms. University of Nairobi.

Rottland, Franz (1982). *Die Südnilotischen Sprachen: Beschreibung, Vergleichung und Rekonstruktion*. (Kölner Beiträge zur Afrikanistik 7). Berlin: Dietrich Reimer.

Rottland, Franz (1983). Marakwet dialects: synchronic and diachronic aspects. In Kipkorir, Soper & Ssennyonga, 139-146.

Rottland, Franz and Lucia N. Omondi eds. (1986). *Proceedings of the Third Nilo-Saharan Linguistics Colloquium*. Hamburg: Helmut Buske Verlag.

Schadeberg, Theo C. and M. Lionel Bender eds. (1981). *Proceedings of the first Nilo-Saharan Linguistics Colloquium*. Dordrecht: Foris.

Tucker, A.N. (1964). Kalenjin phonetics. In D. Abercrombie, D.B. Fry, P.A.D. MacCarthy, N.C. Scott, and J.L.M. Trim, eds., *In Honour of Daniel Jones*. London: Longmans. 445-70.

Tucker, A.N. and M.A. Bryan (1962). Noun Classification in Kalenjin: Päkot. *African Language Studies* 3, 137-181.

Tucker, A.N. and M.A. Bryan (1964). Noun Classification in Kalenjin: Nandi-Kipsigis. *African Language Studies* 5, 192-247.

Tucker, A.N. and M.A. Bryan (1965). Noun Classification in Kalenjin: Nandi-Kipsigis (Continued). *African Language Studies* 6, 117-187.

Van Otterloo, Roger (1979). *A Kalenjin Dialect Study*. Ms. University of Nairobi/Summer Institute of Linguistics.

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