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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.

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>(Alveo)-palatal</th>
<th>Velar</th>
<th>Uvular</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain stops</td>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td>y</td>
<td>ʔ</td>
</tr>
<tr>
<td>Implosives</td>
<td>ɓ</td>
<td>ɗ</td>
<td>ʄ</td>
<td>ʛ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>m</td>
<td>n</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>f</td>
<td>s</td>
<td>ʃ</td>
<td>χ</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Liquids</td>
<td>l, r</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glides</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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, Gebere 2005). Diraytata and Muusiye 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; Stroomer 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 (Gebere 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 /ɓ/; palatal ejective /c'/ changes to palatal implosive /ʄ/. A velar ejective /k'/ changes to uvular implosive /ʛ/. 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'/ > /ɓ/ 
    t'ærp'ezza lap'p'is  taraɓeessaa laaɓiseeta  'table’  'eraser, rubber’

(1b) /t'/ > /t/ 
    seyt’an t'ɨyyɨt  seetana tiyyiteeta  'Satan’  'bullet’

(1c) /s'/ > /s/ 
    s’əlot ʃɨggut'  salootita ʃukkuteeta  'prayer’  'pistol’

Amharic does not have implosive consonants, but Oromo has the alveolar /ɗ/, and Diraytata has the bilabial and alveolar implosives /ɓ/ and /ɗ/. 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 haaɗa ‘mother’ as it is, although in Konso the word for ‘mother’ is aayyaa. Thus /ɗ/ 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.
    pijaa  ‘water’
    pora  ‘road, place’
    hapura  ‘spirit’
    torpaa  ‘week’
(3) /ɓ/ is a bilabial implosive. It is very rare in word-initial position.

ɓaɓɓaʃa ‘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’
kaɓa ‘clan’

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

waacɓa ‘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’
dikla ‘elbow’
hidana root crop species
 tandaa ‘drink prepared without malt’

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

nama ‘person, man’
nessa ‘soul’
soona ‘nose’
ʃiŋda ‘side’
(10) /s/ is an alveolar voiceless fricative.

<table>
<thead>
<tr>
<th>Sinđaan</th>
<th>‘urine’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solaa</td>
<td>‘bird tail’</td>
</tr>
<tr>
<td>Kusumta</td>
<td>‘navel’</td>
</tr>
<tr>
<td>Kawasa</td>
<td>‘beard’</td>
</tr>
</tbody>
</table>

(11) /l/ is an alveolar lateral voiced liquid.

<table>
<thead>
<tr>
<th>Lečaan</th>
<th>‘loan’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leemmuta</td>
<td>‘bubble’</td>
</tr>
<tr>
<td>Paleeta</td>
<td>‘village’</td>
</tr>
<tr>
<td>Kolalta</td>
<td>‘acacia tree’</td>
</tr>
</tbody>
</table>

(12) /r/ is an alveolar voiced trill.

<table>
<thead>
<tr>
<th>Roopa</th>
<th>‘rain’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Račaan</td>
<td>type of hut</td>
</tr>
<tr>
<td>Para</td>
<td>‘year’</td>
</tr>
<tr>
<td>Karkaa</td>
<td>‘beehive’</td>
</tr>
</tbody>
</table>

(13) /c/ is an alveo-palatal voiceless plain stop. It is the rarest phoneme and but it occurs as a single consonant in the common verb root c- ‘to be, exist’. Underlyingly the verb root is kiy- or kit- as shown in the sentential examples in (14).

(14a) iʃaʔ ʔaye ʔica
     iʃaʔ-ʔ     aye  i=kiy-a
     3SGM.PRO-NOM here 3=be-IPF.FUT
‘He is here.’

(14b) iʃeennaʔ ʔaye ikitta
     iʃeennaʔ-ʔ  aye  i=kit-t-a
     3SGF.PRO-NOM here 3=be-3F-IPF.FUT
‘She is here.’

The nouns caattaa ‘life’ < c-aad-ta > and acuunna (a woman’s personal name), the interjection (see Chapter 13) hec, which is used to chase away a cow or ox, also contain a single /c/.

The occurrence of /c/ as a geminate consonant is also quite limited in verbs as well as in nouns. There are only two verb roots I know of in which it occurs as geminate: χaccad- ‘to stink, smell bad’ and hoɔɔad- ‘to work, do’. The latter verb root is also pronounced as hoʃʃad- (cf. Oromo hoɔɔʤʤad- ‘to work’). In nouns, there are certain proper names in which /c/ occurs as a geminate. Except
for the nominals \( \chi \text{accumaa} \) ‘stinking, smelling bad’ and \( \text{hoccaaa} \) ‘work’ derived from the verb roots \( \chi \text{accad-} \) ‘to stink, smell bad’ and \( \text{hoccaad-} \) ‘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  
paaccaaa a male or female person’s name

(16) /ʃ/ is a palatal implosive.

\( \text{jolta} \) ‘blind person’  
\( \text{jačaa} \) ‘local beer’  
\( \text{kaafaa} \) ‘money’  
\( \text{marfaa} \) ‘hip flesh (human)’

(17) /ɲ/ is a palatal nasal voiced.

\( \text{naaŋnaa} \) ‘tomato’  
\( \text{naapa} \) ‘enemy’  
\( \text{kuŋnata} \) ‘gnat’

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

\( \text{jehota} \) ‘grass snake’  
\( \text{jaɓɓaa} \) ‘stretcher’  
\( \text{piʃaa} \) ‘water’  
\( \chi \text{arʃa} \) ‘beans’

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

\( \text{yaaya} \) type of bead  
\( \text{yooyta} \) ‘jackal’  
\( \text{taahayta} \) ‘sand’  
\( \text{torrayta} \) ‘locust’

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

\( \text{keraa} \) ‘thief’  
\( \text{kirra} \) ‘river’  
\( \text{raaka} \) ‘old woman’  
\( \text{maakaa} \) ‘snake’
(21) /d/ is a uvular implosive.

χayranta ‘leopard’
χapaleeta ‘monkey’
telχayta lizard species
fẹferta tree species

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

χolaa ‘hot drink made mainly from coffee leaves’
χala ‘yesterday’
moχna ‘rocky place’
ʔarχatta ‘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’
hotarreata 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 /ɓ, ɗ, ʄ, ʛ/

(26) /ɓ/ and /ɗ/  haafuta  a children’s game
     haadita  ‘load, burden’

     /ɓ/ and /ʄ/  kaafaa  man’s name
     kaafaa  ‘money’

     /ɓ/ and /ʛ/  leɓi  ‘kick (many times/things)!’
     leʛi  ‘smear (many times)!’

     /ɗ/ and /ʄ/  ḏakara  ‘old coin token’
     ḏakara  ‘piece of old cloth’

     /ɗ/ and /ʛ/  ḏarta  ‘lie (untruth)’
     ḏarta  ‘firstborn son’

     /ʄ/ and /ʛ/  ʄoraa  ‘coin purse’
     ʄoraa  ‘trees’

Nasals /m, n, ɲ/

(27) /m/ and /n/  maalaa  ‘cutting crops randomly’
     naalaa  ‘spoilt behaviour’

     /m/ and /ɲ/  maraa  ‘hillside’
     maraa  ‘contention, threat’

     irma  ‘wheat/barley stalk’
     ɪɾna  ‘gum’

     /n/ and /ɲ/  napa  ‘soot’
     ɲapa  ‘enemy’

Plain voiceless stops and implosives

(28) /p/ and /ɓ/  kapa  ‘near’
     kaɓa  ‘canal’
2.1.3. Gemination

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’

/?/ and /??/  iʔanti ‘She went.’  iʔʔanti ‘You (SG) went.’

/d/ and /ddf/  hidana root crop species

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2 *faatta* has a variant with glottal stop /ʔ/: faʔatta.
hiɗɗana  ‘bundle’

/k/ and /ʄʄ/  kaafaa  ‘money’

/kaiɗ(aa)/  a children’s game

/d/ and /ʣʣ/  peecfaa  ‘metal or clay plate for baking’

/pəcʃʃaa/  ‘quarrel, dispute’

/m/ and /mm/  kamaa  ‘hillside’

/kammaa/  ‘behind, after’

/n/ and /nn/  mana  ‘hut’

/mn̩aa/  ‘huts’

/f/ and /ff/  tafa  ‘type of game played by males’

/tʃʃaa/  ‘thighs’

/s/ and /ss/  pisa  ‘flower’

/pisʃa/  ‘complexion (of a sick person)’

/h/ and /hh/  mehi  ‘Shake (many times) to dry!’

/mehhi/  ‘Shake (once) to dry!’

/j/ and /ʃʃ/  haaʃʃaa  ‘as in haaʃʃaa haaڈi  ‘Get lost!’

/haaʃʃaa/  ‘leaf, leaves’

/l/ and /ll/  dila  ‘charcoal’

/ddła/  ‘fields, farms’

/r/ and /rr/  ɣara  ‘shivering, trembling’

/ɣarra/  ‘door, gate’

/w/ and /ww/  dawiyaa  ‘hitting (something)’

/adwiyiaa/  ‘herding’

/y/ and /yy/  ɣaaya  ‘labour (childbirth)’

/ɣaayya/  ‘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 latter, 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, ?, 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.

<table>
<thead>
<tr>
<th>Medial</th>
<th>Initial</th>
<th>C-</th>
<th>V-V</th>
<th>Geminate</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td>poorta</td>
<td>χapnaa³</td>
<td>kilpa</td>
<td>tapayta</td>
</tr>
<tr>
<td></td>
<td>‘barley’</td>
<td>‘forest’</td>
<td>‘knee’</td>
<td>‘rat’</td>
</tr>
<tr>
<td>/t/</td>
<td>tawna</td>
<td>-----</td>
<td>farta</td>
<td>ditiitaa</td>
</tr>
<tr>
<td></td>
<td>‘bell’</td>
<td></td>
<td>‘horse’</td>
<td>‘sweat’</td>
</tr>
<tr>
<td>/k/</td>
<td>karitta</td>
<td>mikta</td>
<td>karkaa</td>
<td>saka</td>
</tr>
<tr>
<td></td>
<td>‘belly’</td>
<td>‘right hand’</td>
<td>‘beehive’</td>
<td>‘blessing’</td>
</tr>
<tr>
<td>/ʔ/</td>
<td>-----</td>
<td>yɔʔmattaa</td>
<td>-----</td>
<td>χolaʔitta</td>
</tr>
<tr>
<td></td>
<td>‘millstone’</td>
<td></td>
<td>‘sp. of cactus’</td>
<td>‘You (SG) went.’</td>
</tr>
<tr>
<td>/c/</td>
<td>caattaa</td>
<td>-----</td>
<td>incaa</td>
<td>icaa</td>
</tr>
<tr>
<td></td>
<td>‘life’</td>
<td></td>
<td>‘I exist’</td>
<td>‘He exists.’</td>
</tr>
</tbody>
</table>

Table 2: Distribution of plain stops

Implosives /ɓ, ɗ, ʄ, ʛ/

All implosive consonants occur in word initial position. /ɓ/ is the rarest in this position. Except for /ʄ/, 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.

3 χapnaa is a forest that belongs to the clan chief’s family, mainly around their homestead.
Table 3: Distribution of implosives

<table>
<thead>
<tr>
<th>Initial</th>
<th>Medial</th>
<th>V-V</th>
<th>Geminate</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ɓ/</td>
<td>ɓaalɓaala</td>
<td>hibta</td>
<td>kolɓa</td>
</tr>
<tr>
<td>‘big-bellied’</td>
<td>‘lip’</td>
<td>‘water reservoir in the field’</td>
<td>‘canal’</td>
</tr>
<tr>
<td>/ɗ/</td>
<td>dakaa</td>
<td>mudkahanta</td>
<td>sindaa</td>
</tr>
<tr>
<td>‘stone’</td>
<td>sp. of plant</td>
<td>‘urine’</td>
<td>‘work’</td>
</tr>
<tr>
<td>/ʄ/</td>
<td>fupbaa</td>
<td>furfaa</td>
<td>paafuta</td>
</tr>
<tr>
<td>‘weed’</td>
<td>‘baby’s faeces’</td>
<td>‘sideburns’</td>
<td>crop species</td>
</tr>
<tr>
<td>/ʄ/</td>
<td>ciyra</td>
<td>pocfaa</td>
<td>marcfaa</td>
</tr>
<tr>
<td>‘tree’</td>
<td>‘chief, king’</td>
<td>‘intestine’</td>
<td>‘disease’</td>
</tr>
</tbody>
</table>

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, χ, 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.

Table 5: Distribution of fricatives

<table>
<thead>
<tr>
<th>Sound</th>
<th>Initial</th>
<th>Medial</th>
<th>Geminate</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>/f/</td>
<td>farta</td>
<td>lafta</td>
<td>konfa</td>
<td>kafa</td>
</tr>
<tr>
<td></td>
<td>‘horse’</td>
<td>‘bone’</td>
<td>‘shorts’</td>
<td>‘clan’</td>
</tr>
<tr>
<td>/s/</td>
<td>maka</td>
<td>koskorta</td>
<td>kawsa</td>
<td>piisa</td>
</tr>
<tr>
<td></td>
<td>‘blessing’</td>
<td>‘partridge’</td>
<td>‘beard’</td>
<td>‘all’</td>
</tr>
<tr>
<td>/ʃ/</td>
<td>jaabbaa</td>
<td>koʃkoʃa</td>
<td>teʔʃaa</td>
<td>pʃaa</td>
</tr>
<tr>
<td></td>
<td>‘stretcher’</td>
<td>‘(chicken’s) comb’</td>
<td>‘elephantiasis’</td>
<td>‘water’</td>
</tr>
<tr>
<td>/χ/</td>
<td>χolmaa</td>
<td>moχna</td>
<td>mαχaa</td>
<td>οχinta</td>
</tr>
<tr>
<td></td>
<td>‘neck’</td>
<td>‘rocky area’</td>
<td>‘flood’</td>
<td>‘fence’</td>
</tr>
<tr>
<td>/h/</td>
<td>harreeta</td>
<td>pohmayta</td>
<td>-----</td>
<td>taahayta</td>
</tr>
<tr>
<td></td>
<td>‘donkey’</td>
<td>‘chameleon’</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 6: Distribution of liquids

<table>
<thead>
<tr>
<th>Sound</th>
<th>Initial</th>
<th>Medial</th>
<th>Geminate</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>/l/</td>
<td>lakki</td>
<td>olsa</td>
<td>hawla</td>
<td>dila</td>
</tr>
<tr>
<td></td>
<td>‘two’</td>
<td>‘dream’</td>
<td>‘grave’</td>
<td>‘farm’</td>
</tr>
<tr>
<td>/r/</td>
<td>roopa</td>
<td>marknnaa</td>
<td>dayarnta</td>
<td>para</td>
</tr>
<tr>
<td></td>
<td>‘rain’</td>
<td>‘intestine’</td>
<td>‘leopard’</td>
<td>‘year’</td>
</tr>
</tbody>
</table>

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.
Table 7: Distribution of glides

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Medial</th>
<th>V-V</th>
<th>Geminate</th>
</tr>
</thead>
<tbody>
<tr>
<td>/w/</td>
<td>waaca</td>
<td>tawna</td>
<td>----</td>
<td>claawa</td>
</tr>
<tr>
<td></td>
<td>‘God’</td>
<td>‘bell’</td>
<td></td>
<td>kawwatta</td>
</tr>
<tr>
<td>/y/</td>
<td>yaakata</td>
<td>qimayta</td>
<td>----</td>
<td>muutiya</td>
</tr>
<tr>
<td></td>
<td>‘bead’</td>
<td>‘old man’</td>
<td></td>
<td>tuuyyata</td>
</tr>
</tbody>
</table>

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.

Table 8: Konso vowel phonemes

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Centre</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>i</td>
<td>u</td>
<td>uu</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>ee</td>
<td>o</td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td>aa</td>
<td></td>
</tr>
</tbody>
</table>

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

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>iita</td>
<td>‘eye’</td>
<td></td>
</tr>
<tr>
<td>qinaʔitta</td>
<td>‘rib’</td>
<td></td>
</tr>
<tr>
<td>tiraa</td>
<td>‘liver’</td>
<td></td>
</tr>
</tbody>
</table>

/e/ mid front vowel

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ekerta</td>
<td>‘olive’</td>
<td></td>
</tr>
<tr>
<td>parre</td>
<td>‘tomorrow’</td>
<td></td>
</tr>
<tr>
<td>kereʔta</td>
<td>‘thieves’</td>
<td></td>
</tr>
</tbody>
</table>
/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

oχinta ‘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  ‘daily labour for money’
    keraa  ‘thief’

    /i/ and /u/  
    tiraa  ‘liver’
    turaa  ‘in front of’

    /i/ and /a/  
    hiɓta  ‘lip’
    haɓta  ‘border; foreign country’

    /i/ and /o/  
    χaʔnaa  ‘rise, ascension’
    χoʔnaa  ‘favourite’

    /e/ and /a/  
    ferta  ‘small metal tool’
    farta  ‘horse’

    /e/ and /u/  
    feraa  ‘harvesting’
    furaa  ‘padlock, key’

    /e/ and /o/  
    ekta  ‘tail’
    oktaa  ‘pot’
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  ‘runny honey’  
     meela  ‘animal body part (e.g. leg)’

/ii/ and /uu/  
     diika  ‘blood’  
     duuka  ‘yoghurt’

/ii/ and /aa/  
     piisa  ‘all’  
     paasa  plant species

/ii/ and /oo/  
     fiïfaa  ‘cursing’  
     fóofaa  ‘roughly ground grain’

/aa/ and /uu/  
     ciâaddfaa  ‘cow/ox cage, barn’  
     ciâuddfaa  type of grain store

/aa/ and /ee/  
     yaala  ‘labour, toiling’  
     yeela  ‘field along a river bank’

/aa/ and /oo/  
     kaattaa  ‘shade’  
     koottaa  ‘anus, bottom’

/uu/ and /ee/  
     kuur-  ‘to choke’  
     keer-  ‘to run [SG]’

/uu/ and /oo/  
     puulluta  ‘dough (fermented flour)’  
     poolluta  ‘hole in the ground’

/ee/ and /oo/  
     neédufuta  ‘hatred’  
     nooodfuta  ‘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/  
    pisaa  ‘flower’  
    pisaa  ‘all’

/e/ and /ee/  
    χela  ‘age mate’  
    χeela  ‘border, boundary’

/u/ and /uu/  
    furaa  ‘pad lock, key’  
    fuuraa  ‘fear’

/o/ and /oo/  
    foraa  ‘jumping’  
    foora  ‘thin stick to punish children with’

/a/ and /aa/  
    saraa  ‘plunder, looting’  
    saaraa  ‘poem’

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

(35) /a/ and /aa/  
    diila  ‘field, farm’  
    diilaa  ‘charcoal’

    moora  ‘fat’  
    mooraa  ‘public meeting place’

    χoora  ‘gathering’  
    χooraa  ‘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.
Table 9: Possible sequences of vowels in lexical items

<table>
<thead>
<tr>
<th>a</th>
<th>e</th>
<th>i</th>
<th>o</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>nama</td>
<td>maχeena</td>
<td>karitta</td>
<td>aakkootita</td>
</tr>
<tr>
<td></td>
<td>‘person’</td>
<td>‘barren cow’</td>
<td>‘stomach’</td>
<td>‘female animal’</td>
</tr>
<tr>
<td>e</td>
<td>seyta</td>
<td>sereeruta</td>
<td>seettitaa</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>‘plant sp.’</td>
<td>‘diarrhoea’</td>
<td>‘upper part of foot’</td>
<td>‘dinner’</td>
</tr>
<tr>
<td>i</td>
<td>mikta</td>
<td>pileeta</td>
<td>irritta</td>
<td>silpoota</td>
</tr>
<tr>
<td></td>
<td>‘right hand’</td>
<td>‘insect that feeds on moistened leather’</td>
<td>‘upper arm’</td>
<td>‘hoe’</td>
</tr>
<tr>
<td>o</td>
<td>toma</td>
<td>pokkeeta</td>
<td>sookitta</td>
<td>poc̄oota</td>
</tr>
<tr>
<td></td>
<td>‘bowl’</td>
<td>type of shorts</td>
<td>‘salt’</td>
<td>‘mandible’</td>
</tr>
<tr>
<td>u</td>
<td>kuma</td>
<td>kulleeta</td>
<td>ɕu̠pitta</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>‘thousand’</td>
<td>‘hat’</td>
<td>‘finger’</td>
<td>‘mandible’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘frog’</td>
</tr>
</tbody>
</table>

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.
Table 10: Pain stop as a first member of a consonant cluster

<table>
<thead>
<tr>
<th>Plain stop</th>
<th>Nasal</th>
<th>Fricative</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>sataʔta</td>
<td>ʔapnaa</td>
<td>ipsaa</td>
<td>sipla</td>
</tr>
<tr>
<td>‘lung’</td>
<td>‘possession’</td>
<td>‘light’</td>
<td>‘metal’</td>
</tr>
<tr>
<td>apteeenta</td>
<td>χaʔmaa</td>
<td>ʔepʃi</td>
<td>dikla</td>
</tr>
<tr>
<td>‘snow’</td>
<td>‘rising’</td>
<td>‘Break (it)!’</td>
<td>‘elbow’</td>
</tr>
<tr>
<td>takma</td>
<td>ʔepʃi</td>
<td>teʔʃaa</td>
<td></td>
</tr>
<tr>
<td>‘honey’</td>
<td></td>
<td>‘elephantiasis’</td>
<td></td>
</tr>
<tr>
<td>yoʔmaa</td>
<td>ʔapnaa</td>
<td>kiʔsaa</td>
<td></td>
</tr>
<tr>
<td>‘grindstone’</td>
<td></td>
<td>‘fireplace’</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Implosive</th>
<th>Plain stop</th>
<th>Liquid</th>
<th>Fricative</th>
</tr>
</thead>
<tbody>
<tr>
<td>sarabta</td>
<td>sarabta</td>
<td>pocfa</td>
<td>siɓʃi</td>
</tr>
<tr>
<td>‘calf (leg)’</td>
<td>‘calf’</td>
<td>‘chief’</td>
<td>‘Hang!’</td>
</tr>
<tr>
<td>mudkahanta</td>
<td>mudkahanta</td>
<td>joloʃoʃoʃita</td>
<td>macʃi</td>
</tr>
<tr>
<td>plant</td>
<td>species</td>
<td>‘claw’</td>
<td>‘Divert!’</td>
</tr>
<tr>
<td>loʛsiʔ</td>
<td>saraɓsiʔ</td>
<td></td>
<td>saraɓsiʔ</td>
</tr>
<tr>
<td>‘this calf (of the leg)’</td>
<td>‘this calf (of the leg)’</td>
<td>‘this leg’</td>
<td></td>
</tr>
</tbody>
</table>

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).
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 ʃn or sn clusters.

<table>
<thead>
<tr>
<th>Fricative</th>
<th>Plain stop</th>
<th>Implosive</th>
<th>Fricative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fricative</td>
<td>Plain stop</td>
<td>Implosive</td>
<td>Fricative</td>
</tr>
<tr>
<td>kanta</td>
<td>'neighbour'</td>
<td>sindaa</td>
<td>‘urine’</td>
</tr>
<tr>
<td>kaŋkita</td>
<td>‘mule’</td>
<td>šalapaŋalleeta</td>
<td>plant species</td>
</tr>
<tr>
<td>ʃampirteeta</td>
<td>‘bird’</td>
<td>fanaŋala</td>
<td>‘splinter’</td>
</tr>
<tr>
<td>taamta</td>
<td>‘branch’</td>
<td>dunaŋduuma</td>
<td>‘from elbow to fingertip’</td>
</tr>
</tbody>
</table>

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

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

(36)  təfləra < Amh. ɗabtar ‘exercise book’ > tɔflɔtɔtita < Amh. ḏoktar ‘doctor’ >

A liquid may be followed by a plain stop, implosive, nasal or a fricative as shown in table 14.
Table 14: Liquid as a first member of a consonant cluster

<table>
<thead>
<tr>
<th>Liquid</th>
<th>Plain stop</th>
<th>Implosive</th>
<th>Nasal</th>
<th>Fricative</th>
</tr>
</thead>
<tbody>
<tr>
<td>kilpa ‘knee’</td>
<td>tulta ‘back’</td>
<td>baalbaala ‘potbelied’</td>
<td>yolmaa ‘neck’</td>
<td>χolfa ‘earring’</td>
</tr>
<tr>
<td>alkitta ‘sisal’</td>
<td></td>
<td>ipaldì ‘It is wide’</td>
<td>urmalaa ‘market’</td>
<td>olsaa ‘dream’</td>
</tr>
<tr>
<td>arpa ‘elephant’</td>
<td></td>
<td>telcayta ‘lizard’</td>
<td>irna ‘gum’</td>
<td>malyaa ‘flood’</td>
</tr>
<tr>
<td>kaharta ‘ewe’</td>
<td></td>
<td>sarbba ‘leg calves’</td>
<td></td>
<td>nirfaa ‘hair’</td>
</tr>
<tr>
<td>murkuaa ‘fish’</td>
<td></td>
<td>pardoota BG</td>
<td></td>
<td>marsaa ‘buttocks’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tardaa ‘ash’</td>
<td></td>
<td>karsatta tree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>marfja ‘hip flesh’</td>
<td></td>
<td>species</td>
</tr>
<tr>
<td></td>
<td></td>
<td>marcinaa ‘intestine’</td>
<td></td>
<td>χaryaraya ‘warthog’</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Glide</th>
<th>Plain stop</th>
<th>Implosive</th>
<th>Nasal</th>
<th>Fricative</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>kawpa ‘beside’</td>
<td>sawdatta ‘clan name’</td>
<td>tawna ‘bell’</td>
<td>yewsi ‘this’</td>
<td>dawraa ‘prohibition’</td>
<td></td>
</tr>
<tr>
<td>kawkawa ‘jaw’</td>
<td>haydàa ‘meat fried with butter’</td>
<td>χaynaʔtua ‘thread’</td>
<td>sayleeta ‘mane’</td>
<td>sayleeta ‘prohibition’</td>
<td></td>
</tr>
<tr>
<td>aykitta ‘grass species’</td>
<td></td>
<td>deymatta ‘irony’</td>
<td>aylaa ‘sowing (seeds)’</td>
<td>aylaa ‘sowing (seeds)’</td>
<td></td>
</tr>
</tbody>
</table>

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/ | ʔooʔuʃita  
|            | doooʃita | ‘mud’ |
| /l/ and /d/ | darta    
|            | darɗa | ‘lie, untruth’ |
| /l/ and /n/ | taakite 
|            | taakine | ‘otherwise’ |
| /l/ and /l/ | haaruta 
|            | haaluta | ‘revenge’ |
|            | ?arɗuʃaa 
|            | ?alɗuʃaa | type of bean |
| /ʃ/ and /k/ | furtaa 
|            | kurtaa | ‘(woman’s) cotton belt’ |
| /ʃ/ and /h/ | ʃiparaa 
|            | hiparaa | ‘bat (animal)’ |
| /ʃ/ and /m/ | kurrumʃaa 
|            | kurrufʃaa | ‘droppings (of sheep or goats)’ |
| /ʃ/ and /ʃ/ | ʃorrooʃita 
|            | ʃorroofita | cockroach species |
| /ʃ/ and /w/ | payraa 
|            | pawraa | type of farm tool |
| /ʃ/ and /y/ | ʔaye 
|            | ?aye | ‘here’ |
| /k/ and /ɛ/ | kompalmarta 
|            | χompalmarta | ‘cactus’ |
| /k/ and /ʃ/ | kiwwayta 
|            | χiwwwayta | ‘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.
Certain lexical items also involve variation in gemination. These are given in table 18.

| /ʃʃ/ and /cc/ | ciromaʃʃa  | ‘medicine’ |
| /ɓɓ/ and /ʔʔ/ | leebbbuta  | type of dance |
| /dd/ and /nn/ | helaadda  | ‘earlier this day’ |
| /tt/ and /nn/ | paraatta  | ‘next year’ |
| /tt/ and /ʃʃ/ | laaʃʃittaa  | ‘ram’ |

Table 17: Lexical variation involving geminate consonants

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

| /p/ and /pp/ | teepaa  | ‘rope’ |
| /χ/ and /χχ/ | deeχa  | ‘lawsuit’ |
| /t/ and /rr/ | diraa  | ‘men’ |

|  | tupaara  | ‘girls’ |

Table 18: Lexical variations involving gemination

---

5 The other form for ‘ram’ is laha. Notice that laha is irregular and that the itta of laaʃʃittaa cannot be considered to be suffix here (but see 4.2.1). The ʃʃ of the form laaʃʃittaa is not a suffix at all.
Table 20: Lexical variations involving short vowels

| /i/ and /u/ | fiɓɓoota | 'sin' |
| /i/ and /e/ | inanta | 'girl' |
| /i/ and /a/ | jiwwayta | 'calabash with strip to sling on the shoulder' |
| /e/ and /a/ | pelɗaa | 'young animals, birds' |

Table 21: Lexical variation involving long vowels

| /aa/ and /oo/ | taakite | 'otherwise' |
| /aɑ/ and /eε/ | pottaata | 'pumpkin' |
| /oo/ and /ii/ | soonaa | 'nose' |

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) $C_1V.C_2V$
- pora ‘road’
- tika ‘house’

$C_1VC_2.C_3V$
- dahta ‘firefly’
- harka ‘hand’
- tawna ‘bell’
- χolfa ‘earring’

$C_1V.C_2VV$
- taraa ‘ash’
- diłaa ‘charcoal’
- kosaa ‘granary’
- tiraa ‘liver’

$C_1VC_2.C_3VV$
- karmaa ‘lion’
- kandaa plant species
- karkaa ‘beehive’
- χirfaa ‘hair’

$C_1VC_2.C_2VV$
- faɓɓaa ‘weed’
- kappa ‘wheat’

$C_1VV.C_2V$
- miira ‘anger’
- kuufa ‘manure, pile of cow dung’
- moora ‘fat’

$C_1VVC_2.C_3V$
- moonta ‘sky’
- poorta ‘barley’
- tookta ‘profit’

$C_1VVC_2.C_2V$
- mootta ‘friend’
- teetta ‘threshing ground’

$C_1VV.C_2VV$
- maakaa ‘snake’
- mooraa ‘public place’
- tooraa ‘opposition’
C₁VVC₂C₂3VV
aappaa ‘father’
aakkaa ‘grandfather’
paankaa ‘machete’
waaanka ‘wooden grave monument’
aanana ‘milk’

(38b) C₁V.C₂VC₃C₃₄V
dupitta ‘finger’
apitta ‘fire’
ilkitta ‘tooth’
dákinta ‘body, skin’
sataita ‘heart’
kollatta ‘hide’

C₁V.C₂VV.C₃V
mukuuka ‘wooden tool for weaving’
duokeeta ‘wood dust produced by wood-boring insects’

C₁VC₂C₂₃VV.C₄V
silpoota ‘hoe’
talteeta ‘she-goat’
pottaata ‘pumpkin’
kulleeta ‘cape’

C₁VV.C₂V.C₃V
duusuta ‘fart’
mukuta ‘frog’
paaftuta ‘sideburns’

C₁VVC₂C₂3V.C₃₄V
poolluta ‘a hole in the ground’
maammata ‘aunt’
lacchuta ‘bread’

C₁VC₂C₃VC₃C₄V
partupta ‘September’
parnanta ‘split between buttocks’

C₁VC₂C₃VVC₄C₄V
halkeetta ‘night’

C₁V.C₂VVC₃C₃₄V
pakaanana edible tuber species

(38c) C₁C₂V.C₃VC₄C₄V
cinaittta ‘rib’
maraittta grass species
colaittta 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  
dam-  ‘to eat’  
muk-  ‘to sleep’  
cṭal-  ‘to slaughter’  
cṭot-  ‘to dig’  

(40b)  
C1VVC2  
ṭii▫-  ‘to curse’  
deaf-  ‘to give’  
keer-  ‘to run[SG]’  
puuf-  ‘to spray’  
pooy-  ‘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-  ‘to sever, pick (a fruit)[SG]’  
kull-  ‘to enter’  
pidd-  ‘to buy[SG]’  
cṭif-  ‘to destroy, demolish’  

(41b)  
C1VC2C3  
tarp-  ‘to cross, bypass’  
teym-  ‘to forget’  
kirp-  ‘to sing, dance’  
ček-  ‘to send’  
cṭink-  ‘to kiss’  
hawl-  ‘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  
- kaaɓɓ-  ‘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’
- dakay-  ‘to hear’
- deham-  ‘to advise’
- japal-  ‘to spoil’

(43b)  C1V.C2VVC3  
- oraap-  ‘to fetch water’
- malaal-  ‘to be unable to’
- axaaw-  ‘to roast’
- padaaw-  ‘to add, increase’
- ñaniin-  ‘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  
- ančal-  ‘to cook’
- marmad-  ‘to deny, betray’

(44b)  C1VC2.C2VVC3  
- immak-  ‘to fill’
- ulup-  ‘to cry for help’
- fakal-  ‘to stick to’
- daɗfaap-  ‘to catch up with’
- tuɗaur-  ‘to push’
- hadɗun-  ‘to hold (a child)’
- ñappaaf-  ‘to swell’

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

(45)  C1VV.C2VVC3  
- 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-  ʧaarcʧaar-  ‘to help, assist’
      ʧaatʧaat-  ‘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’
      ɗaʔt[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[ti]-  ‘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 ?ikeriti
      alleeta-siʔ  i=keri-t-i
      hut-DEF.M/F  3=grow.old-3F-PF
      ‘The hut got old.’

(48b)  ʧoroozinid ɗettow ikerini
      ʧoraʔ-osiniʔ  ɗettow  i=keri-ni
      trees-DEM.P  quickly  3=be.old-IPF.PRES
      ‘These trees grew old quickly.’

(49a)  namasiʔ ?ikeray
      nama-siʔ  i=ker-ay
      man-DEF.M/F  3=be.old-PF[3M]
      ‘The man grew old.’
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).

\[(50a)\] iʃeennaʔ iʔikeriti
\[feennaʔ\]  
3SGF.PRO-NOM 3 = grow.old-3F-PF

‘She grew old.’

\[(50b)\] iʃeennaʔ ?unta-siʔ ?iferti
\[feennaʔ\] unta-si  
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 consonants. 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 underly- ingly 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).

\[(51a)\] Apittuʔ ?akalasiʔ ?ikulliʃay
\[Apituʔ\] akala-si  
Apittu-NOM sack-DEF.M/F 3 = enter-3F-PF[3M]

‘Apittu put the sack in the house.’

\[(51b)\] inantasik kutasiʔ ?iʔakkiti
\[inanta-si\] kuta-si  
girl-DEF.M/F dog-DEF.M/F 3 = see-3F-PF

‘The girl saw the dog.’
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 (Ggeberew 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 /\( \dot{\theta} \)/ 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 /\( \dot{\theta} \)/

The glottal stop /\( \dot{\theta} \)/ 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).

\[(52a)\]  
\[
\text{anti}\dot{\theta}\, ?\text{apittu}\, \text{in}\dot{\theta}\text{akkay}
\]
\[
antii-\theta \quad \text{Apittu} \quad \text{in}=\text{akk-ay}
\]
\[
1SG.PRO-NOM \quad \text{Apitto} \quad 1=\text{see-PF[3M]}
\]
\`
I saw Apitto.'
\]

\[(52b)\]  
\[
\text{if\c{e}enna}\dot{\theta}\, ?\text{i\c{e}de}\text{\c{t}\i}}
\]
\[
\text{if\c{e}enna}-\theta \quad i=\text{dey-\i}}
\]
\[
3SGF.PRO-NOM \quad 3=\text{come}3-F-PF
\]
\`
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 ?imuktî
    raaka-siʔ i=muk-t-i
    old.woman-DEF.M/F 3=sleep-3F-PF
    ‘The old woman slept.’

(53b) antik kulin aanà
    antiʔ kuli =in aan-a
    1SG.PRO-NOM later =1 go-IPF.FUT
    ‘I will go later.’

(53c) indammî
    in =dam-ni
    1=eat-IPF.PRES
    ‘I eat (it).’

(53d) indammí
    in =dam-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) /fábbaa/ [fábbaa] ‘weed’
     /háddfaa/ [háďďaa] ‘venom’
     /peɛɛtʃaa/ [peɛɛtʃaa] ‘quarrel’
     /piʃʃ لما/ [piʃʃ لما] crop species

(54b) cjoyra ‘tree’
     kóda ‘work’
     hanʃufaa ‘saliva’
     saraɓta ‘calf (of a leg)’
     daʔt’a ‘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)  
\[
\begin{align*}
\text{ŋ} & \quad \text{before /k/} \\
\text{n} & \quad \text{before uvulars /χ, } \text{č/} \\
\text{ŋ} & \quad \text{before /f/} \\
\text{n} & \quad \text{before palatals /c, š, ž/} \\
\text{m} & \quad \text{before /p/ and /b/ in verbs}
\end{align*}
\]

(56a)  
\[
\begin{align*}
dänkaa/ & \quad \text{[dangaa]} \quad \text{‘throat’} \\
pänkaa/ & \quad \text{[paŋgaa]} \quad \text{‘sword’} \\
ponkora/ & \quad \text{[pongora]} \quad \text{‘young man’}
\end{align*}
\]

(56b)  
\[
\begin{align*}
funχaa/ & \quad \text{[fʊnχaa]} \quad \text{‘dense (e.g. forest)’} \\
fänčała/ & \quad \text{[fænsčalæ]} \quad \text{‘splinter’} \\
föɔnčita/ & \quad \text{[fɔoŋčita]} \quad \text{‘throat’}
\end{align*}
\]

(56c)  
\[
\begin{align*}
könfa/ & \quad \text{[kʊŋfa]} \quad \text{‘pocketless shorts’} \\
fɪnfʊtə/ & \quad \text{[fɪŋfootə]} \quad \text{‘stick with metal end’}
\end{align*}
\]

(56d)  
\[
\begin{align*}
hänfʊfəa/ & \quad \text{[hæŋfʊfəa]} \quad \text{‘saliva’}
\end{align*}
\]

(56e)  
impannì  
\text{in} = \text{pan-n-ì}  
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)) regresses 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) χaɾʃasiʔ ?indaŋmŋ

χaɾʃa-siʔ in = dam-n-i
beans-DEF.M/F 1 = eat-1PL-PF
‘We ate the beans.’

(57b) attik kappaasit tummj

attiʔ kappaa-siʔ = ʔiʔ tum-ni
2SG.PRO-NOM wheat-DEF.M/F = 2 thresh-IPF.PRES
‘You (SG) are threshing the wheat.’

(58a) tikupa kallaj a

tika-opa kal-n-a
house-to return.home-1PL-OPT
‘Let’s go home.’

(58b) ʘoyraasal luukkata idallaj

ʘoyra-asili luukkata i = dal-ni
tree-DEM.M/F fruit 3 = bear-IPF.PRES
‘This tree bears fruit.’

(59a) ʘoyraasim murrja

ʘoyra-asili mur-n-a
tree-DEM.M/F cut[SG]-1PL-OPT
‘Let’s cut this tree.’

(59b) inantasiʔ ?iʃarri

inant-a-siʔ i = ʃar-ni
girl-DEF.M/F 3 = shiver-IPF.PRES
‘The girl is shivering.’

As can be seen from the above examples, /n/ regresses 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

| /ilkita/ | [ilgittå] | ‘tooth’ |
| /dänkaa/ | [dångaa] | ‘throat’ |
| /aykitta/ | [aygittå] | grass species |
| /alkitta/ | [algittå] | ‘sisal’ |

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

| /rumpatta/ | [rumbåttå] | ‘foam (of saliva)’ |
| /tamoota/ | [tamootå] | ‘tobacco’ |
| /dompoltå/ | [dömbołtå] | ‘chunk of soil’ |
| /haampatå/ | [haambołtå] | ‘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) \( /tapaṭta/ \) | \([taɸaṭtå]\) | ‘rat’ |
| /apitta/ | \([aɸitta]\) | ‘fire’ |
| /hapura/ | \([håfura]\) | ‘spirit’ |
| /japara/ | \([jåfara]\) | ‘rag’ |
| /kaɓa/ | \([kaɸå]\) | ‘canal’ |
| /hiɓta/ | \([hiɸtå]\) | ‘meat soup’ |

(61b) \( / çołpa/ \) | \([çoɭ따]\) | ‘he-goat’ |
| /kiɭpa/ | \([kiloɭ]\) | ‘knee’ |
| /daɲna/ | \([çaɲnå]\) | ‘side of the face, temple’ |
| /arpa/ | \([arɭ따]\) | ‘elephant’ |
| /silpa/ | \([silọɭ]\) | ‘metal, iron’ |

(61c) \( /saalpataa/ \) | \([saalɭatăa]\) | ‘belt’ |
| /kaɭpataa/ | \([kayɭatăa]\) | ‘(skin) rash’ |
| /hiɓta/ | \([hiɓtå]\) | ‘lip’ |
| /sarabəta/ | \([saraɓtå]\) | ‘calf (of leg)’ |
| /χoɓta/ | \([χoɓtå]\) | ‘shoe’ |

(61d) paala | \([paala]\) | ‘feather’ |
buɓɓaa | \([buɓɓaa]\) | ‘egg (Karatte dialect)’ |
tappa | \([tappå]\) | ‘seven’ |
ʃaaɓɓaa | \([ʃaaɓɓaa]\) | ‘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)  
soʔaatya  [sʰaaytə]  ‘witch doctor’
doʔaatya  [dʰaaytə]  ‘hide for carrying things’
soʔaa  [sʰaa]  ‘meat’
loʔaa  [lʰaa]  ‘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)  
cimaytasiʔ?itʰay  
cimayta-siʔ  i=toʔ-ay  
old.man-DEF.M/F  3=die-PF[3M]  
‘The old man died.’

(62b)  
hamiyaaʔ luukkataʔiχʰa  
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?itoʔtʃ  
raaka-siʔ  i=toy-t-i  
old.woman-DEF.M/F  3=die-3F-PF  
‘The old woman died.’

(63b)  
inantasil luukkataʔiχoʔtə  
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/ [yoomatta] ‘millstone’
     /daʔta/ [daata] ‘butter’
     /χaʔtiya/ [xaatiya] ‘fly’
     /kupaʔtaa/ [kupaataa] ‘tortoise’
     /sataʔta/ [sataata] ‘heart’
     /toʔta/ [toota] ‘death’
     /kalaʔta/ [kalaata] ‘spider’
     /χaʔnaa/ [xaanaa] ‘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 plurative 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) χinaʔittä [chinayittä] ‘rib’
     χolaʔittä [cholayittä] cactus species
     maraʔittä [marayittä] grass species
     saʔittä [sayittä] ‘seed corn for root crops’
     riwwaʔittä [riwayyittä] ‘the Milky Way’

(65b) χinaʔiyyaa [chinaiyyaa] ‘rib’
     χolaʔiyyaa [cholaιyyaa] cactus species
     maraʔiyyaa [maraiyyaa] grass species
     saʔiyyaa ‘seed corn for root crops’
     riwwaʔiyyaa [riwayiyyaa] ‘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) kilḷa ~ kiplḷa ‘knee’
ilkitta ~ iklittḷa ‘tooth’
dikḷa ~ dikḷa ‘elbow’
pocḷa ~ policḷa ‘clan chief’
sikḷaala ~ silkḷa ‘(poison from) bee or wasp sting’
cọlfḷa ~ cọlfḷa ‘bark (of tree)’

(66b) sipla ~ silpa ‘mental’
siploota ~ silpootḷa ‘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) kayḷa ~ *kalyaa ‘tassel’
pawlḷa ~ *palwaa ‘old Ethiopian coin’
hawlḷa ~ *halwaa ‘grave, tomb’

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

(68) χosalaa ~ χolsaa ‘laughter’
afurattḷa ~ arfattḷa ‘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) kipritteḷta ~ kirpriteḷta ‘match’ (Amh. kibrit ~ kirbit)
iskiriptootḷa ~ iskipirtootḷa ‘pen’ (Amh. iskiripto ~ iskipirto)
taaksitḷa ~ taaskitḷa ‘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) katipaytā ~ kapitaytā plant species
arasaā ~ asaraa ‘local drink made for sale’
punusskaytā ~ punkussayta ‘owl’
hinjaaftā ~ hinjaaakkatā ‘ant’
morocrocissā ~ morocrocissā 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) saalpatā *saaplatā ‘belt’
cọlpa *cọplǎ ‘he-goat’
saalpuuciąa *saapluciąa ‘skunk’
palpalaytā *paplayta ‘joker.M’
cọalpeetā *cọpleetā ‘good manner’
talpooti *taplooti woman’s name
 tulpeetā *tuploetā ‘hippopotamus’
elplaa *elpa ‘season when ripening begins’
χalpa *χapla ‘seventy-five cents’
kulpā *kuplā ‘gourd for carrying water’

2.8.3. Assimilation involving the causative and middle derivation

The (direct) causative suffix -ʃ and the middle suffix -aɗ 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 -aɗ 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 ʃt becoming /ss/: voiceless alveopalatal fricative ʃ becomes voiceless alveolar fricative s, and a voiceless alveolar stop /t/ also changes to a voiceless alveolar fricative s.

Notice that in the word hinkaaäfta ‘ant’, the non-geminate consonant /k/ becomes geminate when it is relocated in the position of the geminate /ʃ/, and the geminate /ʃ/ becomes single when relocated in the position of the non-geminate /k/.

\(^6\) Notice that in the word hinkaaäfta ‘ant’, the non-geminate consonant /k/ becomes geminate when it is relocated in the position of the geminate /ʃ/, and the geminate /ʃ/ becomes single when relocated in the position of the non-geminate /k/.
namasit tika iharmisaday  
\( nama-siʔ \quad tika \quad i=\text{harm-f-ad-ay} \)  
man-DEF.M/F  house  3=prepare-DCAUS-MID-PF[3M]  
‘The man prepared a house for his benefit.’

(72b) tomasiʔ ?ikullisamay  
\( toma-siʔ \quad i=kull-f-am-ay \)  
bowl-DEF.M/F  3=enter-DCAUS-PAS-PF[3M]  
‘The bowl was moved into the house.’

(73a) ijeenat talaasiniʔ ?ikalissa  
\( iʃeenna-ʔ \quad talaasiniʔ \)  
3SGF.PRO-NOM  goats-DEF.P  
i=\text{kal-sh-t-a}  
3=return.home-DCAUS-3F-IPF.FUT  
‘She will bring the goats back home.’

(73b) attit taloosiniʔ ?ikkalissa  
\( atti-ʔ \quad talaas-oosiniʔ \)  
2SG.PRO-NOM  goats-DEM.P  
iʔ=\text{kal-sh-t-a}  
2=return.home-DCUAS-2-IPF.FUT  
‘You (SG) will bring the goats back home.’

(73c) antiʔ ?innaasinil luukkata damissaa immalaalay  
\( anti-ʔ \quad innaas-iniʔ \quad luukkata \)  
1SG.PRO-NOM  child-DEF.P  fruit  
\( dam-f-taa \quad in=\text{malaal-ay} \)  
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 ɗiʃ- ‘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 ɗiiʃ- ‘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).
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) $\chiarʃa$-si$ʔ$ dila-opa-n $desa$ $i=fiɗ$-am-ay
beans-DEF.M/F field-DEST-PATH towards

3 = scatter-PASS-PF[3M]

‘The beans were scattered over the field.’

(75b) $nama$-si$ʔ$ $ćoora$-sini$ʔ$ $i=haad$-ad-ni
person-DEF.M/F tree-DEF.M/F 3 = carry.PL-MID-IPF.PRES

‘The person carries the trees for his benefit.’
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).

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).
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) luukkasiʔ ?immittatå

<table>
<thead>
<tr>
<th>luukkata-siʔ</th>
<th>iʔ=mitt-ad-t-a</th>
</tr>
</thead>
<tbody>
<tr>
<td>fruit-DEF.M/F</td>
<td>2 = pick.SG-MID-IPF.FUT</td>
</tr>
<tr>
<td>‘You (SG) will pick the fruit for your benefit.’</td>
<td></td>
</tr>
</tbody>
</table>

(79b) aturrataasåtç oyrašiʔ ?icapattå

<table>
<thead>
<tr>
<th>aturrataa-siʔ</th>
<th>oyra-si</th>
<th>i=icap-ad-t-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>cat-DEF.M/F</td>
<td>tree-DEF.M/F</td>
<td>3 = catch-MID-3F-PF</td>
</tr>
<tr>
<td>‘The cat held the tree for its benefit.’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(79c) alleeta çupattaá ipaáaarå

<table>
<thead>
<tr>
<th>alleeta</th>
<th>çup-ad-taá</th>
<th>i=paáaar-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>house</td>
<td>build-MID-VN</td>
<td>3 = be.good-PF</td>
</tr>
<tr>
<td>‘Building a house is good for oneself.’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 ipannå

<table>
<thead>
<tr>
<th>okkatta-siʔ</th>
<th>lekaytan</th>
<th>i=pat-ni</th>
</tr>
</thead>
<tbody>
<tr>
<td>cow-DEF.M/F</td>
<td>many.times</td>
<td>3 = disappear-IPF.PRES</td>
</tr>
<tr>
<td>‘The cow disappears many times.’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(80b) iʃoonnaχ χarʃasiʔ ?inkanni

<table>
<thead>
<tr>
<th>iʃoonna-ʔ</th>
<th>χarʃa-siʔ</th>
<th>in=kat-n-í</th>
</tr>
</thead>
<tbody>
<tr>
<td>3PL.PRO-NOM</td>
<td>beans-DEF.M/F</td>
<td>3NEG = sell-NEG-PF</td>
</tr>
<tr>
<td>‘They did not sell the beans.’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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, ɓ, 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)
[m] before a verb root initial /m/, as in (65a)
[n] before a verb root initial /k/, as in (65b)
[n] before a verb root initial /ɲ, χ/, as in (65c)

(82a)  
koɗaasiʔ ʔimpanā

kodiia-stiʔ  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)  
illellā

in = lel-n-a
1 = tell-1PL-IPF.FUT
‘We will tell.’

(83b)  
ilaaɓɓiniŋ

in = laaɓɓ-n-i
1 = cross.over-1PL-PF
‘We crossed over.’

(84a)  
irroopniŋ

in = roop-n-í
3NEG-rain-NEG-PF
‘It did not rain.’

(84b)  
irrakkay

in = rakk-ay
1 = hung.SG-PF[3M]
‘I hung (it).’

(85a)  
pogolootaŋ ʔiwwaanīŋ

pogoloosta-stiʔ  in = waat-n-i
maize-DEF.M/F  1 = roast-1PL-PF
‘We roasted the maize.’
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).

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.
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 ?okkayyaasiniʔ ‘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) filaasinkuttaap pattanakkay
filaasiniʔ kuttaapa pattain akkay
comb-DEF.M/F be.big-P only =1 see-PF[3M]
‘I saw only the big comb.’

(89b) okkayaasinkukuttaalakkinakkay
okkayyaasiniʔ kukuuttaalakkinakkay
cows-DEF.M/F 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 inantasiiʔ ‘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) inantasitikupa deʔiti pattanakkay
inanta-siʔ tika-opa dey-t-i pattain
girl-DEF.M/F house-to come-3F-PF only =1
The glottal stop that is the final consonant of the third person possessive suffixes (-ayʃuʔ and -ssuʔ) also assimilates completely to the initial consonant of any following constituent as demonstrated in (91). For details see Section 5.3.

(91a)  okkattaayʃuχ  χala  it*ay  
  okkatta-ayʃuʔ  χala  i=toʔ-ay  
  cow-3PL.POSS.M/F  yesterday  3 = die[SG]-PF[3M]  
  ‘Their cow died yesterday.’

(91b)  okkayyaassuχ  χala  ileyin  
  okkayaa-ssuʔ  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 -asiʔ/-oosiʔ/-oosiniʔ also assimilates completely to the initial consonant of any following constituent as shown in (92).

(92a)  kahartaasip  piʃaasiniʔ  ʔiʔiktį  
  kaharta-asiʔ  piʃaa-siniʔ  i=?ik-t-i  
  ewe-DEM.M/F  water-DEF.P  3 = drink-3F-PF  
  ‘This ewe 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).

\[(93a)\]
\[
dakaasik kirra kapaχ χaayį
dakaa-siʔ kirra kapa-ʔ χaay-i
\]

\[\text{stone-DEF.M/F river near-LOC put-IMP.SG} \]

\[\text{‘(You (SG)) Put the stone near the river!’}\]

\[(93b)\]
\[
antis silpootasiʔ ?intikad dǐfay
anti-ʔ silpoota-siʔ in=tika-ʔ
\]

\[\text{1SG.PRO-NOM hoe-DEF.M/F 1=house-LOC}\]

\[\text{dǐf-ay} \]

\[\text{leave-PF[3M]} \]

\[\text{‘I left the hoe at home.’}\]

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

\[(94)\]
\[
antit taamta ƙoyram muriya inheeną
anti-ʔ taamta a ƙoyra-ʔ
\]

\[\text{1SG.PRO.NOM branch GEN tree-GEN}\]

\[\text{mur-iya in=heen-a}\]

\[\text{cut-VN 1 = want-IPF.FUT}\]

\[\text{‘I want to cut a branch of a tree.’}\]

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

\[(95a)\]
\[
ana iʃuk Kappooli indeʔnį
ana ?ifuʔ Kappooli in=dey-n-i
\]

\[\text{1SG.PRO.ACC and Kappooli 1 = come-1PL-PF}\]

\[\text{‘I and Kappoole came.’}\]

\[(95b)\]
\[
init tikaawu
iniʔ tika-awu
\]

\[\text{this house-1SG.POSS.M/F}\]

\[\text{‘This is my house.’}\]
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 adver-bials 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’, χaay- ‘to put, lay’, tuukk- ‘to push.SG’ to indicate a postponement of an appointment.

We do not get vowel coalescence when the postposition opa occurs with the adverbs aye ‘here’ and awwi ‘today’. We rather get ayya ‘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 tuukkinga
hemitta-asii paraann-opa tuukk-n-a
marriage-DEM.M/F next.year-to push.SG-1PL-OPT
‘Let’s postpone this wedding until next year.’

(97b) inuf ðiluppan anni
inuʔ ðila-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 χooyi
ana kapa-opa χooy-i
1SG.PRO.ACC near-to come-IMP.SG
‘(You (SG)) Come to me!’

(98b) ana kawpa χooyi
ana kapa-opa χooy-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 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’
day- ‘to hit’
dakay- ‘to hear’

(99b) χaay- ‘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)  iʃat tikuppa ikay
        ifaʔ  tika-oppa  i=kay
        3SGM.PRO-NOM  house-in  3 = reach.PF[3M]
        ‘He arrived at home.’

(100b)  antiʔ ʔotootasiʔ ʔinɗakay
        antiʔ  otoota-siʔ  in=ɗakay
        1SG.PRO-NOM  news-DEF.M/F  1 = hear.PF[3M]
        ‘I heard the news.’

(100c)  iʃat tikuppa ikayay
        ifaʔ  tika-oppa  i=kay-ay
        3SGM.PRO-NOM  house-in  3 = reach-PF[3M]
        ‘He arrived at home.’

(100d)  antiʔ ʔotootasiʔ ʔindakahay
        antiʔ  otoota-siʔ  in=da-kay
        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
        Kappooliʔ  taamta-siʔ  i= kayy-ay
        kappoole-NOM  branch-DEF.M/F  3 = jump.and.touch-PF[3M]
        ‘Kappoole jumped and touched the branch.’

(101b) *kappoolit taamtasiʔ ʔikay
        kappooliʔ  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 distinc-
tion 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 con-
struction (details appear in Section 3.5).

(102a)  \text{oraaytaa kuta } \text{čaaniinay}  
\text{oraayta}=i \quad \text{kuta} \quad \text{čaaniin-ay}  
\text{hyena}=3 \quad \text{dog} \quad \text{bite-PF[3M]}  
‘A hyena bit a dog.’

(102b)  \text{oraaytaá kuta } \text{čaaniinay}  
\text{oraayta}=í \quad \text{kuta} \quad \text{čaaniin-ay}  
\text{hyena}=3.ACC \quad \text{dog} \quad \text{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)  \text{inanni}  
in=an-ni  
1=go-IPF.PRES  
‘I go/I am going.’

(103b)  \text{in=an-n-i}  
3NEG=go-NEG-PF  
‘He/She/They did not go.’

(104a)  \text{inanni}  
in=an-ni  
1=go-IPF.PRES  
‘I go/I am going.’
(104b)  in = an-n-i
        I = go-1PL-PF
    'We went.'