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2. Phonology and morphophonology

This chapter deals with the inventory of the speech sounds as well as the morphophonology of Konso. After the identification and description of the consonant and vowel phonemes, (near) minimal pairs are provided. Phonotactic constraints, syllable structure, phonological and morphophonemic processes and tone are also treated in this chapter.

2.1. Consonant phonemes

The inventory of consonant phonemes in Konso includes labial, alveolar, (alveo)-palatal, velar, uvular and glottal places of articulation. Along these places of articulation, 21 consonant phonemes are recognised (see also Black 1973; Sim 1977). The consonants at a systematic phonemic level are given in table 1.

	Labial	Alveolar	(Alveo)-palatal	Velar	Uvular	Glottal
Plain stops	p	t	c	k		ʔ
Implosives	ɓ	ɗ	ɟ		ɠ	
Nasals	m	n	ɲ			
Fricatives	f ¹	s	ʃ		χ	h
Liquids		l, r				
Glides	w		y			

Table 1: Consonant phonemes of Konso

From table 1, we observe that Konso does not make a phonemic voice distinction in stops. Some voiceless stops are realised voiced in certain conditions (cf. Section 2.7.2). The absence of voice contrast in stops has also been reported for Diraytata (Black 1974; SIL 2002; Wondwosen 2007), Muusiye (SIL 2002:6) and Gawwada (Black 1974, Geberew 2005). Diraytata and Muusiye [Bussa], together with Konso, are Konsoid languages within the Oromoid subgroup, whereas Gawwada is a member of the Dullay group spoken to the west of Konso. Other neighbouring Cushitic languages do make a voice distinction: Oromo (see among others Andrzejewski 1957:25; Black 1974:64, Bender et. al 1976:132; Owens 1985:10; Stroemer 1995:7), Burji (Sasse 1982:15) and Ts'amakko (Savá 2005:9). Thus, the absence of a voice opposition seems to be a Konsoid innovation within the Lowland East Cushitic language family. That Gawwada does not have a voice opposition (Geberew 2005) may be attributed to language contact with the Konsoid languages (see also Sasse 1986). Moreover, all the neighbouring languages have ejectives and, in varying degrees, implosives in their inventories. However, unlike the neighbouring languages,

¹ Labio-dental fricative.

Konso does not have any ejective at all; instead, it has a series of four implosives (shown in table 1).

Ejectives in borrowed words change to implosives (1a), plain stop (1b) or fricative (1c). The systematic correspondence is as follows: the labial ejective /p'/ changes to labial implosive /b/; palatal ejective /c'/ changes to palatal implosive /ɟ/. A velar ejective /k'/ changes to uvular implosive /ɣ/. The alveolar ejectives /t'/ and /s'/ change to an alveolar plain stop /t/ and a voiceless alveolar fricative /s/, respectively. The following illustrative lexical items are borrowed from Amharic.

(1a)	/p' / > /b/	t'ərəp'p'ezza lap'p'is	tarabbeessaa laabbiseeta	'table' 'eraser, rubber'
	/c' / > /ɟ/	c'ərək' mac'id	ɟarɟeeta maafireeta	'textile' 'sickle'
	/k' / > /ɣ/	k'es k'era	ɣeesitta ɣeeraa	'priest, pastor' 'slaughterhouse'
(1b)	/t' / > /t/	seyt'an t'iyyit ɟiggut'	seetana tiyyiteeta ɟukkuteeta	'Satan' 'bullet' 'pistol'
(1c)	/s' / > /s/	s'əlɔt	salootita	'prayer'

Amharic does not have implosive consonants, but Oromo has the alveolar /d/, and Diraytata has the bilabial and alveolar implosives /b/ and /d/. Oromo and Diraytata lexical items with the alveolar implosive retain the alveolar implosive in Konso pronunciation. For instance, a Konso native would pronounce the Oromo word *haada* 'mother' as it is, although in Konso the word for 'mother' is *aayyaa*. Thus /d/ is not an example of an implosive replacing an ejective in loan words from Oromo, Diraytata or Ts'amakko.

2.1.1. Description of consonant phonemes

Below, I present the description of consonant phonemes and give illustrative examples. Allophonic variants are discussed in Section 2.7. The order of the consonant phonemes is based on the place of articulation.

- (2) /p/ is a bilabial voiceless plain stop.
- | | |
|--------|---------------|
| pifaa | 'water' |
| pɔra | 'road, place' |
| hapura | 'spirit' |
| torpaa | 'week' |

- (3) /b/ is a bilabial implosive. It is very rare in word-initial position.

baɓɓaɗa	‘well-fed (impolite for humans)’
hiɓta	‘lip’
saraɓta	‘calf (of leg)’

- (4) /m/ is a bilabial voiced nasal.

mura	‘forest’
makla	‘handle of a pot’
kusumta	‘navel’
kumanta	‘antelope’

- (5) /f/ is a labio-dental voiceless fricative.

furaa	‘key, padlock’
foola	‘steam’
kuufa	‘cow dung pile’
kafa	‘clan’

- (6) /w/ is a labio-velar voiced glide.

waɗfa	‘God’
kawsa	‘beard’
tawna	‘bell’

- (7) /t/ is an alveolar voiceless plain stop.

tika	‘house’
talteeta	‘she-goat’
kuta	‘dog’
harta	‘pond’

- (8) /ɗ/ is an alveolar implosive.

ɗakaa	‘stone’
ɗikla	‘elbow’
hiɗana	root crop species
tandɗa	‘drink prepared without malt’

- (9) /n/ is an alveolar nasal voiced.

nama	‘person, man’
nessa	‘soul’
soonaa	‘nose’
ɗinda	‘side’

for the nominals χ accumaa ‘stinking, smelling bad’ and hoccoa ‘work’ derived from the verb roots χ accad- ‘to stink, smell bad’ and hoccad- ‘to work, do’, respectively, I could not find any other nouns with a geminate /c/. The following is an exhaustive list of the proper names I know of with geminate /c/.

- (15) **kaccanna** a woman’s personal name
 kaccitti a woman’s personal name
 kaccuunu a man’s personal name
 kaccaawwa a woman’s personal name
 paacca a male or female person’s name

- (16) /ʃ/ is a palatal implosive.

ʃolta	‘blind person’
ʃaʒaa	‘local beer’
kaaʃaa	‘money’
marʃaa	‘hip flesh (human)’

- (17) /ɲ/ is a palatal nasal voiced.

ɲaɲɲaa	‘tomato’
ɲaapa	‘enemy’
kuɲnata	‘gnat’

- (18) /ʃ/ is a palatal voiceless fricative.

ʃehta	‘grass snake’
ʃaabʒaa	‘stretcher’
piʃaa	‘water’
χarʃa	‘beans’

- (19) /y/ is a palatal glide voiced.

yaaya	type of bead
yooyta	‘jackal’
taahayta	‘sand’
torrayta	‘locust’

- (20) /k/ is a velar voiceless plain stop.

keraa	‘thief’
kirra	‘river’
raaka	‘old woman’
maakaa	‘snake’

(21) /ɢ/ is a uvular implosive.

ɢayranta	‘leopard’
ɢapaleeta	‘monkey’
telɢayta	lizard species
feɢerta	tree species

(22) /χ/ is a uvular voiceless fricative.

χolaa	‘hot drink made mainly from coffee leaves’
χala	‘yesterday’
moχna	‘rocky place’
?arχatta	‘lower part of homestead’

(23) /ʔ/ is a glottal stop.

daʔta	‘butter’
paʔatta	tree species
ifuʔ	‘also’

(24) /h/ is a glottal voiceless approximant.

harreeta	‘donkey’
hotaarta	acacia tree species
laha	‘ram’
oha	‘fodder’

2.1.2. (Near) minimal pairs

Below I show place and manner opposition between plain stops and implosives. I refrain from providing evidence for opposition in manner of articulation between plain stops and fricatives, plain stops and nasals, etc., but such oppositions can be found in the language.

Opposition in place of articulation

Plain voiceless stops /p, t, c, k, ʔ/

From the series of the plain stops, /p, t, k/ are found contrastive in word-initial and medial positions as shown in (25a) and (25b), respectively.

(25a)	paka	‘half’
	taka	‘small birds that fly together and eat crops’
	kakaa	‘comb (of honey)’

(25b)	kapaa	‘near, beside’
	kataa	‘age grading system’
	kaka	‘comb (of honey)’

Implosives /b, d, f, ɓ/

(26)	/b/ and /d/	haabuta haadita	a children’s game ‘load, burden’
	/b/ and /f/	kaabaa kaafaa	man’s name ‘money’
	/b/ and /ɓ/	lebi leɓi	‘kick (many times/things)!’ ‘smear (many times)!’
	/d/ and /f/	ɗakara ɗakara	‘old coin token’ ‘piece of old cloth’
	/d/ and /ɓ/	ɗarta ɗarta	‘lie (untruth)’ ‘firstborn son’
	/f/ and /ɓ/	foraa ɓoraa	‘coin purse’ ‘trees’

Nasals /m, n, ŋ/

(27)	/m/ and /n/	maalaa naalaa	‘cutting crops randomly’ ‘spoilt behaviour’
	/m/ and /ŋ/	maraa ɲaraa	‘hillside’ ‘contention, threat’
		irma irɲa	‘wheat/barley stalk’ ‘gum’
	/n/ and /ŋ/	napa ɲaapa	‘soot’ ‘enemy’

Plain voiceless stops and implosives

(28)	/p/ and /b/	kapa kaba	‘near’ ‘canal’
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/t/ and /d/	tankaa	sorghum species
	ɗankaa	‘pharynx’
	tuuta	‘festival after crop harvest’
	tuuda	‘pillar’
/c/ and /ʃ/	caattaa	‘life, living’ < caad-taa >
	ʃaatta²	‘thorn’
/k/ and /g/	lekaa	‘congested sprouts’
	leḡaa	‘loan (of money)’

2.1.3. Geminata

All consonants may appear geminate. Geminate consonants occur only in word-medial position. In addition to geminate consonants in lexical roots, gemination can arise grammatically. As we shall see shortly, a substitution of a non-geminate consonant for a geminate counterpart may bring about a semantic difference in lexical items. Grammatically, geminate consonants may mark plural number (see 4.2.3.)

Geminate consonants function as ambisyllabic segments, appearing as a coda of a preceding syllable and the onset of the following syllable (see 2.4.2). As mentioned in the introduction, geminate consonants are written by doubling the symbol (e.g. consonant /t/ in **apitta** ‘fire’).

Below I provide (near) minimal pairs consisting of geminate and non-geminate consonants. Where I lack nominal examples, I provide imperative verbs or simple sentences with intransitive verbs.

(29)	/p/ and /pp/	kapaa	‘near’
		kappaa	‘wheat’
	/t/ and /tt/	aataa	‘culture’
		aattaa	form of address for an elder sibling
	/k/ and /kk/	hikaa	‘art of building huts’
		hiikkaa	‘stars’
	/ʔ/ and /ʔʔ/	iʔanti	‘She went.’
		iʔʔanti	‘You (SG) went.’
	/d/ and /ɗd/	hidana	root crop species

² **ʃaatta** has a variant with glottal stop /ʔ/: **ʃaʔatta**.

	hiddana	‘bundle’
/f/ and /ff/	kaafaa kaaffaa	‘money’ a children’s game
/G/ and /GG/	peeGaa peeGGaa	‘metal or clay plate for baking’ ‘quarrel, dispute’
/m/ and /mm/	kamaa kammaa	‘hillside’ ‘behind, after’
/n/ and /nn/	mana manaa	‘hut’ ‘huts’
/f/ and /ff/	tafaa taffaa	type of game played by males ‘thighs’
/s/ and /ss/	pisa pissa	‘flower’ ‘complexion (of a sick person)’
/h/ and /hh/	mehi mehhi	‘Shake (many times) to dry!’ ‘Shake (once) to dry!’
/ʃ/ and /ʃʃ/	haafaa haaffaa	as in haafaa haafi ‘Get lost!’ ‘leaf, leaves’
/l/ and /ll/	dfilaa dfillaa	‘charcoal’ ‘fields, farms’
/r/ and /rr/	χara χarra	‘shivering, trembling’ ‘door, gate’
/w/ and /ww/	dfawiyaa dfawwiyyaa	‘hitting (something)’ ‘herding’
/y/ and /yy/	χaaya χaayyaa	‘labour (childbirth)’ ‘labour’ (for clan chief, landlord)’

2.1.4. Distributions of consonant phonemes

Except for the glottal stop, all consonant phonemes occur in word-initial position underlyingly. As we shall see later, the glottal stop is inserted word initially to avoid onsetless syllables. All consonant phonemes occur in word-medial and intervocalic positions. Only a few lexical items, mainly numerals,

contain consonants in word final position. However, all the consonant phonemes occur in word final position in ideophones (Chapter 13). In what follows, the distributions of consonants in word-initial, word-medial (i.e., in consonant clusters), in intervocalic and word-final positions are discussed. Examples of geminate consonants are also provided. C stands for “consonant” and V for “vowel”.

Plain stops /p, t, k, ʔ, c/

All the plain stops occur word-initially. /t/ and /c/ occur only as a second member of a consonant cluster, while /ʔ/ occurs only as a first member in a consonant cluster. The rest of the plain stops occur in word medial position preceding or following another consonant. All the plain stops occur as geminate and intervocalically. These distributions are shown in table 2.

	Initial	Medial			
	-C	C-	V-V	Geminate	
/p/	poorta 'barley'	χapnaa ³ 'forest'	kilpa 'knee'	tapayta 'rat'	tappa 'seven'
/t/	tawna 'bell'	-----	farta 'horse'	ditiitaa 'sweat'	χottooma 'fist'
/k/	karitta 'belly'	mikta 'right hand'	karkaa 'beehive'	saka 'blessing'	takka 'one'
/ʔ/	-----	yoʔmatta 'millstone'	-----	χolaʔitta 'sp. of cactus'	iʔʔanti 'You (SG) went.'
/c/	caattaa 'life'	-----	incaa 'I exist'	icaa 'He exists.'	χaccumaa 'bad smell'

Table 2: Distribution of plain stops

Implosives /b, d, ɟ, ɠ/

All implosive consonants occur in word initial position. /b/ is the rarest in this position. Except for /ɟ/, they also occur in word medial position either preceding or following another consonant. All of them occur intervocalically as well as geminate. Table 3 contains illustrative examples for the distributions of these phonemes.

³ χapnaa is a forest that belongs to the clan chief's family, mainly around their homestead.

	Initial	Medial		V-V	Geminate
		-C	C-		
/b/	baalbaala 'big-bellied'	hibta 'lip'	kolba 'water reservoir in the field'	kaba 'canal'	fibboota 'sin'
/d/	dakaa 'stone'	mudkahanta sp. of plant	sindaa 'urine'	kodaa 'work'	noodduta 'bribe'
/ʃ/	ʃabbaa 'weed'	-----	furʃaa 'baby's faeces'	paafuta 'sideburns'	paraʃʃaa crop species
/g/	goyra 'tree'	poɕla 'chief, king'	marɕinaa 'intestine'	paacɕa 'disease'	laacɕguta 'bread'

Table 3: Distribution of implosives

Nasals /m, n, ŋ/

All the nasal phonemes occur in word initial, word medial and intervocalic positions. In word medial position, /m/ and /n/ can precede or follow other consonants, but /ŋ/ occurs only as a second member. All nasals can appear geminated. /ŋ/ as a non-geminate consonant is very rare. Examples that show these distributions of the nasal phonemes are given in table 4.

	Initial	Medial		V-V	Geminate
		-C	C-		
/m/	matta 'head'	taamta 'branch'	arma 'weed'	ama 'breast'	daammaa 'flour'
/n/	nama 'man'	kansaata 'yam'	tawna 'bell'	kutanaa 'hunting'	ɕannatta 'lizard sp.'
/ŋ/	ŋirfaa 'hair'	-----	irŋa 'gum'	kuuŋata 'gnat'	fiŋpitta 'pimple'

Table 4: Distribution of nasals

Of the three nasal phonemes, only /n/ occurs in a word final position in (two) cardinal numbers given in (30).

- (30) **ken** 'five'
 kudan 'ten'

Fricatives /f, s, ʃ, x, h/

All fricative consonants occur in word-initial, medial and intervocalic positions. Except /h/, all fricatives may precede or follow other consonants. /h/ occurs only as a first member in a consonant cluster. They all appear geminate,

though geminate /h/ is very rare in lexical items. There is one word containing /h/ in word final position: **leh** ‘six’. Other fricatives are not attested in word final position.

	Initial	Medial		V-V	Geminate
		-C	C-		
/f/	farta ‘horse’	lafta ‘bone’	konfa ‘shorts’	kafa ‘clan’	χoffaa ‘groin’
/s/	saka ‘blessing’	koskorta ‘partridge’	kawsa ‘beard’	piisa ‘all’	nessa ‘breath’
/ʃ/	ʃaaβʒaa ‘stretcher’	koʃkoʃa ‘(chicken’s) comb’	teʔʃaa ‘elephantiasis’	piʃaa ‘water’	χaʃʃitta ‘shoulder’
/χ/	χolmaa ‘neck’	moχna ‘rocky area’	malχaa ‘flood’	oχinta ‘fence’	maχχa ‘name’
/h/	harreeta ‘donkey’	pohmayta ‘chameleon’	----	taahayta ‘sand’	pondahdo- hhaata plant species

Table 5: Distribution of fricatives

Liquids /l, r/

Both liquids occur in word-initial, medial and intervocalic positions. In a consonant cluster, they can precede or follow other consonants. Rarely, they occur in word final position, and the existing instances are cardinal numbers. These distributions are illustrated in table 6.

Sound	Initial	Medial		V-V	Geminate	Final
		-C	C-			
/l/	lakki ‘two’	olsaa ‘dream’	hawla ‘grave’	ɖila ‘farm’	tolloʔta ‘hump’	sakal ‘nine’
/r/	roopa ‘rain’	marɕinaa ‘intestine’	ɕayranta ‘leopard’	para ‘year’	kirra ‘river’	afur ‘four’

Table 6: Distribution of liquids

Glides /w, y/

Both glides occur in word-initial, medial and intervocalic positions. In consonant clusters, they occur only as a first member; they do not occur in word-final position in lexical items. Both glides may occur as geminate. Illustrative lexical examples are given in the following table.

	Initial	Medial		V-V	Geminate
		-C	C-		
/w/	waacfa 'God'	tawna 'bell'	-----	Ḡaawa 'hole'	kawwatta 'terrace'
/y/	yaakata 'bead'	Ḡimayta 'old man'	-----	muutiya 'worm'	tuuyyata 'pig'

Table 7: Distribution of glides

2.2. Vowel phonemes

Konso has five short vowels /i, e, a, o, u/ and five corresponding long vowels /ii, ee, aa, oo, uu/. For the production of the vowel phonemes, we identify three heights of the tongue (high, mid and low) and three places of articulation or parts of the tongue: front, centre and back. Table 8 presents the vowel phonemes of the language.

	Front		Centre	Back	
High	i	ii		u	uu
Mid	e	ee		o	oo
Low			a	aa	

Table 8: Konso vowel phonemes

Both the short and long vowels occur in word-medial and final positions. Short vowels are phonetically realised with a whisper in utterance-final position. All vowels occur word initially. Most nouns end in the vowel /a/.

2.2.1. Description of vowels

Vowels approximate cardinal vowels. The following is the description of the vowel phonemes.

(31) /i/ high, front vowel

ilta 'eye'
Ḡinaʔitta 'rib'
tiraa 'liver'

/e/ mid front vowel

ekerta 'olive'
parre 'tomorrow'
kereʔta 'thieves'

/a/ low central vowel

para	‘year’
ada	‘chick’
toola	‘family’

/u/ high back vowel

unta	‘grain, crop’
punitta	‘coffee’
tulluppaata	‘wood-boring beetle’

/o/ mid back vowel

oxinta	‘fence’
toma	‘bowl’
monta	‘sky, heaven’

2.2.2. Contrast of short vowels

Short vowels may occur in a contrastive distribution as the (near) minimal pairs in (32) show. Contrast in word-final position is limited. Final vowels in verbs have a grammatical function, and nouns end in *a*.

(32)	/i/ and /e/	kiraa keraa	‘daily labour for money’ ‘thief’
	/i/ and /u/	tiraa turaa	‘liver’ ‘in front of’
	/i/ and /a/	hiβta haβta	‘lip’ ‘border; foreign country’
	/i/ and /o/	χaʔnaa χoʔnaa	‘rise, ascension’ ‘favourite’
	/e/ and /a/	ferta farta	‘small metal tool’ ‘horse’
	/e/ and /u/	feraa furaa	‘harvesting’ ‘padlock, key’
	/e/ and /o/	ekta oktaa	‘tail’ ‘pot’

/a/ and /u/	faroota furoota	‘omen, fortune, luck’ type of bead
/a/ and /o/	daʔayta doʔayta	tree species ‘cattle skin for carrying things’
/u/ and /o/	utaa otaa	‘faeces, droppings (of birds)’ ‘insult, curse’

2.2.3. Contrast of long vowels

Like the short vowels, long vowels occur in a contrastive distribution as the following pairs show.

(33) /ii/ and /ee/	miila meela	‘runny honey’ ‘animal body part (e.g. leg)’
/ii/ and /uu/	diika duuka	‘blood’ ‘yoghurt’
/ii/ and /aa/	piisa paasa	‘all’ plant species
/ii/ and /oo/	fiifaa foofaa	‘cursing’ ‘roughly ground grain’
/aa/ and /uu/	ḡaaddfaa ḡuuddfaa	‘cow/ox cage, barn’ type of grain store
/aa/ and /ee/	yaala yeela	‘labour, toiling’ ‘field along a river bank’
/aa/ and /oo/	kaattaa koottaa	‘shade’ ‘anus, bottom’
/uu/ and /ee/	kuur- keer-	‘to choke’ ‘to run [SG]’
/uu/ and /oo/	puulluta poolluta	‘dough (fermented flour)’ ‘hole in the ground’
/ee/ and /oo/	needfuta noodfuta	‘hatred’ ‘bribe’

2.2.4. Vowel length

Vowel length is phonemic. Below, I show the phonemic status of vowel length by providing minimal pairs for short vowels and their corresponding long vowels.

(34)	/i/ and /ii/	pisa piisa	‘flower’ ‘all’
	/e/ and /ee/	χela χeela	‘age mate’ ‘border, boundary’
	/u/ and /uu/	furaa fuuraa	‘pad lock, key’ ‘fear’
	/o/ and /oo/	foraa fooraa	‘jumping’ ‘thin stick to punish children with’
	/a/ and /aa/	saraa saaraa	‘plunder, looting’ ‘poem’

In word final position, we find vowel length contrast of /a/ and /aa/ as shown in (35).

(35)	/a/ and /aa/	dfla dflaa	‘field, farm’ ‘charcoal’
		moora mooraa	‘fat’ ‘public meeting place’
		χoora χooraa	‘gathering’ ‘appointment’

2.2.5. Vowel co-occurrences

In the following table, I present the possible sequences of vowels in lexical items: the vowels on the left-most column occur preceding the vowels on the top row. The vowels may occur short or long.

	a	e	i	o	u
a	nama 'person'	ma χ eena 'barren cow'	karitta 'stomach'	aakkootita 'female animal'	paafuta 'sideburns'
e	seyta 'plant sp.'	sereeruta 'diarrhoea'	seettitaa 'upper part of foot'	-----	eetuta 'dinner'
i	mikta 'right hand'	pileeta 'insect that feeds on moistened leather'	irritta 'upper arm'	silpoota 'hoe'	-----
o	toma 'bowl'	pokkeeta type of shorts	sookitta 'salt'	po ϕ oota 'mandible'	-----
u	kuma 'thousand'	kulleeta 'hat'	ϕ upitta 'finger'	-----	muukuta 'frog'

Table 9: Possible sequences of vowels in lexical items

2.3. Phonotactics

We have already seen that consonant clusters do occur, but only in word-medial position. As we will see in 2.5 below, syllable onsets and codas can be filled by one consonant, and therefore consonant clusters can only occur when a closed syllable is followed by another syllable. Onsets and codas can be filled by any consonant but not all consonant sequences are allowed. The restrictions are discussed in this section. Moreover, the epenthetic vowel *i* is inserted as part of the general constraint against a sequence of three consonants, including a sequence of a geminate consonant and a non-geminate consonant. In what follows, I will present permissible sequences of consonants.

Plain stops may be followed by nasals, fricatives or the liquid /l/ or another plain stop. In this latter case, the first member is either a glottal stop or a bilabial plain stop and the second member is the alveolar plain stop. Plain stops do not precede implosives, glides, or the liquid /r/. Table 10 contains example words in which a plain stop is a first member of the cluster.

	Plain stop	Nasal	Fricative	Liquid
Plain stop	sataʔta 'lung'	ʒapnaa 'possession'	ipsaa 'light'	sipla 'metal'
	apteenta 'snow'	ʒaʔnaa 'rising'	ʒepʒi 'Break (it)!	dikla 'elbow'
		takma 'honey'	teʔʒaa 'elephantiasis'	
		yoʔmaa 'grindstone'	kiʔsaa 'fireplace'	

Table 10: Plain stop as a first member of a consonant cluster

Implosives may be followed by a plain stop or a liquid or by the fricatives /ʒ/ and /s/. Clusters with fricatives as second members only arise from suffixation: /ʒ/ is a causative suffix (see Section 6.1.1) while /s/ is part of a demonstrative suffix -siʔ (see Section 4.8). Illustrative examples are given in table 11.

	Plain stop	Liquid	Fricative
Implosive	saraβta 'calf (leg)'	poβla 'chief'	siiβʒi 'Hang!'
	mudkahanta plant species	ʒoloβloβitta 'claw'	maβʒi 'Divert!'
			saraβsiʔ 'this calf (of the leg)'
			loβsiʔ 'this leg'

Table 11: Implosive as a first member of a consonant cluster

Nasals may be followed by a plain stop (except for the glottal stop), an implosive (except for the bilabial implosive) or a fricative (only the labio-dental, alveolar and palato-alveolar fricatives). The palatal nasal never occurs as a first member a consonant cluster. Note that the bilabial nasal need not be homorganic with the stop (plain or implosive).

	Plain stop	Implosive	Fricative
Nasal	kanta 'neighbour'	sinda 'urine'	komfa 'shorts (cloth)'
	kaanjita 'mule'	falajfalleeta plant species	tansa 'dance'
	ɣampirteeta 'bird'	fanaɣala 'splinter'	kurruumfaa 'droppings (of goats, sheep)'
	taamta 'branch'	ɗumɗuma 'from elbow to fin- gertip'	

Table 12: Nasal as a first member of a consonant cluster

Fricatives may be followed by a fricative, plain stop, implosive or nasal. A liquid or glide does not follow a fricative. And as can be seen from the following table, not all fricatives, plain stops, implosives or nasals follow a fricative. There are no *fn* or *sn* clusters.

	Fricative	Plain stop	Implosive	Nasal
Fricative	kurruufaa 'goat/sheep drop- pings'	lafta 'bone'	pondohdohhaata plant species	moɣna 'rocky area'
		koskorta 'partridge'	fehfeha tree species	pahnaa 'example'
		koɣkoɣa 'chicken comb'		pohmayta 'chameleon'
		napahta 'ear'		

Table 13: Fricative as a first member of a consonant cluster

In some Amharic loan words, plain stops preceding /t/ in a cluster become /f/ as in (36).

- (36) **taftara** < Amh. **dəbtər** 'exercise book' >
toftoritta < Amh. **doktər** 'doctor' >

A liquid may be followed by a plain stop, implosive, nasal or a fricative as shown in table 14.

	Plain stop	Implosive	Nasal	Fricative
Liquid	kilpa ‘knee’ tulta ‘back’ alkitta ‘sisal’ arpa ‘elephant’ kaharta ‘ewe’ murkufaa ‘fish’	baalbaala ‘potbel- lied’ ipaldi ‘It is wide.’ telɣayta ‘lizard’ sarbaa ‘leg calves’ pardoota mon- goose species tardaa ‘ash’ marfaa ‘hip flesh’ marɣinaa ‘intes- tine’	χolmaa ‘neck’ urmalaa ‘market’ irɲa ‘gum’	χolfa ‘earring’ olsaa ‘dream’ malχaa ‘flood’ ɲirfaa ‘hair’ marsaa ‘but- tocks’ karsatta tree species χarχarayta ‘warthog’

Table 14: Liquid as a first member of a consonant cluster

Glides do not form a second member of a consonant cluster containing implosives or fricatives or liquids. Similarly, liquids do not follow nasals or fricatives in a consonant cluster. These can be seen from the examples in table 15.

	Plain stop	Implosive	Nasal	Fricative	Liquid
Glide	kawpa ‘beside’ kawkawa ‘jaw’ aykitta grass species	sawɗatta ‘clan name’ hayɗaa ‘meat fried with butter’	tawna ‘bell’ χaynaʔtaa ‘thread’ ɗeymatta ‘irony’	yewsi ‘this year’ kawsa ‘beard’	ɗawraa ‘prohibition’ sayleeta ‘mane’ aylaa ‘sowing (seeds)’ ɗoyra ‘tree’ hawla ‘grave, tomb’

Table 15: Glide as a first member of a consonant cluster

2.4. Lexical variations

There is a remarkable but ill-understood lexical variation for a limited number of lexemes. Both consonant as well as vowel phonemes occur in lexical variation, but there is no phonological rule for their distribution. The phenomenon is not productive and may involve phonemes that belong to different categories. Probably it is a result of double reflexes of the same original root, a historical accident. Below I present an exhaustive list of lexical items that involve lexical variations of consonants. The variation involves both non-geminate consonants (table 16) and geminate consonants (table 17).

/ʃ/ and /d/	fooʒʒita dooʒʒita	‘mud’
/t/ and /d/	ɗarta ɗardaa	‘lie, untruth’
/t/ and /n/	taakite taakine ⁴	‘otherwise’
/r/ and /l/	haaruta haaluta ʔarʒuuʒaa ʔalʒuuʒaa	‘revenge’ type of bean
/f/ and /k/	furtaa kurtaa	‘(woman’s) cotton belt’
/ʃ/ and /h/	ʃiparaata hiparaata	‘bat (animal)’
/f/ and /m/	kurruufʒaa kurruumʒaa	‘droppings (of sheep or goats)’
/b/ and /f/	χorroobita χorroofita	cockroach species
/y/ and /w/	payraa pawraa	type of farm tool
/r/ and /y/	ʔare ʔaye	‘here’
/k/ and /χ/	kompalta χompalta	‘cactus’
/k/ and /ʃ/	kiwwayta ʃiwwayta	‘calabash with cord’

Table 16: Lexical variations involving single consonants

⁴ **taakine** or **taakite** also involves vowel variation in the first syllable: **tookine** or **tookite**.

/ʃʃ/ and /cc/	ḡoraʃʃa ḡoraacca	‘medicine’
/ʃʃ/ and /ʔʔ/	leeʃʃuta leeʔʔuta	type of dance
/dd/ and /nn/	helaadda helaanna	‘earlier this day’
/tt/ and /nn/	paraatta paraanna	‘next year’
/tt/ and /ʃʃ/	laaḡitta ⁵ laaḡiʃʃa	‘ram’

Table 17: Lexical variation involving geminate consonants

Certain lexical items also involve variation in gemination. These are given in table 18.

/p/ and /pp/	teepaa teppaa	‘rope’
/x/ and /xx/	deexa deexxaa	‘lawsuit’
/r/ and /rr/	diiraa diirraa	‘men’
	tuparaa tuparraa	‘girls’

Table 18: Lexical variations involving gemination

No variation involving alternation between short and long vowels was found. Table 20 presents the list of lexical items involving variation for short vowels.

⁵ The other form for ‘ram’ is **laha**. Notice that **laha** is irregular and that the **itta** of **laaḡitta** cannot be considered to be suffix here (but see 4.2.1). The **iʃʃ** of the form **laaḡiʃʃa** is not a suffix at all.

/i/ and /u/	fiḅḅoota fuḅḅoota	‘sin’
/i/ and /e/	inanta enanta	‘girl’
/i/ and /a/	fiwwayta ḵawwayta	‘calabash with strip to sling on the shoulder’
	innayyaa inniyyaa	‘young animal, bird’
/e/ and /a/	ḵelḵaa ḵalḵaa	‘young animals, birds’

Table 20: Lexical variations involving short vowels

There are also certain lexical items in which we find lexical variation that involves long vowels as shown in the following table.

/aa/ and /oo/	taakite tookite	‘otherwise’
/aa/ and /ee/	pottaata potteeta	‘pumpkin’
/oo/ and /ii/	soonaa siinaa	‘nose’

Table 21: Lexical variation involving long vowels

2.5. Syllable Structure

Konso has both open and closed syllables. The onset and coda cannot be occupied by more than one consonant phoneme. All syllables begin with a consonant. This means that the onset is always filled. All consonant phonemes may occur in the coda position. Geminate consonants function as ambisyllabic segments, appearing as a coda of a preceding syllable and as an onset of a following syllable. The nucleus position of a syllable may have a short vowel or a long vowel.

We can formulate the following four possible syllable structures.

- (37) CV
CVV
CVC
CVVC

The object pronoun form of the second person singular **ke** is the only independent word with a CV syllable structure. Similarly, except for the numerals **ken** ‘five’ and **leh** ‘six’ with a CVC structure, an independent word consists minimally of two syllables.

2.5.1. Syllable patterns in nouns

Noun roots always add a suffix or a terminal vowel (a, aa). All noun roots are monosyllabic. Below, I show the syllable patterns of nominal stems, since the addition of a suffix or a terminal vowel alters the canonical shape of the syllable patterns. Nominal stems may have disyllabic (38a), trisyllabic (38b) or four syllabic (38c) canonical patterns.

(38a)	C ₁ V.C ₂ V	pora tika	'road' 'house'
	C ₁ VC ₂ .C ₃ V	dahta harka tawna χolfa	'firefly' 'hand' 'bell' 'earring'
	C ₁ V.C ₂ VV	taraa dilaa kosaa tiraa	'ash' 'charcoal' 'granary' 'liver'
	C ₁ VC ₂ .C ₃ VV	karmaa kandaa karkaa jirfaa	'lion' plant species 'beehive' 'hair'
	C ₁ VC ₂ .C ₂ VV	fa6baa kappaa	'weed' 'wheat'
	C ₁ VV.C ₂ V	miira kuufa moora	'anger' 'manure, pile of cow dung' 'fat'
	C ₁ VVC ₂ .C ₃ V	moonta poorta tookta	'sky' 'barley' 'profit'
	C ₁ VVC ₂ .C ₂ V	mootta teetta	'friend' 'threshing ground'
	C ₁ VV.C ₂ VV	maakaa mooraa tooraa	'snake' 'public place' 'opposition'

	$C_1VVC_2.C_{2,3}VV$	aappaa aakkaa paankaa waakkaa aannaa	'father' 'grandfather' 'machete' 'wooden grave monument' 'milk'
(38b)	$C_1V.C_2VC_3.C_{3,4}V$	ḡupitta apitta ilkitta ḡakinta sataʔta kollatta	'finger' 'fire' 'tooth' 'body, skin' 'heart' 'hide'
	$C_1V.C_2VV.C_3V$	mukuuka ḡukeeta	'wooden tool for weaving' 'wood dust produced by wood-boring insects'
	$C_1VC_2.C_{2,3}VV.C_4V$	silpoota talteeta pottaata kulleeta	'hoe' 'she-goat' 'pumpkin' 'cape'
	$C_1VV.C_2V.C_3V$	ḡuusuta muukuta paafuta	'fart' 'frog' 'sideburns'
	$C_1VVC_2.C_2V.C_3V$	poolluta maammata laaḡḡuta	'a hole in the ground' 'aunt' 'bread'
	$C_1VC_2.C_3VC_3.C_4V$	partupta parnanta	'September' 'split between buttocks'
	$C_1VC_2.C_3VVC_4.C_4V$	halkeetta	'night'
	$C_1V.C_2VVC_3.C_3VV$	pakaannaa	edible tuber species
(38c)	$C_1C_2V.C_3VC_4.C_4V$	ḡinaʔitta maraʔitta χolaʔitta	'rib' grass species cactus species

2.5.2. Syllable patterns in verb roots

Except a handful of verb roots (see (47) below), verbal roots are closed syllables with monosyllabic (the majority) or disyllabic templates. I could not find an underived trisyllabic verb root. In (39), I provide the canonical shapes of the verb roots arranged in their frequency of occurrence, from most to least frequent.

- (39) CVC-
 CVVC-
 CVCC-
 CVVCC-
 CVCV(V)C-
 CVCCV(V)C-
 CVVCCVVC-
 CVC[i]-

Below, I give illustrative examples for the canonical shapes presented in (39). The verb roots in (40a) have the CVC- structure whereas those in (40b) have the CVVC- structure.

- | | | | |
|-------|--------|---|---|
| (40a) | C1VC2 | ɗam-
muk-
ɕal-
ɕot- | ‘to eat’
‘to sleep’
‘to slaughter’
‘to dig’ |
| (40b) | C1VVC2 | fijf-
ɗaaʃ-
keer-
puuf-
pooy- | ‘to curse’
‘to give’
‘to run[SG]’
‘to spray’
‘to cry’ |

The verb roots in (41) have the CVCC- structure. The CC of the verb root structure can be a geminate consonant (41a) or a cluster of consonants (41b).

- | | | | |
|-------|---------|---|--|
| (41a) | C1VC2C2 | mitt-
kull-
pidɗ-
ɕiff- | ‘to sever, pick (a fruit)[SG]’
‘to enter’
‘to buy[SG]’
‘to destroy, demolish’ |
| (41b) | C1VC2C3 | tarp-
teym-
kirp-
erk-
ɗink-
hawl- | ‘to cross, bypass’
‘to forget’
‘to sing, dance’
‘to send’
‘to kiss’
‘to bury’ |

The verb roots in (42) have the CVVCC- syllable pattern. The CC is a geminate consonant. CVVCC verb root structures in which CC is a cluster of consonants have not been attested.

(42)	C1VVC2C2	kaa66-	‘to be jealous’
		needf-	‘to hate’
		puull-	‘to ferment’
		paayy-	‘to start’
		tuull-	‘to cross over’

The verb roots in (43a) have the CVCVC- structure while those in (43b) have the CVCVVC- structure.

(43a)	C1V.C2VC3	opay-	‘to give light’
		ɗakay-	‘to hear’
		ɗeham-	‘to advise’
		ɲapal-	‘to spoil’
(43b)	C1V.C2VVC3	oraap-	‘to fetch water’
		malaal-	‘to be unable to’
		aɣaaw-	‘to roast’
		padaaw-	‘to add, increase’
		ɣaniin-	‘to bite’
		suraaw-	‘to hurt’

The verb roots in (44) have the CVCCVC- structure where the CC is a consonant cluster (44a) or a geminate (44b):

(44a)	C1VC2.C3VVC4	anɣal-	‘to cook’
		marmad-	‘to deny, betray’
(44b)	C1VC2.C2VVC3	immak-	‘to fill’
		ullup-	‘to cry for help’
		faɣɣal-	‘to stick to’
		ɣadɗaap-	‘to catch up with’
		tuɣɣuur-	‘to push’
		hadɗuun-	‘to hold (a child)’
		ɣappaaf-	‘to swell’

The following verb root has a canonical shape CVV.CVVC.

(45)	C ₁ VV.C ₂ VVC ₃	tiitaaw-	‘to return’
------	---	----------	-------------

The verb roots in (46) have the shape CVVCCVVC-. This canonical shape of verb roots is the longest, and, as we can see from the examples below, it seems

that the verb root is a full reduplication of CVVC. However, the CVVC- does not occur alone to give the meaning of the whole verbal root.

- (46) C1VVC2.C3VVC4- **ɠaarɠaar-** ‘to help, assist’
 ɠaatɠaat- ‘to chase closely’
 taaltaal- ‘to stagger’

So far, all the canonical shapes of the verb roots that we have seen are C final. However, a small set of verb roots have an optional final V. The optional final vowel is always [i]. In (47), I give a near-exhaustive list of such verb roots.

- (47) **as[i]-** ‘to wait’
 ɖaʔt[i]- ‘to smear, paint’
 pir[i]- ‘to finish’
 pal[i]- ‘to ripen; ready to eat’
 ker[i]- ‘to grow old’
 par[i]- ‘to sunrise; day break’
 faʔ[i]- ‘to pack a load’
 heer[i]- ‘to buy[PL]’
 raaʔ[i]- ‘to hang down’
 sooh[i]- ‘to twist together (e.g. thread)’
 keeʔ[i]- ‘to belch’
 kaaʔ[i]- ‘to tear, split’

The above exceptional set of verb roots acquire the canonical shape CVCV when an affix which is, or which begins with, a consonant follows the verb root. For example, in (48), the verb root **ker-** ‘grow old’ gains a CVCV structure because it is followed by the third person feminine gender agreement maker **-t** in (48a) and the present imperfective suffix **-ni** in (48b). When the verb root is followed by an affix that is, or begins with, a vowel, the canonical shape of the verb root becomes CVC as in (49).

- (48a) **alleetasiʔ ʔikeriti**
 alleeta-siʔ *i = ker-i-t-i*
 hut-DEF.M/F 3 = grow.old-3F-PF
 ‘The hut got old.’
- (48b) **ɠoroosiniɖ ɖettow ikerini**
 ɠoraa-osiniʔ *ɖettow* *i = ker-ni*
 trees-DEM.P quickly 3 = be.old-IPF.PRES
 ‘These trees grew old quickly.’
- (49a) **namasiʔ ʔikeray**
 nama-siʔ *i = ker-ay*
 man-DEF.M/F 3 = be.old-PF[3M]
 ‘The man grew old.’

- (49b) *okkattoosid dettow ?inkeru*
okkatta-osi? dettow in = ker-u
 cow-DEM.M/F soon 3NEG = be.old-NEG.IPF.FUT
 ‘This cow will not be old soon.’

In the following examples, I show the opposition between the verb roots *ker[i]*- ‘to grow old’ and *fer-* ‘to harvest’. The examples show that the [i] of the verb root *ker[i]* cannot be regarded to be an epenthetic vowel (see 2.6).

- (50a) *ifeenna? ?ikeriti*
ʃeenna-ʔ i = ker-i-t-i
 3SGF.PRO-NOM 3 = grow.old-3F-PF
 ‘She grew old.’
- (50b) *ifeenna? ?unta-si? ?iferti*
ʃeenna-ʔ unta-si? i = fer-t-i
 3SGF.PRO-NOM crop-DEF.M/F 3 = harvest-3F-PF
 ‘She harvested the crops.’

The verb root *c-* ‘to be, exist’ seems to be an example of a verb root consisting of a single consonant. This is the only example I found. However, when I questioned the phonemic status of /c/ in 2.1.2, I also pointed out that underlyingly *c-* has the CVC- verb root *kiy-* or *kit-*. Thus, I argue that there are no verb roots consisting of single consonants in Konso.

2.6. Epenthesis and syllable sequences

An epenthetic vowel *i* is inserted as a resolution of a general constraint against a sequence of three consonants. The insertion of the epenthetic vowel is mainly observed in verbal roots with CC (geminate or consonant cluster) to which verbal suffixes are added. In the following examples, the epenthetic vowel is shown in the phonetic forms (first line) but not in the underlying forms (second line).

- (51a) *Apittu? ?akalasi? ?ikullifay*
Apittu-ʔ akala-si? i = kull-f-ay
 Apittu-NOM sack-DEF.M/F 3 = enter-DCAUS-PF[3M]
 ‘Apittu put the sack in the house.’
- (51b) *inantasik kutasi? ?i?akkiti*
inanta-si? kuta-si? i = akk-t-i
 girl-DEF.M/F dog-DEF.M/F 3 = see-3F-PF
 ‘The girl saw the dog.’

- (51c) *ifinaχ χala kirpa ikkirpitin*
ifina-ʔ *χala* *kirpa* *iʔ = kirp-t-i-n*
 2PL.PRO-NOM yesterday song 2 = sing-2-PF-P
 ‘You (PL) sang a song yesterday.’
- (51d) *namasiʕ tiltilaasiniʕ ʕaran intarpini*
nama-siʕ *tiltilaa-siniʕ* *ʕara-n*
 man-DEF.M/F rope-DEF.P on-PATH
- in = tarp-n-i*
 3NEG = cross-NEG-PF
 ‘The man did not cross the bridge.’

The strategy of inserting the epenthetic vowel *i* to prevent a sequence of three consonants is also attested in other Cushitic languages such as Oromo (Owens 1985:22), Diraytata (Wondwosen 2007:13), Gawwada (Geberew 2005:11), Ts’makko (Savá 2005:36) and Dhaasanac (Tosco 2001:53).

2.7. Phonological processes

In this section, I treat the phonological processes of inserting /ʔ/ to prevent onsetless syllables, as well as devoicing, assimilation, spirantisation and labialisation. These processes occur independently of the morphemes involved and independently of morphological structure. Phonological processes that are restricted to certain morphemes are discussed separately as morphophonological processes. The phonological process of inserting the epenthetic vowel *i* to avoid clusters of three consonants was already discussed in 2.6.

2.7.1. Insertion of /ʔ/

The glottal stop /ʔ/ is inserted to the initial position of words that begin with vowels to avoid syllables with empty onsets. This can be seen from the following examples in (52).

- (52a) *antiʔ ʔapittu inʔakkay*
anti-ʔ *Apittu* *in = akk-ay*
 1SG.PRO-NOM Apittor 1 = see-PF[3M]
 ‘I saw Apitto.’
- (52b) *ifeennaʔ ʔideʔti*
ifeenna-ʔ *i = dey-t-i*
 3SGF.PRO-NOM 3 = come-3F-PF
 ‘She came.’

2.7.2. Devoicing

Short vowels as well as implosives can occur devoiced. The devoicing of short vowels occurs when they appear utterance final and have low tone, as shown in (53a-c). High-toned short vowels in utterance final position are not devoiced, as in (53d).

- (53a) **raakasiʔ ʔimukti**
raaka-siʔ *i = muk-t-i*
 old.woman-DEF.M/F 3 = sleep-3F-PF
 ‘The old woman slept.’
- (53b) **antik kulin aana**
anti-ʔ *kuli = in* *aan-a*
 1SG.PRO-NOM later = 1 go-IPF.FUT
 ‘I will go later.’
- (53c) **indammɿ**
in = d̥am-ni
 1 = eat-IPF.PRES
 ‘I eat (it).’
- (53d) **indammí**
in = d̥am-n-í
 3NEG = eat-NEG-PF
 ‘He/she/they did not eat (it).’

The phenomenon of devoicing short vowels in utterance final position has been reported for Oromo (Bender, et al. 1976:132, Stroomer 1995:15).

In Konso, implosives are devoiced when they occur as geminate, as shown in (54a). Remember that consonant clusters and geminate consonants occur only in word medial position. Single implosives do not occur devoiced, as the data in (54b) show.

- (54a) /jaʔʔaa/ [jaʔʔaa] ‘weed’
 /hadʔʔaa/ [hadʔʔaa] ‘venom’
 /peeʔʔaa/ [peeʔʔaa] ‘quarrel’
 /piʔʔaa/ [piʔʔaa] crop species
- (54b) ɕoyra ‘tree’
 koda ‘work’
 hanfua ‘saliva’
 saraʔta ‘calf (of a leg)’
 daʔta ‘butter’

Except in the remainder of this chapter, I will not mark devoiced sounds in the subsequent chapters of this thesis.

2.7.3. Assimilation

As we shall see below, we find both progressive (anticipatory) and regressive assimilation. The sounds that involve phonological assimilation include the alveolar nasal /n/ and the plain stops /k/ and /p/.

The alveolar nasal as part of a lexical root or a grammatical morpheme shows progressive or regressive assimilation in place as well as voice. The assimilation may be partial or complete. Phoneme /n/ assimilates progressively in place of articulation to following plain stops, implosives and fricatives. In (55), I first give the allophones and the phonetic environments that trigger the assimilation of the phoneme /n/ in (55), and then provide illustrative examples in (56).

- (55) [ŋ] before /k/
 [N] before uvulars /χ, ʕ/
 [m̥] before /f/
 [ɲ] before palatals /c, ʃ, ʒ/
 [m] before /p/ and /b/ in verbs
- (56a) /dankaa/[dangaa] ‘throat’
 /paankaa/ [paangaa] ‘sword’
 /ponkora/ [pongora] ‘young man’
- (56b) /funχaa/ [funχaa] ‘dense (e.g. forest)’
 /fanɕala/ [fanɕala] ‘splinter’
 /ɕoonɕita/ [ɕoonɕita] ‘throat’
- (56c) /konfa/ [komfa] ‘pocketless shorts’
 /finfoota/ [fimfoota] ‘stick with metal end’
- (56d) /hanfufaa/ [hanfufaa] ‘saliva’
- (56e) impanni
in = pan-n-í
 3NEG = open-NEG-PF
 ‘He/she/they did not open the door.’

The alveolar nasal /n/ as a morpheme (for example, marking the first person plural) or part of a morpheme (for example, part of the present imperfective morpheme (-ni)) regressively and completely assimilates in place and manner

of articulation to one of these verb root final sounds *m*, *l*, *r* as can be seen from the following illustrative examples.

- (57a) *χarfasi? ʔindammj*
χarfsa-si? *in = dām-n-i*
 beans-DEF.M/F 1 = eat-1PL-PF
 ‘We ate the beans.’
- (57b) *attik kappasit tummj*
atti-ʔ *kappaa-si? = i?* *tum-ni*
 2SG.PRO-NOM wheat-DEF.M/F = 2 thresh-IPF.PRES
 ‘You (SG) are threshing the wheat.’
- (58a) *tikupa kalla*
tika-opa *kal-n-a*
 house-to return.home-1PL-OPT
 ‘Let’s go home.’
- (58b) *ǧoyraasil luukkata idallj*
ǧoyra-asi? *luukkata* *i = dāl-ni*
 tree-DEM.M/F fruit 3 = bear-IPF.PRESS
 ‘This tree bears fruit.’
- (59a) *ǧoyraasim murra*
ǧoyra-asi? *mur-n-a*
 tree-DEM.M/F cut[SG]-1PL-OPT
 ‘Let’s cut this tree.’
- (59b) *inantasi? ʔixarri*
inanta-si? *i = χar-ni*
 girl-DEF.M/F 3 = shiver-IPF.PRES
 ‘The girl is shivering.’

As can be seen from the above examples, /n/ regressively assimilates completely to a verb root final bilabial nasal as in (57) or liquid as in (58-59).

The plain stops /k/ and /p/ assimilate in voice to preceding voiced obstruents. /k/ has a voiced velar variant [g] when preceded by a voiced consonant as the data in (60a) show. /p/ has a voiced bilabial variant [b] when preceded by nasal consonants as the data in (60b) illustrate. The other plain stops /t/ and /c/ do not show voicing assimilation.

(60a) /k/ > [g]/ C- where C is a voiced phoneme

/ilkitta/	[ilgitta]	‘tooth’
/dankaa/	[daŋgaa]	‘throat’
/aykitta/	[aygitta]	grass species
/alkitta/	[algitta]	‘sisal’

(60b) /p/ > [b]/ C- where C is a nasal consonant

/rumpatta/	[rumbatta]	‘foam (of saliva)’
/tampoota/	[tamboota]	‘tobacco’
/dompolta/	[dombolta]	‘chunk of soil’
/haampata/	[haambata]	‘calabash to drink from’
/timpaa/	[timbaa]	‘drum’

2.7.4. Spirantisation

The phonemes /p/ and /b/ are spirantised and have the voiceless bilabial fricative variant [ɸ] between two vowels as in (61a), preceding or following a resonant consonant as in (61b) or following a vowel in a consonant cluster with t as a second non-sonorant as in (61c). The spirantisation of the phonemes does not take place when they occur word initial or as geminate as in (61d).

(61a)	/tapayta/	[taɸayta]	‘rat’
	/apitta/	[aɸitta]	‘fire’
	/hapura/	[haɸura]	‘spirit’
	/ɸapara/	[ɸapara]	‘rag’
	/kaba/	[kaɸa]	‘canal’
	/hiiɸa/	[hiiɸa]	‘meat soup’
(61b)	/ɸolpa/	[ɸolɸa]	‘he-goat’
	/kilpa/	[kilɸa]	‘knee’
	/ɸapna/	[ɸaɸna]	‘side of the face, temple’
	/arɸa/	[arɸa]	‘elephant’
	/silpa/	[silɸa]	‘metal, iron’
(61c)	/saalɸataa/	[saalɸataa]	‘belt’
	/kayɸaata/	[kayɸaata]	‘(skin) rash’
	/hiɸta/	[hiɸta]	‘lip’
	/saraɸta/	[saraɸta]	‘calf (of leg)’
	/ɸoɸta/	[ɸoɸta]	‘shoe’
(61d)	paala	[paala]	‘feather’
	ɸuɸɸaa	[ɸuɸɸaa]	‘egg (Karatte dialect)’
	tappa	[tappa]	‘seven’
	ɸaaɸɸaa	[ɸaaɸɸaa]	‘stretcher’

2.7.5. Labialisation

Labialisation of the initial consonant takes place when the glottal stop /ʔ/ is elided between /o/ and /a(a)/ vowels. The elision of the glottal stop results in the vowel sequence /oa(a)/. Since the language does not have diphthongs, it appears that /o/ is raised, yielding a labialised consonant. Illustrative examples are given in (61).

(61)	soʔaayta	[s ^w aayta]	‘witch doctor’
	doʔayta	[d ^w ayta]	‘hide for carrying things’
	soʔaa	[s ^w aa]	‘meat’
	loʔaa	[l ^w aa]	‘cow’

We also find labialisation when such verb roots as toʔ- ‘die [SG]’, χoʔ- ‘like very much’, doʔ- ‘to jump’ are followed by the [3M] perfect aspect marker -ay or the future imperfective aspect marker -a. For example, in (62a) t and χ are labialised because the verb roots toʔ- ‘to die’ and χoʔ- ‘to like very much’ (62b) are followed by -ay and -a, respectively. On the other hand, in (63), t and χ are not labialised because the verb roots are followed by the third person feminine gender marker -t, which does not result in the context that triggers labialisation.

- (62a) ʒimaytasiʔ ʔit^way
ʒimayta-siʔ *i = toʔ-ay*
 old.man-DEF.M/F 3 = die-PF[3M]
 ‘The old man died.’
- (62b) hamiyaasiʔ luukkata ʔiχ^wa
hamiyaa-siʔ *luukkata* *i = χoʔ-a*
 boy-DEF.M/F fruit 3 = like.very.much-IPF.FUT
 ‘The boy likes fruit very much.’
- (63a) raakasiʔ ʔitoʔti
raaka-siʔ *i = toy-t-i*
 old.woman-DEF.M/F 3 = die-3F-PF
 ‘The old woman died.’
- (63b) inantasil luukkata iχoʔta
inanta-siʔ *luukkata* *i = χoʔ-t-a*
 girl-DEF.M/F fruit 3 = like.very.much-IPF.FUT
 ‘The girl likes fruit very much.’

2.8. Morphophonemic processes

In this section, I treat the morphophonemic processes of eliding the glottal stop, and also replacing it with the palatal glide (2.8.1), metathesis (2.8.2), assimilation involving the causative and middle derivation (2.8.3), assimilation involving verb root final *t* (2.8.4), assimilation involving *n* in subject clitics (2.8.5), assimilation involving the glottal stop in cliticisation (2.8.6), vowel coalescence (2.8.7) and haplology (2.8.7). I consider processes that are restricted to certain lexemes or morphemes as morphophonemic processes.

2.8.1. Elision of /ʔ/

The glottal stop is optionally elided when it is a first member of a consonant cluster in nominals. After the elision, the vowel preceding it is lengthened. The following are illustrative examples:

(64)	/yoʔmatta/	[yoomatt̩]	‘millstone’
	/daʔta/	[daata̩]	‘butter’
	/χaʔtiya/	[χaatiy̩]	‘fly’
	/kupaʔtaa/	[kupaataa]	‘tortoise’
	/sataʔta/	[sataata̩]	‘heart’
	/toʔta/	[toot̩]	‘death’
	/kalaʔta/	[kalaata̩]	‘spider’
	/χaʔnaa/	[χaanaa]	‘waking up; resurrection’

The glottal stop /ʔ/ is optionally replaced by the glide *y* when it occurs between two vowels, of which the one following the glottal stop is a high front vowel /i/. The available examples have the singulative suffix *-itta* as in (65a). The pluralive forms of the singulatives, however, occur only with the glottal stop rather than with the palatal glide as shown in (65b); (also see Section 4.2.1).

(65a)	ɕinaʔitta	ɕinayitta	‘rib’
	χolaʔitta	χolayitta	cactus species
	maraʔitta	marayitta	grass species
	saʔitta	sayitta	‘seed corn for root crops’
	riwwaʔitta	riwwayitta	‘the Milky Way’
(65b)	ɕinaʔitta	ɕinaʔiyyaa	‘rib’
	χolaʔitta	χolaʔiyyaa	cactus species
	maraʔitta	maraʔiyyaa	grass species
	saʔitta	saʔiyyaa	‘seed corn for root crops’
	riwwaʔitta	riwwaʔiyyaa	‘the Milky Way’

2.8.2. Metathesis

The phenomenon of metathesis is limited to certain lexemes and may take place in consonant clusters or across syllables. Lexemes that allow metathesis in consonant clusters require the alveolar lateral liquid /l/ to be either the first or the second member in a consonant cluster. In some cases speakers show preference to one or the other of the forms, but in other cases no such preference is expressed. For instance, the variants listed in the left column in (66a) are preferred to those in the right column, while with the variants in (66b) no such preference is expressed.

(66a)	kilpa	~ kipla	‘knee’
	ilkitta	~ iklitta	‘tooth’
	dikla	~ dilka	‘elbow’
	poɕla	~ poɕa	‘clan chief’
	siklaa	~ silkaa	‘(poison from) bee or wasp sting’
	ɕolfaa	~ ɕoflaa	‘bark (of tree)’
(66b)	sipla	~ silpa	‘mental’
	siploota	~ silpoota	‘hoe’

Consonant clusters containing glides as a first member followed by the alveolar lateral liquid /l/ as a second member do not allow metathesis as shown in (67).

(67)	kaylaa	~ *kalyaa	‘tassel’
	pawlaa	~ *palwaa	‘old Ethiopian coin’
	hawla	~ *halwaa	‘grave, tomb’

In the following words, metathesis takes place after vowel deletion in the second syllable.

(68)	ɕosalaa	~ ɕolsaa	‘laughter’
	afuratta	~ arfatta	‘fourth’

There are certain Amharic loan words that exhibit metathesis. The first two also show metathesis in Amharic, but the last one does not undergo metathesis in this language.

(69)	kipriteeta	~ kirpiteeta	‘match’ (Amh. kibrit ~ kirbit)
	iskiriptoota	~ iskipirtoota	‘pen’ (Amh. iskiripto ~ iskipirto)
	taaksita	~ taaskita	‘taxi’ (Amh. taksi)

It is difficult to formulate a general rule for metathesis across syllables. Below, I give an exhaustive list of the nouns that show metathesis across syllables.

(70)	katipayta	~ kapitayta	plant species
	arasaa	~ asaraa	'local drink made for sale'
	punsukkayta	~ punkussayta	'owl'
	hinkaaffata	~ hinfaakkata	'ant' ⁶
	moŋoŋoŋoriŋŋa	~ moroŋoŋoŋiŋŋa	weed species

For the first three nouns, the variants on the left are preferred, while for the last two the variants do not show any preference.

As mentioned earlier, the phenomenon of metathesis is limited to certain lexemes. In the following data in (71), we find that the lexemes contain consonant clusters /lp/ or /pl/, but they do not allow metathesis. Notice that in the majority of the instances, the consonant cluster is /lp/.

(71)	saalpaŋa	*saaplaŋa	'belt'
	ŋolpa	*ŋopla	'he-goat'
	saalpuuŋaa	*saapluuŋaa	'skunk'
	palpalayta	*paplalayta	'joker.M'
	ŋalpeeta	*ŋapleeta	'good manner'
	talpooti	*taplooti	woman's name
	tulpeeta	*tupleeta	'hippopotamus'
	eplaa	*elpaa	'season when ripening begins'
	ŋalpa	*ŋapla	'seventy-five cents'
	kulpa	*kupla	'gourd for carrying water'

2.8.3. Assimilation involving the causative and middle derivation

The (direct) causative suffix -ŋ and the middle suffix -ad also involve assimilation with certain morphemes. See Section 6.1.1 and 6.1.2 for details of causative derivation and middle derivation, respectively.

The causative suffix is realised as /s/ when followed by other derivations. For example, in (72a), the causative suffix is followed by the middle derivational suffix -ad, in (72b) by the passive derivational suffix -am, and in (73) by the voiceless alveolar stop /t/. The voiceless alveolar stop may be a 3F marker (73a), second person marker (73b) or part of the verbal nominal derivational suffix -taa (73c). In fact, the voiceless alveolar stop also becomes a voiceless alveolar fricative /s/. Thus, we may argue that there is double assimilation when we have the sequence *ŋt* becoming /ss/: voiceless alveopalatal fricative *ŋ* becomes voiceless alveolar fricative *s*, and a voiceless alveolar stop /t/ also changes to a voiceless alveolar fricative *s*.

⁶ Notice that in the word *hinkaaffata* 'ant', the non-geminate consonant /k/ becomes geminate when it is relocated in the position of the geminate /j/, and the geminate /j/ becomes single when relocated in the position of the non-geminate /k/.

- (72a) **namasit tika iharmisad̥ay**
nama-siʔ tika i = harm-f-ad-ay
 man-DEF.M/F house 3 = prepare-DCAUS-MID-PF[3M]
 ‘The man prepared a house for his benefit.’
- (72b) **tomasiʔ ʔikullisamay**
toma-siʔ i = kull-f-am-ay
 bowl-DEF.M/F 3 = enter-DCAUS-PAS-PF[3M]
 ‘The bowl was moved into the house.’
- (73a) **iʃeennat talaasiniʔ ʔikalissa**
iʃeenna-ʔ talaa-siniʔ
 3SGF.PRO-NOM goats-DEF.P

i = kal-f-t-a
 3 = return.home-DCAUS-3F-IPF.FUT
 ‘She will bring the goats back home.’
- (73b) **attit taloosiniʔ ʔikkalissa**
atti-ʔ talaa-oosiniʔ
 2SG.PRO-NOM goats-DEM.P

iʔ = kal-f-t-a
 2 = return.home-DCUAS-2-IPF.FUT
 ‘You (SG) will bring the goats back home.’
- (73c) **antiʔ ʔinnaasinil luukkata d̥amissaa immalaalay**
anti-ʔ innaa-siniʔ luukkata
 1SG.PRO-NOM child-DEF.P fruit

d̥am-f-taa in = malaal-ay
 eat-DCAUS-VN 1 = be.unable.to-PF[3M]
 ‘I could not feed the child fruit.’

The voiceless palatal fricative ʃ at the end of verb roots may or may not be affected by derivational morphemes, and this calls for further investigation. If we take, for example, the verb root **d̥iʃ-** ‘to plant’, we do find that the final consonant remains the same despite being followed by a 3F morpheme (74a), a middle derivation (74b) or present imperfective suffix (74c). On the other hand, if we take the verb root **d̥iiʃ-** ‘to stop, leave’, we find that the verb root’s final ʃ is affected when followed by a 3F morpheme as in (74d) or when followed by a middle derivation as shown in (74e).

- (74a) *inantasip poɕollootasi? ʔidiʃti*
inanta-si? poɕolloota-si? i = diʃ-t-i
 girl-DEF.M/F maize-DEF.M/F 3 = plant-3F-PF
 ‘The girl planted the maize.’
- (74b) *attip poɕollootasi? ʔidiʃatta*
atti-ʔ poɕolloota-si?
 2SG.PRO-NOM maize-DEF.M/F

i = diʃ-ad-t-a
 3 = plant-MID-2-IPF.FUT
 ‘You (SG) planted the maize for your benefit.’
- (74c) *antim muusitan diʃanni*
anti-ʔ muusita = in diʃ-ni
 1SG.PRO-NOM banana = 1 plant-IPF.PRES
 ‘I plant bananas.’
- (74d) *inantasi? ʔanta idiʃsi*
inanta-si? an-ta i = diʃ-t-i
 girl-DEF.M/F go-VN 3 = stop-3F-PF
 ‘The girl stopped going.’
- (74e) *innaasinik kammaa deſa idiʃamin*
innaa-sini? kamma-a deſa i = diʃ-am-i-n
 child-DEF.P after-LOC from.side 3 = stop-PAS-PF-P
 ‘The child was abandoned.’

A verb root final *d* does not change its features when followed by vowel-initial (derivational) suffixes as in (75). However, it becomes *ʔ* when followed by consonant-initial inflectional suffixes as in (76).

- (75a) *ɣarʃasid diluppan deſa ifid-am-ay*
ɣarʃa-si? diſa-opa-n deſa
 beans-DEF.M/F field-DEST-PATH towards

i = fiʔ-am-ay
 3 = scatter-PASS-PF[3M]
 ‘The beans were scattered over the field.’
- (75b) *namasiɕ ɕoraasini? ʔihaadanni*
nama-si? ɕoraa-sini? i = haad-ad-ni
 person-DEF.M/F tree-DEF.M/F 3 = carry.PL-MID-IPF.PRES
 ‘The person carries the trees for his benefit.’

- (76a) **namasiƙ kodaasi? ʔikoʔni**
nama-si? *koda-si?* *i = kod-ni*
 person-DEF.M/F work-DEF.M/F 3 = do-IPF.PRES
 ‘The person does the work.’
- (76b) **inansiƙ ɣarʃasi? ʔifiʔti**
inanta-si? *ɣarʃa-si?* *i = fiɗ-t-i*
 girl-DEF.M/F beans-DEF.M/F 3 = scatter-3F-PF
 ‘The girl scattered the beans.’

It is interesting to see that causative and middle behave differently in that they have allomorphs in s and t, respectively, when followed by other derivations.

The causative suffix -ʃ also completely and progressively assimilates to the alveolar nasal that marks the first person plural as in (77a) or is part of the present imperfective marker -ni as in (77b).

- (77a) **indaɗinni**
in = daɗ-f-n-i
 1 = eat-DCAUS-1PL-PF
 ‘We fed (it).’
- (77b) **antih hellaan kollinni**
anti-ʔ *hella = in* *koll-f-ni*
 1SG.PRO-NOM children = 1 teach-DCAUS-IPF.PRES
 ‘I teach children.’

Concerning the assimilation of the alveolar implosive of the middle derivation, we find that there is a complete regressive assimilation of the implosive when followed by /n/ of the first person plural marker -n as in (78a) or the one which is part of the present imperfective marker -ni as in (78b).

- (78a) **ɣormasin katanna**
ɣorma-si? = in *kat-aɗ-n-a*
 ox-DEF.M/F = 1 sell-MID-1PL-IPF.FUT
 ‘We will sell the ox for our benefit.’
- (78b) **orrasɪ? ʔuntaa ipohanni**
orra-si? *ʔuntaa* *i = poh-aɗ-ni*
 people-DEF.M/F crops 3 = collect-MID-IPF.PRES
 ‘The people are harvesting crops.’

The alveolar implosive of the middle suffix is also realised as *t* when it is followed by /*t*/ that marks second person as in (79a), third person feminine as in (79b) or the /*t*/ of the verbal nominaliser *-taá* as in (79c).

(79a) *luukkatasi? ʔimmittatta*

luukkata-si? *i? = mitt-ad-t-a*
fruit-DEF.M/F 2 = pick.SG-MID-IPF.FUT
'You (SG) will pick the fruit for your benefit.'

(79b) *aturraatasiḡ ʔoyrasi? ʔiḡapatti*

aturraata-si? *ʔoyra-si* *i = ḡap-ad-t-i*
cat-DEF.M/F tree-DEF.M/F 3 = catch-MID-3F-PF
'The cat held the tree for its benefit.'

(79c) *alleeta ḡupattaá ipaḡaari*

alleeta *ḡup-ad-taá* *i = paḡaar-i*
house build-MID-VN 3 = be.good-PF
'Building a house is good for oneself.'

2.8.4. Assimilation involving verb root final *t*

The alveolar voiceless stop *t* in verb final position assimilates completely in manner of articulation to the next *n*, as the following examples show.

(80a) *okkattasil lekaytan ipanni*

okkatta-si? *lekaytan* *i = pat-ni*
cow-DEF.M/F many.times 3 = disappear-IPF.PRES
'The cow disappears many times.'

(80b) *iʔoonnaχ ʔarʔasi? ʔinkanni*

iʔoonna-ʔ *ʔarʔa-si?* *in = kat-n-í*
3PL.PRO-NOM beans-DEF.M/F 3NEG = sell-NEG-PF
'They did not sell the beans.'

2.8.5. Assimilation involving *n* in subject clitics

The alveolar nasal in subject clitics (*in=*, *an=*) assimilates partially or completely in place of articulation to the initial consonant of the verb root or noun to which a subject clitic is encliticised. It has the allomorphs listed in (81). I provide illustrative examples in (82-86).

- (81) /n/ [m] before a verb root initial bilabials / p, b, m/, as in (61)
 [l] before a verb root initial /l/, as in (62)
 [r] before a verb root initial /r/, as in (63)
 [w] before a verb root initial /w/, as in (64a)
 [y] before a verb root initial /y/, as in (64b)
 [ŋ] before a verb root initial /f/, as in (65a)
 [ŋ] before a verb root initial /k/, as in (65b)
 [N] before a verb root initial /G, ɣ/, as in (65c)
- (82a) kodaasi? ʔimpira
kodaa-si? *in = pir-a*
 work-DEF.M/F 1 = finish-IPF.FUT
 ‘I will finish the work.’
- (82b) ammukni
an = muk-n-i
 1NEG = sleep-NEG-PF
 ‘I did not sleep.’
- (83a) illella
in = lel-n-a
 1 = tell-1PL-IPF.FUT
 ‘We will tell.’
- (83b) illaa66ini
in = laa66-n-i
 1 = cross.over-1PL-PF
 ‘We crossed over.’
- (84a) irroopni
in = roop-n-i
 3NEG-rain-NEG-PF
 ‘It did not rain.’
- (84b) irrakkay
in = rakk-ay
 1 = hung.SG-PF[3M]
 ‘I hung (it).’
- (85a) poɕollootasi? ʔiwwaanni
poɕolloota-si? *in = waat-n-i*
 maize-DEF.M/F 1 = roast-1PL-PF
 ‘We roasted the maize.’

- (85b) *kappaasi?* *ʔiyyooGʔay*
kappaa-si? *in = yooGʔ-ay*
 wheat-DEF.M/F 1 = grind-PF[3M]
 ‘I ground the wheat.’
- (86a) *inʔfurʔu*
in = fur-t-u
 3NEG = untie-3F-NEG.IPF.FUT
 ‘She will not untie.’
- (86b) *tikupa inʔkala*
tika-opa in = kal-a
 house-to 1 = return.home-IPF.FUT
 ‘I will go home.’
- (86c) *ʔampirteetasi?* *ʔinʔʔaptay*
ʔampirteeta-si? *in = ʔapt-ay*
 bird-DEF.M/F 1 = throw-PF
 ‘I threw the bird.’

2.8.6. Assimilation of a glottal stop in encliticisation

The glottal stop that marks a certain grammatical function or is a final consonant of certain suffixes or words assimilates completely in place of articulation as well as manner of articulation to a following consonant. Below, I provide an exhaustive list of the suffixes or words in which the glottal stop occurs in final position.

The glottal stop that marks nominative case assimilates completely to the initial consonant of a following word as shown in (87).

- (87a) *inuʔ diluppan anni*
inu-ʔ dila-oppa = in an-n-i
 1PL.PRO-NOM field-in = 1 go-1PL-PF
 ‘We went into the field.’
- (87b) *iʔat tikaayye iʔa*
iʔa-ʔ tika-ayye i = kiy-a
 3SGM.PRO-NOM house-LOC 3 = be-IPF.FUT
 ‘He is at home.’

The suffixes that mark definiteness in Konso have a final glottal stop. This glottal stop assimilates completely to the initial consonant of a following constituent as shown in (88). For the details on definite reference, see Section 4.7.

- (88a) **attif faʒaasinip pirtj**
atti-ʔ *faʒaa-siniʔ* *iʔ=pir-t-i*
 2SG.PRO-NOM local.beer-DEF.P 2 = finish-2-PF
 ‘You (SG) finished (drinking) the local beer.’

- (88b) **antit tomasik kutta injaʒay**
anti-ʔ *toma-siʔ* *kutt-a*
 1SG.PRO-NOM bowl-DEF.M/F be.big-M/F
- in=faʒ-ay*
 1 = wash-PF[3M]
 ‘I washed the big bowl.’

The glottal stop that is the final consonant of the plural gender agreement marker *-aaʔ* in attributive adjectives also assimilates completely to the initial consonant of any following constituent. For example, the singular object noun *filaasiniʔ* ‘the comb’ in (89a) and the plural object noun *ʔokkayyaasiniʔ* ‘the cows’ (89b) have a plural gender value marked by *-aaʔ*. In these examples, we can see that the glottal stop assimilates completely to the initial consonant /p/ of the word *patta* ‘only’ (89a) and /l/ of the word *lakki* ‘two’ (89b).

- (89a) **filaasinik kuttaap pattan akkay**
filaa-siniʔ *kutt-aaʔ* *patta=in* *akk-ay*
 comb-DEF.P be.big-P only = 1 see-PF[3M]
 ‘I saw only the big comb.’
- (89b) **okkayyaasinik kukuttaal lakkin akkay**
okkayaa-siniʔ *ku-kutt-aaʔ* *lakki=in* *akk-ay*
 cows-DEF.P PL-be.big-P two = 1 see-PF[3M]
 ‘I saw the two big cows.’

The glottal stop which is the final consonant of the plural gender agreement marker *-eeʔ* in relative clauses also assimilates completely to the initial consonant of any following constituent. In example (90a), we have the singular object noun *inantasiʔ* ‘the girl’ which has a singular gender value; in example (90b) and (90c) we have the singular object noun *innaasiniʔ* ‘the child’ and the plural object noun *kaharraasiniʔ* ‘the sheep’, respectively. These nouns have a plural gender value marked by suffix *-eeʔ*. See 4.1 on plural *gender* agreement which may include numerically singular nouns.

- (90a) **inantasit tikupa deʔti pattan akkay**
inanta-siʔ *tika-opa* *dey-t-i* *patta=in*
 girl-DEF.M/F house-to come-3F-PF only = 1

akk-ay
see-PF[3M]
'I saw only the girl who came home.'

- (90b) *innaasinit tikupa dēyayeep pattan akkay*
innaa-sini? tika-opa dēy-ay-ee? patta = in
child-DEF.P house-to come-PF[3M]-P only = 1

akk-ay
see-PF[3M]
'I saw only the child who came home.'

- (90c) *kaharraasinik kakkatamayeeep pattan akkay*
kaharraa-sini? kak-kat-am-ay-ee? patta = in
sheep-DEF.P PL-sell-PAS-PF[3M]-P only = 1

akk-ay
see-PF[3M]
'I saw only the sheep that were sold.'

The glottal stop that is the final consonant of the third person possessive suffixes (-ayfu? and -ssu?) also assimilates completely to the initial consonant of any following constituent as demonstrated in (91). For details see Section 5.3.

- (91a) *okkattaayfux χala it^way*
okkatta-ayfu? χala i = to?-ay
cow-3PL.POSS.M/F yesterday 3 = die[SG]-PF[3M]
'Their cow died yesterday.'

- (91b) *okkayyaassux χala ileyin*
okkayaa-ssu? χala i = ley-i-n
cows-3PL.POSS.P yesterday 3 = die[PL]-PF-P
'Their cows died yesterday.'

The glottal stop which is the final consonant of the demonstrative suffixes -asi?/-oosi?/-oosini? also assimilates completely to the initial consonant of any following constituent as shown in (92).

- (92a) *kahartaasip piḡaasini? ḡiḡikti*
kaharta-asi? piḡaa-sini? i = ḡik-t-i
ewe-DEM.M/F water-DEF.P 3 = drink-3F-PF
'This ewe drank the water.'

- (92b) *kaharoosinip piʃaasini? ʔiʔikɨn*
kaharraa-osi? piʃaa-sini? i = ʔik-i-n
 sheep-DEM.P water-DEF.P 3 = drink-PF-P
 ‘These sheep drank the water.’

The glottal stop that marks the locative case also assimilates completely to the initial consonant of any following word as shown in (93).

- (93a) *dakaasik kirra kapax ʃaayi*
dakaa-si? kirra kapa-ʔ ʃaay-i
 stone-DEF.M/F river near-LOC put-IMP.SG
 ‘(You (SG)) Put the stone near the river!’

- (93b) *antis silpootasi? ʔintikaʔ diifay*
anti-ʔ silpoota-si? in = tika-ʔ
 1SG.PRO-NOM hoe-DEF.M/F 1 = house-LOC

diif-ay
 leave-PF[3M]
 ‘I left the hoe at home.’

The glottal stop that marks the genitive case also assimilates completely to the initial consonant of any following word (94).

- (94) *antit taamta ʒoyram muriya inheena*
anti-ʔ taamta a ʒoyra-ʔ
 1SG.PRO-NOM branch GEN tree-GEN

mur-ya in = heen-a
 cut-VN 1 = want-IPF.FUT
 ‘I want to cut a branch of a tree.’

The glottal stop which is the final consonant of the words *ifuʔ* ‘and’, *iniʔ* ‘this one’, *sedifʔ* ‘this’ and *seniʔ* ‘these’ also assimilates completely to the initial consonant of any following constituent, as illustrated in (95).

- (95a) *ana ifuk Kappooli indeʔni*
ana ʔifuʔ Kappooli in = dey-n-i
 1SG.PRO.ACC and Kappooli 1 = come-1PL-PF
 ‘I and Kappoole came.’

- (95b) *init tikaawu*
iniʔ tika-awu
 this house-1SG.POSS.M/F
 ‘This is my house.’

(95c) *sedim maana*
sedif? maana
 this what
 ‘What is this?’

(95d) *senid dillaayyu*
senif? dillaa-yyu
 these fields-1SG.POSS.P
 ‘These are my fields.’

2.8.7. Vowel coalescence

There are two instances of vowel coalescence that I have discovered. Neither instance occurs with other morphemes, but both only involve the postpositions *opa* ‘to’ and *oppa* ‘in’. The first instance involves the combination of adverbials with a final /e/ (e.g., *parre* ‘tomorrow’, *partaane* ‘after tomorrow’) and the postposition *opa* ‘to, towards’. When the words are combined, the glottal stop of the postposition is elided, resulting in the sequence /eo/. Since diphthongs are not allowed, the sequence /eo/ becomes /i/ as demonstrated in (96). The combination of such adverbials and the postposition *opa* requires such verbs as *muk-* ‘to sleep’, *ɣaay-* ‘to put, lay’, *tuukk-* ‘to push.SG’ to indicate a postponement of an appointment.

(96a) *kodoosip parripa mukinna*
kodaa-oosi-? parre-opa muk-f-n-a
 work-DEM.M/F tomorrow-to sleep-CAUS-1PL-OPT
 ‘Let’s postpone the work until tomorrow.’

(96b) *antoosip partaanipa tuukkina*
antoosi? partaane-opa
 after tomorrow-to
 ‘for the day after tomorrow’

We do not get vowel coalescence when the postposition *opa* occurs with the adverbs *aye* ‘here’ and *awwi* ‘today’. We rather get *aypa* ‘here (lit. to here)’, and *awwipa* ‘for today’, respectively.

The second instance involves the postposition *oppa* ‘in’ or *opa* ‘to, towards’ when it is attached to singulative nouns that have a final short vowel *a*. In this case, the sequence /ao/ of the final vowel of the noun and the initial vowel of the postposition produces the vowel /u/. In (97a) the vowel coalescence involves the postposition *opa* whereas (97b) shows coalescence involving the postposition *oppa*.

- (97a) **hemittaasip paraannupa tuukka**
hemitta-asi? *paraanna-opa* *tuukk-n-a*
 marriage-DEM.M/F next.year-to push.SG-1PL-OPT
 ‘Let’s postpone this wedding until next year.’
- (97b) **inud diluppan annj**
inu-? *dila-oppa = in* *an-n-i*
 1PL.PRO-NOM field-in = 1 go-1PL-PF
 ‘We went into the field.’

Furthermore, when the postpositions *kapa* ‘beside, near’ and *opa* ‘to’ are combined, we get *kapupa* ‘to’ as in (98a). The combination of the postpositions also yields *kawpa* in fast speech by eliding the first *p* of *kapupa* and changing /u/ to /w/ to avoid the vowel sequence /au/ as in (98b).

- (98a) **ana kapupa xooyi**
ana *kapa-opa* *xooy-i*
 1SG.PRO.ACC near-to come-IMP.SG
 ‘(You (SG)) Come to me!’
- (98b) **ana kawpa xooyi**
ana *kapa-opa* *xooy-i*
 1SG.PRO.ACC near-to come-IMP.SG
 ‘(You (SG)) Come to me!’

2.8.8. Haplology

The suffix *-ay*, which marks perfective aspect for third person singular masculine, is optionally elided when it is attached to a verb root that has a final *ay*. The sequence of *ay-ay* is reduced to one *ay*. Verb roots with a final *ayy* or *aay* or *aayy* do not qualify for haplology. In (99a), I provide illustrative verb roots with the final *ay*; in (99b), verb roots which end in *aay*, *ayy* and *aayy* are given for comparison.

- (99a) **kay-** ‘to reach, arrive’
tay- ‘to leave, desert’
d_hay- ‘to hit’
d_hakay- ‘to hear’
- (99b) **xaay-** ‘to put’
kayy- ‘to jump and touch’
paayy- ‘to start’

The following are illustrative sentential examples. The examples in (100a-b) occur with the reduced *-ay* while the equivalent examples in (100c-d) occur with the full verb root plus the 3M perfective suffix *-ay*.

- (100a) *if*at tikuppa ikay
ifa-ʔ *tika-oppa* *i=kay*
 3SGM.PRO-NOM house-in 3 = reach.PF[3M]
 ‘He arrived at home.’
- (100b) antiʔ ʔotootasiʔ ʔindakay
anti-ʔ *otoota-siʔ* *in = dakay*
 1SG.PRO-NOM news-DEF.M/F 1 = hear.PF[3M]
 ‘I heard the news.’
- (100c) *if*at tikuppa ikayay
ifa-ʔ *tika-oppa* *i=kay-ay*
 3SGM.PRO-NOM house-in 3 = reach-PF[3M]
 ‘He arrived at home.’
- (100d) antiʔ ʔotootasiʔ ʔindakayay
anti-ʔ *otoota-siʔ* *in = dakay-ay*
 1SG.PRO-NOM news-DEF.M/F 1 = hear-PF[3M]
 ‘I heard the news.’

The sentential example in (101a) has the verb root *kayy-* ‘to jump and touch’. It ends in *ayy* and has the third person masculine perfective suffix *-ay*. And as mentioned above, such verb roots do not allow the reduction of the perfective *-ay* suffix as shown in (101b).

- (101a) Kappoolit taamtasiʔ ʔikayyay *i=kayy-ay*
Kappooli-ʔ *taamta-siʔ* 3 = jump.and.touch-PF[3M]
 kappoole-NOM branch-DEF.M/F
 ‘Kappoole jumped and touched the branch.’
- (101b) *kappoolit taamtasiʔ ʔikayy
kappooli-ʔ *taamta-siʔ* *i=kayy*
 kappoole-NOM branch-DEF.M/F 3 = jump.and.touch
 (intended: ‘Kappoole jumped and touched the branch.’)

2.9. Tone

Konso has low and high tone levels which do not have a lexical role, but rather a grammatical role. In this work, only high tone is marked with an acute stroke (´). Despite my countless efforts, and the many efforts I made with colleagues like Constance Kutsch Lojenga and Anne-Christie Hellenthal, the full account

of tone (or maybe pitch-accent) of the language still remains ill understood. The grammatical roles of tone that I am able to identify include making a distinction between the nominative and the accusative (cleft construction) and indicating contrasts in person-marking between some affirmative and negative paradigms.

The tonal distinction between nominative and accusative case is that a noun in the nominative has a low tone as in (102a) while the same noun has a high tone in the accusative case as in (102b). The sentence in (102b) is a cleft construction (details appear in Section 3.5).

- (102a) **oraaytaa kuta ɕaniinay**
oraayta=i kuta ɕaniin-ay
 hyena = 3 dog bite-PF[3M]
 ‘A hyena bit a dog.’

- (102b) **oraaytaá kuta ɕaniinay**
oraayta=í kuta ɕaniin-ay
 hyena = 3.ACC dog bite-PF[3M]
 ‘It is a dog that bit a hyena.’

Another grammatical role that tone plays is that it distinguishes first person singular present imperfective (103a) from third person perfective negative, as in (103b). It also distinguishes first person singular in the present imperfective (103a repeated as 104a) from first person plural in the perfective as in (104b). In this case, the final vowel of the sentence with the first person singular carries a low tone whereas the third person or first person plural has a high tone as illustrated in (103). The distinction between the first person plural and the third person negative is made only on the basis of a discourse context.

- (103a) **inanni**
in = an-ni
 1 = go-IPF.PRES
 ‘I go/I am going.’

- (103b) **in = an-n-í**
 3NEG = go-NEG-PF
 ‘He/She/They did not go.’

- (104a) **inanni**
in = an-ni
 1 = go-IPF.PRES
 ‘I go/I am going.’

(104b) in = an-n-í
1 = go-1PL-PF
'We went.'