

Phonology of the Orma Language

Bible Translation & Literacy, E.A.

Submitted by: Dale R. Hoskins
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Approved by: Dr. Steve Nicolle
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1. Introduction

The Orma language is a member of the Oromo language cluster, which belongs to the East-Cushitic branch of the Afro-Asiatic super family. Oromo dialects spoken in Kenya (listed with their *Ethnologue*¹ notation) include Orma, MunyoYaya, and Waata (ORC); Borana, Arsi, Guji, Gabra, and Sakuye (GAX); Garreh-Ajuran (GGH), and Dahalo (DAL).

Orma is spoken by approximately 55,000 people², most of whom live in the Tana River district of Kenya's Coast province. The Orma people are semi-nomadic pastoralists who keep cattle, goats, and sheep. Dialect variation in this large district is minimal, although slight differences exist in word usage preferences between the northern (Galole) and southern (Chaffa) regions. The Galole is more likely influenced by Somali and Borana, while the Chaffa region is more influenced by the Coastal Bantus. These differences do not affect pronunciation.

1.1. Scope of this analysis

This analysis presents and describes Orma language phones, and analyses phonemes and syllable structure. Morphophonemics rules are presented, but without grammatical explanation.

This report is a comprehensive update of a series of previous BTL studies in Orma phonology. It contains discoveries that affect updated orthographic choices and spelling guidelines, including the phone and phoneme inventory, and the existence of geminates in all consonants except /h/. The case for not marking tone is provided herein. This analysis is the theoretical basis to the currently proposed Orma *Working* orthography and revised Orma transition primer. This orthography, including its recent modifications, has been widely tested and endorsed by the Orma community, including the Orma Project Advisory Committee. Refer to the Appendix for the Alphabet Chart. Spelling guidelines are presented in the transition primer.

This analysis has been checked and approved by Dr. Steve Nicolle, BTL Linguistics Consultant. It includes data gathered over several years from throughout the Tana River District. The final details of the present study were confirmed through the assistance of Mr. Omar Goricha and Mrs. Sofia Salad. Ms. Leslie Pinkley assisted for a week in confirming or correcting phonetic transcriptions, allophonic and morphophonemic rules, and tone.

1.2. Previous BTL reports

The 1992 Phonology report³ presented the initial comprehensive analysis. Some minor updates were presented in 1996⁴ and 2005⁵. These will be referred to as

¹ Gordon, Raymond G., Jr. (ed.), 2005. *Ethnologue: Languages of the World*, Fifteenth edition. Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>.

² *ibid.*

³ Payton, George W. *Summary Report for BTL Orma Project; Appendix A: Phonology*, 1992.

⁴ Payton, George W. *Summary Report for BTL Orma Project: 1996*.

⁵ Payton, George W. *Addendum To Orma Phonology And Grammar Statement*, June 2005.

the 1992, 1996 reports, and the 2005 addendum, respectively. The data from the 1992 report were collected in Wayu Village, Galole Division, Tana River District. Mr. Abdi Dakota Shambaro and Mr. Gemu Harte were the primary language assistants in that report. Mr. Steven Kelly provided additional assistance in computational matters.

1.3. Notations in text

Phonetic transcriptions are in square brackets [afurtama] using symbols designated by the International Phonetics Association (IPA); phonemic transcriptions are amidst forward slashes /afurtama/; and orthographic with italics *afurtamā*. Syllable breaks are denoted with full stops: [a.fur.ta.ma]; *a.fur.ta.mā*. English glosses are denoted with pairs of single apostrophes: 'forty'.

1.4. Definition of terms⁶

- 1.4.1. **cluster** any sequence of adjacent consonants occurring *within the same* syllable (either initially or finally).
- 1.4.2. **geminate** a sequence of *identical* adjacent segments of a sound within a single morpheme. Geminates may cross syllable boundaries.

⁶ Crystal, David. *A Dictionary of Linguistics and Phonetics*. 3rd edition. Blackwell Publishers, Inc. Cambridge, Massachusetts

2. Orma Phones

2.1. Consonants⁷

Chart of Orma Consonant Phones

Manner of Articulation		Point of Articulation	Bilabial	Labio-dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal	
Obstruents	Stop	vl	p p ^ʰ p ^ʰ		t t ^ʰ t ^ʰ	t̪ ^ʰ		k k ^ʰ k ^ʰ	ʔ	
		vd	b b ^ʰ		d d ^ʰ	d̪ ^ʰ		g g ^ʰ		
		eject	p'		t'			k'		
		impl			ɖ					
	Affricate	vl				tʃ				
		vd				dʒ				
		eject				tʃ'				
	Fricative	vl		f	$\frac{s}{z}^8$	ʃ	ç		h	
	Sonorants	Nasal	vd	m		$\frac{n}{n^j}$			ŋ	
			vl			r̥				
Rhotics		vd			r r					
		Laterals	vd			l				
Semi-vowels		vd	w				j			

⁷ summary of changes from the 1992 report:

- now use consistent IPA notation, corrected some charting errors, and added columns for the labio-dental and palato-alveolars.
- added unaspirated and unreleased stops [p, t, k; p^ʰ, t^ʰ, k^ʰ, b^ʰ, d^ʰ, g^ʰ]
- added palatal voiceless fricative [ç]
- added alveolar voiced and voiceless trills [r, r̥]
- reclassified the palatal nasal [ɲ] as a palatalised alveolar nasal [n^j]
- removed dental voiced stop [ɖ], voiced interdental fricative [ð], velar fricative [x]
- removed all voiceless sonorants: [ç, ʃ, m̥, ŋ, ɲ, ŋ] (but added a voiceless trill)

⁸ z only occurs in borrowed words. Some words that have been borrowed are devoiced to reflect Orma sound system, and in others, the voicing is retained.

2.2. Vowels

Orma has a five vowel system, each of which may be long, short, or voiceless.

Chart of Orma Vowel Phones

Short			Long			Voiceless Short		
i		u	i:		u:	ɨ̥		ʉ̥
	e	o		e:	o:		ɛ̥	ɔ̥
		a			a:			ɑ̥

3. Interpretation of syllables, segments, and sequences

3.1. Syllable structure

There are four syllable patterns permitted in Orma: V, VC, CV, and CVC.

Examples:

[o.nḁ]	<i>onā</i>	'abandoned settlement'	[a.fur.ta.mḁ]	<i>afurtamā</i>	'forty'
V.CV			V.CVC.CV.CV		
[o.a:.ti]	<i>oaati</i>	'to shout'	[kar.fa.fu]	<i>karfafu</i>	'splash from rain'
V.V.CV			CVC.CV.CV		
[ar.bḁ]	<i>arbā</i>	'elephant'	[i:l.tʃɛ̥]	<i>iilçē</i>	'embitter'
VC.CV			VC.CV		
[ab.den.no]	<i>abdenno</i>	'to trust'	[bi:.f.tu]	<i>biiftu</i>	'sunrise'
VC.CVC.CV			CVC.CV		

All words end with a vowel, so final syllables are restricted to V and CV.

True consonant clusters do not exist because the only occurrences of two consecutive consonants are across syllable breaks.

Consonant-final syllables (VC & CVC) must be followed by consonant initial syllables (CV & CVC). In other words, consonants in isolation must function as syllable onset rather than coda.

3.2. Ambiguous consonant segments and sequences

Geminate Consonants

In contrast to long vowels, geminate consonants are interpreted as a sequence of two identical phonemes to conform to recognised syllable patterns. A sequence of three consonants does not occur in the Orma language. All consonant phonemes can occur as geminates except /h/.

Examples:

[o:d̥ˀ.d̥ʒu.en.no]	<i>oojjuenno</i>	'to dream'	[dad̥ˀ.do]	<i>daddo</i>	'community'
[tʰat̥ˀ.tʰap̥ˀ.sen.no]	<i>ç'açç'ap'senno</i>	'to give birth'	[ʃḁˀ.fu.ə]	<i>xaxxuā</i>	'loosening'
[n̥ˀa:n̥ˀu.ra]	<i>ñaaññurā</i>	'impatient'	[pot̥ˀ.ti]	<i>potti</i>	'drenched'

Notice that phonetically, discontinuant geminates (i.e., stops and affricates) are unreleased phones followed by their phonemic consonant. They clearly demarcate two syllables. However, continuant geminates (i.e., fricatives and sonorants) are lengthened consonants. Depending upon one's theoretical framework⁹, continuant geminates may be interpreted as two segments split between syllables, or as a single lengthened segment either shared among syllables or associated entirely with the second syllable. In this paper, geminate consonants are consistently transcribed as two segments rather than as a single lengthened segment.

3.2.1. *Geminate alveolar rhotics*

Geminate alveolar rhotics are interpreted as a sequence of two identical phonemes to conform to recognised syllable patterns. Phonetically, they are a sequence of two alveolar trills. The second is devoiced when followed by a voiceless vowel.

[ar.ra.ba]	<i>arrabā</i>	'tongue'
[bir.ri]	<i>birri</i>	'many'
[wor.r̥ə]	<i>worrā</i>	'home'
[dir.r̥ə]	<i>dirrā</i>	'back'

3.2.2. *Geminate implosives and ejectives*

Geminate implosives are realised phonetically as an unreleased stop with egressive lung air in its syllable's coda, followed by an implosive at the same point of articulation in the onset of the subsequent syllable. They are phonemically analysed as a geminate implosive.

Examples:

/ho:d̥ˀ.d̥ə/	→ [ho:d̥ˀ.d̥ə]	<i>hoodd'ā</i>	'hot'
/had̥ˀ.do:.tu/	→ [had̥ˀ.do:.tu]	<i>hadd'ootu</i>	'gall bladder'

Similarly, geminate ejectives are realised phonetically as an unreleased stop with egressive lung air, followed by an ejective (i.e., a stop with egressive glottalic air.) They are phonemically analysed as a geminate ejective.

Examples:

/dap̥ˀ.p'i/	→ [dap̥ˀ.p'i]	<i>d'app'i</i>	'indeed'
/bat̥ˀ.t'u/	→ [bat̥ˀ.t'u]	<i>batt'u</i>	'fragile'
/buk̥ˀ.k'a/	→ [buk̥ˀ.k'a]	<i>bukk'a</i>	'dislocated joint'

⁹ Kenstowicz, Michael J., *Phonology in Generative Grammar*., pp. 293-4, Blackwell Publishers, 1994.

Orthographically, it is preferable to write more like the phonetic rather than phonemic realisation, as it requires only one diacritic for the geminate.

3.2.3. *Affricates*

The [tʃ], [tʃʰ], and [dʒ] are interpreted as affricates rather than sequences of two consonants. Each of these affricates can occur adjacent to other consonants, so such interpretation preserves the recognised syllable patterns.

Examples:

[tʃaʔˀ.tʃa]	<i>çaçça</i>	'wood poles'
[bul.tʃa]	<i>bulçā</i>	'hosting someone for the night'
[k'un.tʃ'e]	<i>k'unç'e</i>	'plant fibers'
[bor.tʃ'en.no]	<i>borç'enna</i>	'to wash clothes'
[dʒi.la]	<i>jilā</i>	'ceremony'
[bo:dʒ.dʒi]	<i>booji</i>	'plunder'
[gol.dʒa]	<i>golja</i>	'warthog'

3.2.3.1. *Geminate ejective affricates*

As discussed in Section 3.2.1.2, geminate ejectives are realised phonetically as an unreleased stop with egressive lung air, followed by an ejective (i.e., a stop with egressive glottalic air), and are written accordingly.

Examples:

/tʃʰatʃʰ.tʃʰapˀ.se.ta/	→ [tʃʰatʃʰˀ.tʃʰapˀ.se.ta]	<i>ç'açç'ap'setā</i>	'giving birth'
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3.2.4. *Semi-vowels*

Semi-vowels are interpreted as consonants in order to conform to recognised syllable patterns.

Examples:

[ra:w.wi]	<i>raawwi</i>	'end'
[d'u.wen.no]	<i>d'uwenno</i>	'to eat marrow'
[bo:y.ye]	<i>booye</i>	'pig'
[do:ya]	<i>dooya</i>	'spy'

3.2.5. *Palatalised alveolar nasal*

This is interpreted as a single-segment alveolar nasal with a secondary articulation [nʲ]. This was previously analysed as a palatal nasal¹⁰, but after noting that when this segment is followed by a voiceless vowel, the secondary articulation devoices, leaving a clear alveolar nasal. When it occurs as a geminate, it is realised as [nnʲ], with the secondary articulation occurring at the end the second consonant. A two segment consonant-glide

¹⁰ The 1992 report also stated the palatal nasal does not occur as a geminate, and this was reiterated in the 2005 Addendum. But we hear the geminate, and the Orma do as well.

cluster [nj] must be ruled out in order to conform to recognised syllable patterns.

Examples:

[nʲan.nʲu.r̥a]	<i>ñaññurā</i>	'impatient'
[ma:n.nʲa]	<i>maaññā</i>	'ocean'

It is worthwhile to note here the important morphophonemic example which occurs when the *hin-* prefix precedes verbs beginning with [j] and [nʲ]. This results in the contrastive pairs of [nj] and [nnʲ]:

[hin.ja:i.na]	<i>hinyaaina</i>	'do not walk'
[hin.nʲa:ti.nj]	<i>hinñaatinī</i>	'do not eat'

3.2.6. Glottal stop

The glottal stop may occur word-finally on high tone syllables. It also is used to separate prefixes from vowel-initial roots (See 7.1) or when a vowel-initial verb is reduplicated (See 7.3). The glottal is marked to help the reader distinguish the prefixes. The glottal is thus not phonemic¹¹. In this table, prefixes are underlined.

[garaʔ]	<i>gara</i>	'stomach'	[tʰiʔtʰa]	<i>ç'içça</i>	'room for hosting'
[hi:k'a:ti]	<i>hiik'ē</i>	'he moved over'	[hiʔe:geɲi]	<i>hi'eegetinī</i>	'don't wait'
[hi:t't'ɛ]	<i>hiitt'ē</i>	'she moved over'	[hiʔoʔoɛ]	<i>hi'o'oē</i>	'not shouting'
[hiʔi:tɛ]	<i>hi'iitē</i>	'it didn't swell'			

The 1992 report cites Gragg: "*Other Oromo languages still have glottal intervocalically, as in /aa'oo/ 'molar', but in Orma it is /aaoo/.*"¹²

3.3. Ambiguous vowel segments and sequences

3.3.1. Vowel Length

Vowel length is interpreted as a single phoneme rather than a geminate vowel. This conforms to recognised syllable patterns. Long vowels can occur word initially, word medially, and word finally, even in monomorphemic words.

Examples:

#V: _____	[a:.da]	<i>aada</i>	culture
	[o.a:.ti]	<i>oaati</i>	to shout
____V: _____	[dʒa.e:s.sə]	<i>jaeessā</i>	sixth
	[ga:r.ga.la:.ti]	<i>gaargalaati</i>	to be distressed

¹¹ The 1994 Report and the 2005 Addendum stated that the glottal is phonemic based on the discovery of one monomorphemic word- *woelā*—with an intervocalic glottal. Elicitation of this word from multiple additional sources indicates that the glottal does not exist.

¹² Gragg, G. B, 1982. *Oromo Dictionary* East Lansing: Michigan State University.

___V:#	[mi:]	<i>mii</i>	luggage
	[bu.ʃa:]	<i>buxaa</i>	wild animals

Sometimes vowels appear as long vowels due to morphophonemics. See vowel morphophonemics Section 7.2. Note that these are consecutive vowels, and are not separated by a glottal stop.

[a:da]	<i>aada</i>	+ [a] =	[a:da:]	<i>aadaa</i>	'culture-genitive'
[sadi]	<i>sadi</i>	+ [i] =	[sadi:]	<i>sadii</i>	'three-genitive'

3.3.2. Vowel Sequences within a single morpheme

Sequences of different vowels are interpreted as two phones in separate syllables, rather than as a diphthong. Diphthongs are normally constructed in which the unstressed vowel segments are close vowels, such as [i] and [u]. Consider the English examples of *pie*: [a] + [i] = [pa¹] and *pouch*: [a] + [u] = [a^u]. These combinations exist in Orma, and clearly form two syllables: *haigi* 'yellow' [ha.i.gi] and *jeebiu* 'returning' [je.bi.u]. Orma, has many other sequences that are best interpreted as two syllables to conform to recognised syllable patterns. Furthermore, the close vowels (/i/ and /u/), can occur in either the first or second position of vowel sequences, and are always realised phonetically as a separate syllable.

[ai]	[hin.ya:.i.nj]	<i>hin'yaainī</i>	'don't go'
[ia]	[i.ʃi.a]	<i>ixia</i>	'her'
[au]	[ta:.u]	<i>taaū</i>	'sitting'
[ua]	[bua]	<i>bua</i>	'chaff'

3.3.3. Vowel sequences in multi-morphemic words

3.3.3.1. Prefixes

Vowel sequences don't occur in prefixes, they are always separated by a glottal stop, and are marked orthographically with an apostrophe.

[hiʔije:mu]	hi'ijcemū	'would not leave'
[aʔamo:meta]	a'amoometā	'he keeps yawning'

3.3.3.2. Suffixes

When a vowel-initial suffix follows a root ending in a short or long vowel, the two combine into a long vowel. When the root ends in a voiceless vowel, the suffix becomes voiced.

[arbā] + [anī]	arbā + anī	arbanī	'with the elephant'
[sa] + [a]	sa + a	saa	'my cow'
[ree] + [e]	ree + e	ree	'my goats'

4. Evaluation of phonetic contrasts

4.1. Consonants contrasts

phone	example	gloss	example	gloss	phoneme	grapheme
b-p'	[d'ib'be]	'grave'	[d'aabā]	'honeycomb'	/p', b/	p', b
	[d'ip'p'etə]	'he suffers'	[ñaap'ā]	'enemy'		
	[hamba:rū]	'he holds baby'	[k'abu]	'having'		
	[hamp'a:ju]	'sap'	[kap'u]	'basket'		
p-p' ¹³	[tʃ'op'a:ti]	'to drip'	[pep'pe:la:ti]	'to flutter'	/p/	p
	[pootti]	'drenched'	[p'ip'illisa:ti]	'to sparkle'		
f-p'	[doffenno]	'to hide something'	[lafet'ti]	'bones'	/f/	f
	[dip'p'enno]	'to suffer'	[laap'e]	'clotted blood'		
b-d	[ad'da]	'forehead-gen'	[birā]	'beside'	/d/	d
	[ab'ba]	'father'	[dirā]	'he queues'		
	[ab'di]	'trust'	[bad'da]	'forest'		
	[adi]	'white'	[dab'basa]	'body hair'		
d-d'	[dad'do]	'porcupine'	[da:t'tu]	'near'	/d'/	d'
	[dad'do]	'community'	[da:t'tu]	'cormorant'		
d-t	[buta]	'short distance'	[tabə]	'game'	/t/	t
	[buda]	'slander'	[dabə]	'wrongdoing'		
t-t'	[ti:ççā]	'my'	[hata:ti]	'to steal'	/t'/	t'
	[t'i:ççā]	'arrow'	[hat'a:ti]	'to dust off'		
tʃ-tʃ'	[tʃatʃ'apssenno]	'to give birth'	[mutʃ'utʃ'a:ti]	'to slip'	/tʃ, tʃ'/	ç, ç'
	[tʃatʃ'tʃa:sa:ti]	'to return things'	[du:tʃ'tʃa:ti]	'to fill a hole'		
	[k'atʃ'o]	'mockery'	[tʃ'itʃ'a]	'parlour'		
	[batʃ'tʃo]	'inferior'	[tʃatʃ'tʃa]	'poles'		
tʃ'-dʒ	[tʃ'i:sa:ti]	'to lie down'	[tʃ'a:ra:ti]	'to be noisy'	/dʒ/	j
	[dʒi:sa:ti]	'to wet'	[dʒa:ra:ti]	'to be old'		
ʃ-s	[isenj]	'you (pl)'	[sa:t'u]	'a tall grass'	/s/	s
	[iʃeenj]	'enter'	[ʃa:du]	'surprising'		

¹³ The 1992 report states that [p] only exists in borrowed words. [p] is found both word initially and word medially in Orma. None of the data provided in these contrasts are borrowed. /p/ is an Orma phoneme.

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phone	example	gloss	example	gloss	phoneme	grapheme
	[sadi]	'three'	[isa]	'his'	/s/	s
	[ʃabdi]	'starved'	[iʃia]	'her'		
tʃ-ʃ	[la:ntʃa:ti]	'to lessen'	[tʃattʃa:sa:ti]	'to return something'	/ʃ/	x
	[hanʃa:ra:ti]	'to pester'	[ʃakʃkaba:ti]	'to intentionally shortchange'		
k-k'	[bak'as:a:ti]	'to split open'	[bukʃke]	'side of torso'	/k', k/	k', k
	[bakʃkis:a:ti]	'to stimulate cow to produce milk'	[bukʃk'a]	'dislocated joint'		
	[dʌk'a:la]	'management'	[harkisa:ti]	'to pull'		
	[dʌka:tʃʃa]	'rock'	[hark'ama:ti]	'to snort scornfully'		
k-g	[ga:ti]	'to arrive'			/g/	g
	[ka:ti]	'generation'				
	[duga]	'truth'	[gagʃgaba:ti]	'to be dizzy'		
	[duka]	'ordinary'	[ʃakʃkaba:ti]	'to intentionally shortchange'		
k'-g	[d'i:ga:ti]	'to bleed'	[fi:ga:ti]	'to flee'		
	[d'ik'a:ti]	'to wash'	[fi:k'a:ti]	'to peel'		
n-m	[mamʌ]	'thought'	[ma:rʌti]	'downpour'	/m, n/	m, n
	[namʌ]	'person'	[na:rʌti]	'hell'		
	[ma:nʃi]	'what?'				
n- n ⁱ	[kuunn ⁱ o]	'naval'	[ma:nn ⁱ ʌ]	'ocean'	/n ⁱ /	ñ
	[hawwunno]	'hunger'	[gannʌ]	'year'		
	[n ⁱ a:fu]	'net'	[n ⁱ ap'e]	'cow ear mark'		
	[na:fʌ]	'lame'	[nage]	'peace'		
w-j	[wa:kʌ]	'God'			/w, j/	w, y
	[ja:kʌ]	'baobob'				
	[gawwa]	'deaf person'				
	[dajja]	'crack'				
r-l	[ara:rʌ]	'defer cows from drinking'	[rafʌ]	'he sleeps;	/r, l/	r, l
	[ala:lʌ]	'he complains'	[lafʌ]	'earth'		

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phone	example	gloss	example	gloss	phoneme	grapheme
h-ʃ	[ha:da:ti]	'to shave'	hiirā	'responsibility'	/h/	h
	[xa:da:ti]	'to admire'	xiirā	'grey'		
	[ha:lo]	'grudge'	[hafa]	'woman's belt'		
	[ʃa:llo]	'an animal color'	[ʃa:fe]	'achy feeling'		
h-s	[sa:t'u]	'a grass'	[sadˀd'e]	'pigeon-toed'		
	[ha:ttu]	'thief'	[hadˀd'a]	'medicine'		
h-k	[ha]	'grammatical particle'	[hadɛnno]	'to throw'		
	[ka]	'relativiser'	[kadɛnno]	'to ask'		

4.2. Vowel contrasts

4.2.1. *Contrastive vowel qualities*

phone	example	gloss	example	gloss	phoneme	grapheme
i-e	[di:ga:ti]	'to spread out'	[mi:ra:ti]	'to be refreshed'	/i,e/	i,e
	[de:ga:ti]	'to be poor'	[se:ra:ti]	'to warn'		
u-o	bu:ba:ti	'to flinch'	[ʃaʃʃua:ti]	'to be loosened'	/u,o/	u,o
	bo:ba:ti	'to scramble'	[soso:ti]	'to wipe'		
i-u	[diba]	'wholly'	[dubbi]	'word'		
	[duba]	'sheep's tail'	[dibi]	'another'		
i-u	[fida:ti]	'to save'				
	[fu:da:ti]	'to take'				
e-o	[fe:nna]	'do we?'	heda:ti	'to count'		
	[fo:na]	'cattleyard'	hoda:ti	'to nurse'		
a-o	[ada]	'astonishment'	[se:le]	'cleft palate'	/a/	a
	[oda]	'sycamore'	[so:lle]	'pale'		

4.2.2. *Contrasts in vowel length and voicing*

phones	example	gloss	example	gloss	phoneme	grapheme
a-aa-ā	[arr̩ɑ]	'today'	[mija:]	'wild animals'	/ɑ, a:/	ā, aa
	[a:r̩ɑ]	'hot'	[mija]	'sweet'		
	[are:ra]	'mother's sister'	[dara]	'increase?'		
	[are:r̩ɑ]	'diluted milk'	[da:ra]	'ashes'		
e-ee-ē	[ne:k̩k̩'ɑ]	'lion'	[re:]	'goats'	/e, e:/	ē, ee
	[nek̩'a]	'sperm'	[re]	'so then'		
	[ded̩e]	'he forgot'	[k'e:]	'near'		
	[de:d̩e]	'region'	[ke]	'my'		
i-ii-ī	[ita:ti]	'to happen'	[ji:]	'moon'	/j, i:/	ī, ii
	[i:ta:ti]	'to swell'	[huji]	'work'		
	[bifa]	'color-genitive'				
	[bi:fa]	'perfume'				
o-oo-ō	[boru]	'pre-dawn'	[wo:]	'hear I am'	/o, o:/	ō, oo
	[bo:ru]	'muddy water'	[wo]	'if'		
	[boro]	'west'				
	[bo:ro]	'young male elephant'				
u-uu-ū	[buda]	'slander'	[dub̩ɑ]	'sheep's tail'	/y, u:/	ū, uu
	[bu:da]	'cow horns that point down'	[du:b̩ɑ]	'then'		
	[fula]	'door'				
	[fu:l̩ɑ]	'face'				

5. Orma Phonemes

5.1. Consonant Phonemes

5.1.1. *Consonant Allophonic Rules*

/p/ voiceless bilabial stop

[p̚] before /p/

[p] elsewhere

/p'/ ejective bilabial stop

[p̚] before /p/

[p] before all other consonants

[p'] elsewhere

/b/ voiced bilabial stop

[b̚] before /b/

[b] elsewhere

/f/ voiceless labiodental fricative

[f] in all environments

/t/ voiceless alveolar stop

[t̚] before /t/

[t] elsewhere

/t'/ ejective alveolar stop

[t̚] before /t'/

[t'] elsewhere

/d/ voiced alveolar stop

[d̚] before /d/

[d] elsewhere

/d/ implosive alveolar stop

[d̚] before /d/

[d̥] elsewhere

/s/ voiceless alveolar fricative

[s] in all environments

/tʃ/ voiceless palato-alveolar affricate

[t̚ʃ] before /tʃ/

[tʃ] elsewhere

/tʃ'/ ejective palato-alveolar affricate

[t̚ʃ] before /tʃ'/

[tʃ'] elsewhere

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/dʒ/ voiced palato-alveolar affricate

[d͡ʒ] before /dʒ/

[dʒ] elsewhere

/m/ bilabial nasal

[m] free variation before /f/

[m] elsewhere

/n/ alveolar nasal

[n] free variation before /f/

[ŋ] before velar stops /k, k', g/

[n] elsewhere

/nʲ/ palatalised alveolar nasal

[n] before /nʲ/

[nʲ] elsewhere

/r/ alveolar rhotic

[r] clause initial, in a geminate construction, and following /b/

[r] elsewhere

/ʃ/ voiceless palato-alveolar fricative

[ʃ] in all environments

/l/ voiced alveolar lateral

[l] in all environments

/w/ bilabial semi-vowel

[w] in all environments

/j/ palatal semi-vowel

[ç] before voiceless vowel

[j] elsewhere

/k/ voiceless velar stop

[k̚] before /k/

[k] elsewhere

/k'/ ejective velar stop

[k̚] before /k'/

[k'] elsewhere

/g/ voiced velar stop

[g̚] before /g/

[g] elsewhere

/h/ glottal fricative

[h] in all environments

/h/ elided word-initially in free variation

5.1.2. *Optional Allophonic Phenomena*5.1.2.1. *Aspiration*

With the voiceless stops /p, t, k/, optional aspiration has been observed, which occurs mostly in slower, exaggerated pronunciation. Intervocalic stops rarely, if ever, take this aspiration, though it is quite common on the second segment of geminates (e.g. /kk/ → [kʰkʰ]). It has also been noted that aspiration was more likely to occur the further back the point of articulation.

5.1.2.2. *Devoicing*

There is a tendency for voiced consonants to devoice when they precede a voiceless vowel. This is more common and more pronounced with weaker consonants, such that /j/, which always devoices. Voiced stops rarely devoice.

Chart of Orma Consonant Phonemes and Graphemes¹⁴

Manner of Articulation		Point of Articulation	Bilabial	Labio-dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal	
Obstruents	Stop	vl	p		t			k		
		vd	b		d			g		
		eject	p'		t'			k'		
		impl			d'	d'				
	Affricate	vl				tʃ	ç			
		vd				dʒ	j			
		eject				tʃ'	ç'			
	Fricative	vl		f	s	s ¹⁵	ʃ	x	h	
	Sonorants	Nasal	vd	m		n				
						nʲ	ɲ			
Rhotics		vd			r	r				
					ɹ					
Laterals	vd			l						
Semi-vowels	vd	w				j	y			

¹⁴ When the grapheme differs from the phoneme, it is displayed to the right of its phoneme in a shaded box. E.g., /tʃ/ is written as a c-cedilla: ç

¹⁵ the z grapheme only occurs in borrowed words.

5.1.3. *Free variation of consonant phonemes*

/b/ and /p/ occur in free variation. This variation is not regional. Speakers may even freely vary their own pronunciation of these words. Some examples include:

<i>ibsa</i>	<i>ip'sa</i>	'light'
<i>kobaanī</i>	<i>kop'aanī</i>	'shoe'
<i>libsu</i>	<i>lip'su</i>	'blink'
<i>sabalu</i>	<i>sap'alu</i>	'dove'
<i>tabā</i>	<i>tap'ā</i>	'game'
<i>ç'obā</i>	<i>ç'op'ā</i>	'drop'

5.2. Vowel phonemes

The 1992 report and the 1996 update do not regard the voiceless vowels as separate phonemes, but state emphatically that they must be included in the orthography. These 1992 and 1996 reports site Stroomer¹⁶: "*Phonemically long final vowels are reduced phonetically to short vowels; phonemically short final vowels are reduced phonetically to be voiceless, elided or dropped altogether.*"

However, the five voiceless vowels must be regarded as phonemes, in addition to the five short vowels and five long vowels. It has been shown that all words end in a vowel, and fourteen of the fifteen vowel phonemes have been found in a contrastive relationship in word-final, monomorphemic words. In several recent Orthography workshops, the Orma continue to insist on marking the voiceless vowels, distinguishing them short and long voiced vowels.

	<u>_V#</u>		<u>__V#</u>		<u>__V:#</u>	
<i>a</i>	<i>biyyā</i>	'sand'	<i>miya</i>	'sweetness'	<i>miyaa</i>	'ferocious animal'
<i>e</i>	<i>ijoollē</i>	'wow!'	<i>ke</i>	'your'	<i>k'ee</i>	'near'
<i>i</i>	<i>aççī</i>	'there'	<i>ki</i>	'my'	<i>jii</i>	'moon'
<i>o</i>	<i>borō</i>	'tomorrow'	<i>boro</i>	'west'	<i>woo</i>	'hear I am!'
<i>u</i>	<i>bullukū</i>	'porridge'	<i>handarakku</i>	' <i>Lannea</i> <i>triphylla</i> '	NA	NA

*Chart of Orma Vowel Phonemes and Graphemes*¹⁷

<u>Short</u>		<u>Long</u>				<u>Voiceless Short</u>				
i	u	i:	ii	u:	uu	ɨ	ī	ɨ̥	ū	ū̥
e	o	e:	ee	o:	oo	ɛ̥	ē	ɔ̥	ō	
a		a:	aa			ɔ̥	ā			

¹⁶ Stroomer, H. 1987. *A Comparative Study of Three Southern Oromo Dialects*. PhD dissertation, Leiden, cited in *1992 Report*, p. 7.

¹⁷ When the grapheme differs from the phoneme, it is displayed to the right of its phoneme in a shaded box. E.g., /i:/ is written: **ii**

6. Distribution of Phonemes

6.1. Consonant sequences

- 6.1.1. All consonants may occur as geminates except /h/
- 6.1.2. With two adjacent consonant segments, the most common occurring in the first position are those with [+sonorant, +consonant] features: /l m n r/. These may be paired with most phonemes.
- 6.1.3. The nasals tend to assimilate to the place of articulation of the second consonant.
- 6.1.4. The remaining consonants which can occur in the first positions are: /b p' f s g k/.
- 6.1.5. The allowable pairs in pure Orma words are: /bd, bl, bn, br, bs, p'n, p's, fn, fs, ft, gs, ks, kt/.
- 6.1.6. The allowable pairs found in loan words are /bt, sl, sk, sn, sr, sm, sp/.
- 6.1.7. Semi-vowels, ejectives, and implosives do not occur with consonants other than as geminates. However, /p's/ does occur, but the [p'] becomes [p] in this environment.

Chart of Consonant Sequences¹⁸
Second Consonant Graphemes

	b	ç	ç'	d	ɗ	f	g	h	j	k	k'	l	m	n	n ^y	p	p'	r	s	x	t	t'	w	y
F	b	*		*								*		m				*	*					
i	ç		*																					
r	ç'			*																				
s	d				*																			
t	ɗ					*																		
C	f						*							*					*		*			
o	g							*											m					
n	h																							
s	j								*															
o	k									*											b	*	*	
n	k'										*													
a	l	*	*		*	*	*	*	*	*	*	*	*	*								*	*	
n	m	*		m		*							*	*			*		*		*			
t	n	m	*	*	*	*	*	*	*	*	*	m		*	m			m	*	*	*	*	m	*
G	n ^y													*										
r	p															*								
a	p'													m			*		*			m		
p	r	*		*	*	*	*	*	*	*	*	*	*	*			*	*	*	*	*	*	*	
h	s									b	b	b	b	b	b	b	b	b	*		bm			
e	x																			*				
m	t																				*			
e	t'																					*		
s	w																						*	
	y																							*

¹⁸ m – denotes sequences that only occur at morpheme boundaries. * occurs even within a morpheme. b occurs only before borrowed words. The chart covers surface form only. Epenthesis can preclude certain sequences that occur in underlying form.

6.2. Vowel Distribution

- 6.2.1. Each syllable contains one and only one vowel, therefore true vowel clusters do not exist in Orma.
- 6.2.2. Long and short vowels may occur word initially, medially, or finally.
- 6.2.3. Voiceless vowels only occur word final.
- 6.2.4. All Orma words end in a vowel, either voiced or voiceless.
- 6.2.5. Vowel sequence restrictions:

The only monomorphemic vowel sequences found in non-borrowed words include:

ao	<i>ao</i>	'molar'
io	<i>d'io</i>	'near'
ai	<i>haigi</i>	'pale yellow'
oe	<i>woeelā</i>	'group of young calves'
oi	<i>loi</i>	'writing board' (may be from Somali)
ua	<i>bua</i>	'chaff'
au	<i>k'alaule</i>	'cactus'

If this list is complete, then vowel monomorphemic sequences exclude:

/æ/
/ea, ei, eo, eu/
/ia, ie, iu/
/oa, ou/
/ue, ui, uo/

But after removing the monomorphemic constraint, the only vowel sequence that has not been found in Orma is */eo/*.

The following table includes examples of single or multi-morphemic words with various vowel sequences.

	a	e	i	o	u
a		<i>jaeessā</i>	<i>haigi</i>	<i>ao</i>	<i>k'alaule</i>
e	<i>nagea</i>		<i>ixeinī</i>	----	<i>bobeu</i>
i	<i>ixia</i>	<i>jeebienī</i>		<i>d'io</i>	<i>jeebiu</i>
o	<i>oaati</i>	<i>koetti</i>	<i>loi</i>		<i>itou</i>
u	<i>bua</i>	<i>muettu</i>	<i>bui</i>	<i>barruole</i>	

7. Morphophonemics

Orma morphophonemics is complex. Several morphophonemic rules are described herein to better assist in the formulation of the orthography and spelling rules. Suffixation described includes verb inflectional and derivational suffixes and certain case endings. Prefixation described includes reduplication and the use of the *hin-* and the emphatic morpheme *-umā*. The use of prefixes and suffixes are described more fully within the Orma Grammar.

7.1. Suffixation

Verb inflection for 1st person plural involves the root verb and the /n/ suffix. 2nd person singular and plural involve the /t/ and /teni/ suffix, respectively. In order to maintain syllable structure, verb roots ending in double consonants are handled with epenthesis or metathesis and are discussed later.

7.1.1. First Person Plural verb root + /n/:

changes in root's final consonant:			1 pl form	gloss
t, t', d, d', k, k', g, y → n / ____ n	assimilation	hat + n	hihannā	'we steal'
		hat' + n	hihannā	'we dust'
		did + n	hindinnā	'we reject'
		jiid' + n	hinjiinnā ¹⁹	'we'll be wet'
		hiik + n	hiinnā	'we untie'
		ç'abak' + n	hinç'abannā	'we stammer'
		duguug + n	hinduguunnā	'we scrape'
		booy + n	himboonnā	'we cry'
ç' → ç'i/ ____ n	epenthesis	boç' + n	himboç'inā	'we carve'
s → f / ____ n	dissimilation	daas + n	hindaafnā	'we defeat'
x, j	epenthesis ²⁰	bux + n	hinbuxoonnā	'we are worthless'
		aj + n	hi'ajoonnā	'we stink'
changes in /n/ after root:				
/n/ → r/r ____	nasal assimilates to liquid	mur + n	murrā	'we cut'
/n/ → l/l ____	nasal assimilates to liquid	bul + n	bullā	'we spend the night'
/b ²¹ , p', f, m, n, l, r/ are unchanged when followed by /n/				
p, w, ç, ñ, h have not been found in this environment ²² .				

¹⁹ exception: if d' follows a short vowel, the d' is replaced by vowel length.

e.g. hid' + n → hiinā 'we fast'; fed' + n → feenā 'we want'

²⁰ buxaati and ajaati are the only two data found with x- and j-final roots, and therefore the rule is highly uncertain.

7.1.2. Second Person**verb root + /t/:**

changes in root's final consonant:			<u>2sg form</u>	<u>gloss</u>
ç' → ç'i/ ____ t	epenthesis	boç' + t	himboç'itā	'you carve'
s → f/ ____ t	dissimilation	ijees + t	hi'ijeeftā	'you kill'
y → t/ ____ t	assimilation	booy + t	himboottā	'you cry'
x, j	epenthesis ²³	bux + t	hinbuxoottā	'you are worthless'
		aj + t	hi'ajootā	'you stink'
changes in /t/ after root:				
t → d / b, d, d' ____	assimilation	d'aab + t	hind'aabdā	'you cook'
		did + t	hindiddā	'you refuse'
		jiid' + t	hinjiittā ²⁴	'you'll be wet'
t → t' / t' ____	assimilation	hat' + t	hihatt'ā	'you steal'
changes in both:				
gt → dd	assimilation	d'ug + t	hind'uddā	'you drink'
kt → dd		beek + t	himbeeddā	'you know'
k't → tt'		d'ek' + t	hind'ett'ā	'you go'
/f, l, m, n, r, p', t/ are unchanged when followed by /t/				
p, w, ç, ñ, h have not been found in this environment.				

²¹ in free variation, the b is sometimes found to partially assimilate in that it becomes a bilabial nasal.

E.g. k'abaati: k'ab + n → k'amnā. However, k'abnā is used more frequently.

²² ç, ñ, and w exist as geminates and are discussed in the section 7.2, Epenthesis.

²³ buxaati and ajaati are the only two data found with x- and j-final roots, and therefore the rule is highly uncertain.

²⁴ exception: if d' follows a short vowel, the d' is replaced by vowel length.

e.g. hid' + t → hiitā 'you fast'; fed' + t → feetā 'you want'

7.1.3. The Causative

The causative is derived by adding the /s/ to the verb root. Sometimes the /s/ takes the form of /sis/ or /siis/. These differences are not analysed in this report.

verb root plus /s/:

changes in root's final consonant:		<u>1 sg form</u>	<u>gloss</u>
t, t', k, k', g, y → s / ____ s	hat + s	hihassiiisā	'I cause to steal'
	hat' + s	hihassiiisā	'I cause to dust'
	hiik + s	hihiissā	'I untie'
	hulluuk' + s	hihulluussisā	'I rescue'
	gog + s	hingossā	'I dry'
	booy + s	himboossā	'I make cry'
ç' → ç'i/ ____ s	boç' + s	himboç'isiifā	'I cause to carve'
d' → : / ____ s	hid' + s	hihiisisā	'I fast'
(long vowels don't lengthen further)	jiid' + d	hinjiisā	'I wet'
changes in /s/ after root:			
s → ç / l ____	gal + s	hingalçā	'I return'
s → eess / j, x ____	aj + s	hi'ajeessā	'I stink'
	bux + s	himbuxeessā	'I make worthless'
changes in both:			
ds → çç	duud + s	hinduuççā	'I fill'
/b, f, m, n, p', r, s/ are unchanged when followed by /s/.			
/g/ is also found unchanged when followed by /s/.	mirriig + s	mirriigsiisā	'I agitate'
p, w, ç, ñ, h have not been found in this environment.			

7.1.4. Epenthesis

Roots that end in geminates normally take on an epenthetic /i/ when followed by the suffix /t, n, s/. Some words use other epenthetic vowels. For example, *dayyaati* 'to faint', takes on an epenthetic /aa/.

epenthesis	root	gloss	+t (2s)	+n (1p)	+s (2s)
bb	jibbaati	hate	jibbitā	jibbinā	jibbisiiftā
çç	duuççaati	fill	duuççitā	duuççinā	duuççisiiftā
dd'	hodd'aati	sew	hodd'itā	hodd'inā	hodd'isiiftā
ññ	gaaññaati	puberty	gaaññitā	gaaññinā	gaaññisiiftā
rr	darraati	faint	darritā	darrinā	darrisiiftā
ss	mid'aassaati	do	mid'aassitā	mid'aassinā	mid'aassisiiftā
ww	gawwaati	deaf	gawwitā	gawwinā	gawwisiiftā
yy	dayyaati	cracked	hindayyaatā	hindayyaanā	hindayyaaftā

The exception to this is /-dd/:

dd	seemmaddaati	'rejoice'	seemmaddā	seemmannā	seemmaççiiftā
----	--------------	-----------	-----------	-----------	---------------

Roots that end in non-geminate double consonants also normally take on an epenthetic /i/.

epenthesis	infinitive	gloss	+t (2s)	+n (1p)	+s (2s)
bs	dabsaati	'condemn'	dabsitā	dabsinā	---
rb	darbaati	'push'	darbitā	darbinā	darbisitā
rd	bardaati	'grow green'	---	---	bardisiiftā
lç	laançaati	'lessen'	laançitā	laançinā	---
rk	harkā	'arm/pull'	---	---	harkisiiftā
rk'	hurk'aati	'push'	hihurk'itā	hihurk'inā	hihurk'isiiftā
mf	ç'umfaati	'clean stomach'	ç'umfitā	ç'ufinā	ç'umfisiiftā
nf	danfaati	'sweat'	danfitā	danfinā	danfisiiftā
rd	bardaati	'grow green'	---	---	bardisiiftā
rm	furmaati	'relief'	furmitā	furminā	furmisiiftā

A few examples with different epenthetic vowels exist as well:

nç'	ç'iinç'aati	'smell roasted'	ç'iinç'ottā	ç'iinç'onnā	ç'iinç'essitā
rç'	harç'aati	'fall in'	---	harç'aanā	harç'aasitā
br	dabraati	'pass through'	dabartā	dabarrā	dabarsitā

7.1.5. Metathesis with Epenthesis

A few words use a combination of metathesis and epenthesis to maintain syllable structure as it forms suffixes. The 1992 report indicated this may happen to *verb roots ending in a consonant cluster with a liquid in the first position . . . and to the lexical forms for the ordinal and cardinal four* (p. 66). *When this happens, an epenthetic vowel is inserted between the swapped consonants; this vowel is identical to the vowel in the previous syllable.*

Additional data has shown this phenomena to be very rare. No rule has been discovered to predict this phenomenon, although a liquid is involved in every example.

The table below lists examples and is followed by somewhat contrastive counter-examples. The examples with metathesis are highlighted with italics.

<i>rg→gar</i>	<i>d'argaati</i>	<i>'to see'</i>	<i>nu hind'agarrā</i>	<i>'we see'</i>
rb→rbi	darbaati	'to push'	nu hindarbinā	'we push'
br→bar	dabraati	'to pass through'	nu hindabarrā	'we pass through'
<i>rg→gor</i>	<i>d'oorgaati</i>	<i>'to prevent'</i>	<i>nu hind'ogorrā</i>	<i>'we prevent'</i>
rg→rgi	ergaati	'to send'	nu hi'erginā	'we send'
rg→rgi	mirgaati	'to let down milk'	nu himmirginā	'we let down milk'
rg→rgi	bargaati	'to force-feed'	nu himbarginā	'we force-feed'
<i>lf→fol</i>	<i>kolfaati</i>	<i>'to laugh'</i>	<i>nu hinkofollā</i>	<i>'we laugh'</i>
lf→lfi	balfaati	'to dislike'	nu himbalfinā	'we dislike'
<i>rf→fur</i>	<i>arfeessa</i>	<i>'fourth'</i>	<i>afurī</i>	<i>'four'</i>
rf→rfi	barfenno	'to delay'	nu himbarfennā	'we delay'

7.1.6. Vowel Suffixes

Orma vowel morphophonemics needs further study, and is expected to be clarified as the grammar is studied further. The 1992 report provided several rules (Section 3.2, pp 63-66), but the 2005 addendum concludes that *"though it has some merit, is not accurate and should be disregarded."* Nevertheless, some vowel morphophonemic rules can be stated.

7.1.6.1. -a case suffixes

Genitive, source, and benefactive case are each marked by a phrase-final affix of /a/.

When it follows a voiceless vowel, it has the effect of voicing and assimilation:

namā	'man'	nama	'of the man'
nadd'eenī	'woman'	nadd'eeni	'of the woman'
borō	'tomorrow'	boro	'of tomorrow'

When it follows a word that ends in a voiced /a/, the /a/ is lengthened.

mata	'head'	mataa	'of the head'
innama	'people'	innamaa	'of people'

When it follows a word that ends in a voiced vowel other than /a/, there are no morphophonemic changes, and the suffix forms a new syllable. This applies whether the word ends in a long or short vowel. Note that rule does not apply to the number *sadi* 'three'. *Sadi* is the only /i/ final word found that is lengthened.

sagale	'food'	sagalea	'of food'
hori	'domestic animal'	horia	'of domestic animal'
saafō	'afternoon'	saafōa	'of the afternoon'
adu	'sun'	adua	'of the sun'
mii	'luggage'	miia	'of the luggage'
sadi	'three'	sadii	'of three'

When it follows a word that ends in a long /a:/, it is absorbed and doesn't lengthen further:

samaa	'heaven'	samaa	'from heaven'
buxaa	'wild animals'	buxaa	'of wild animals'

K'oonk'onī samaa d'uftē.

A voice-nom heaven-src came.

'A voice came from heaven.'

7.1.6.2. Back vowel assimilation

When short open voiced back vowels are followed by closed voiced back vowels (/a/ and /u/), they often assimilate, forming a close-mid long back vowel /oo/.

a + u → oo	hi'ita + u	→ hi'itoo	'it won't happen'
	abba	→ abboomā	'the lead male'
	hangafa	→ hangafoomā	'first born'
	mata	→ matoomā	'authority'
	gada	→ gadoomā	'generation'

But when the /u/ follows /a:/ the long vowel may dominate and the /u/ assimilate to /aa/, or remain distinct. When the /u/ follows /a/, the voiceless vowel assimilates to the voiced /u/:

miyaa + umā	→ miyaamā	'ferocious animal'
taa + u	→ taau	'sitting'
akkā + umā	→ akkumā	'just like'

Sometimes the assimilation doesn't occur for short vowels:
innama + umā → innamumā

7.2. Prefixes

7.2.1. The *hin-* prefix

The various uses of the *hin-* prefix are described in the Grammar. This prefix serves an important role in negation and incompletive aspect in simple sentences. E.g. *hink'abnā* 'I don't have' and *hink'abā* 'I have'

/n/ alveolar nasal

[m] before bilabial stops [p, p', b]

[ŋ] before velar stops [k, k', g]

elided before glottal fricatives [h]

[ʔ] before vowels

[n] before all other consonants

The spelling guidelines follow these rules, with the exception of the velar nasal which are spelt with /n/. Glottals are represented with an apostrophe. E.g. *himbaasinī*, *hi'abdetinī*, *hihobbaasu*, *hinñaaatinī*, and *hink'abu*.

7.2.2. Reduplication

Reduplication is used in verbs and other words to communicate the idea of repeated action. A reduplicated word repeats the first syllable of its root to form a prefix. Its usage will be discussed further in the Orma Grammar, but the phonological rules are presented here to enable consistent spelling of reduplicated words. The rules are ordered in three groups. Group #1 take precedence over group #2 rules, which take precedence over Group #3 rules.

Rule Group #1

Reduplication is determined by the onset of the root's first syllable. Note that vowel length is not preserved in the reduplicated prefix.

Rule Name	infinitive	reduplicated form	Rule ²⁵			R Abbrev
Vowel Initial	<i>afuufaati</i>	<i>a'afuufaati</i>	V__	→	V'V__	V#
	<i>eegaati</i>	<i>e'eegaati</i>				
Semi-vowel initial	<i>woraabenno</i>	<i>wowworaabenno</i>	S _v _V__	→	S _v _S _v S _v _V__	S _v #
	<i>woddaati</i>	<i>wowwoddaati</i>				
	<i>yed'aati</i>	<i>yeyyed'aati</i>				
	<i>yakkaati</i>	<i>yayyakkaati</i>				
Glottal fricative initial	<i>harçaati</i>	<i>haharçaati</i>	h never doubles			H#
	<i>haasoati</i>	<i>hahaasoati</i>				
	<i>hawweeffenno</i>	<i>hahawweeffenno</i>				
Palatalised nasal initial	<i>ñaanno</i>	<i>ñañaanno</i>	ñ always doubles word medially			Ñ#
	<i>ñukenno</i>	<i>ñañañukenno</i>				

Rule Group #2

For words that begin with any consonant except /h/, reduplication of a long vowel initial syllables always forms a geminate. Note again, that vowel length is not preserved in the reduplicated suffix.

Rule Name	infinitive	reduplicated form	Rule			R Abbrev
Long vowels to Geminate	<i>leeffamaati</i>	<i>lelleeffamaati</i>	CV _L __	→	CVCCV _L __	V _L
	<i>miit'aati</i>	<i>mimmiit'aati</i>				

Rule Group #3

For all remaining words, reduplication is determined by the consonants after the root's first syllable. If there are two consecutive consonant segments, then the reduplication is formed by a single consonant (2→1). If there is only one or no consonant segments, then the reduplication is formed by a geminate (0→2 or 1→2).

Rule Name	infinitive	reduplicated form	Rule			R Abbrev
Double to Single	<i>mart'ifenno</i>	<i>mamart'ifenno</i>	CVCCV__	→	CVCVCCV__	2→1
Single to Geminate	<i>mare_vnenno</i>	<i>mammare_vnenno</i>	CVCV__	→	CVCCVVCV__	1→2
None to Double	<i>duaati</i>	<i>dudduaati</i>	CVV__	→	CVCCVV__	0→2

²⁵ V – vowel phonemen (may be short, long, or voiceless); V_L – long vowel; S_v – semi-vowel (w, y);

Note that whenever a double consonant is formed by the causative derivative, the reduplication rule is that of the base form.

Causative	<i>ç'ap'senno</i>	<i>ç'açç'ap'senno</i>	<i>causative of ç'ap'aati</i>	1→2 causative
Causative	<i>jissaati</i>	<i>jijjissaati</i>	<i>causative of jigaati</i>	1→2 causative

7.2.3. Emphatic Morpheme *-umā*

Another morphophonemic process uses the emphatic morpheme *-umā*, in which the first syllable of the root of a word is repeated and combined with the *-umā* to form a prefix. This communicates the idea of continuous, rather than repetitive action. Its usage will be discussed further in the Orma Grammar, but the phonological rules are presented here. Note that this differs from the use of a separate word *inumā*, which is often combined with a verb to communicate the idea of definiteness.

Rule Name	infinitive	emphatic form	Rule		
Vowel initial	<i>elmaati</i>	<i>eemelmaati</i>	-umā + #V__	→	VVmV__
Consonant initial	<i>lakkisaati</i>	<i>laamlakkisaati</i>	-umā + #CV__	→	CVmCV__

Other vowel initial examples:

eegaati → eemeegaati	'keep waiting'
uumaati → uumuumaati	'keep creating'
ijjeesaati → iimijjeesaati	'keep killing'

Other consonant initial examples:

hodd'aati → hoomhodd'aati	'keep sewing'
hod'aati → hoomhood'aati	'keep nursing'
dabraati → daambabraati	'keep passing through'
fed'aati → feemfed'aati	'keep wanting'

Boomborbaada inumā d'argetteni.

'Keep searching, and you will surely find.'

8. Tone

Orma has tone, but its functional load is minimal, and classifying it has been difficult. No function has been discovered that would require it to be marked in the Orma orthography. Orma speakers have had no trouble reading the current Orma orthography, which does not mark tone. There is widespread enthusiasm among the Orma that their orthography is fully differentiated, marking all its sounds. However, even with this attitude, no interest has been expressed for marking tone.

No minimal pairs have been found which are distinguished by tone. It had been postulated that it may be associated with gender (1992 Report, pp. 42-47) or carry a small load in Orma syntax (1992 Report, p. 50, 94).

Gender

To test whether tone was a distinguishing factor in gender, Orma speakers were asked to listen to several archaic and recently borrowed words to determine gender. This was to observe how they determined gender from words that they likely had not heard before. Individual speakers agreed on gender in the vast majority of these words, but no clear tonal pattern difference was observed between those deemed masculine versus feminine. It became clear, however, that gender determination is purely phonological (refer to Section 9.1 Residue: Gender).

Syntax

Tone helps distinguish source case from benefactive. However, only in an unusual circumstance is it conceivable that this would result in an ambiguity within the sentence to the reader. Consider the forced ambiguity below, in which a person (beneficiary) and a location (source) could potentially be confused. The person is the beneficiary of the object, and marked with a high tone by an acute accent mark. When presented with this ambiguity, Orma speakers felt this unusual case did not warrant marking tone.

Guyyonī Adīá barua barreessā.

Guyyo wrote a letter for Adi. (Adi is a person—benefactive case)

Guyyonī Adia barua barreessā.

Guyyo is writing a letter from Adi. (Adi is a location—source case)

Tone in other Oromo languages

With our assumption that the Waata and Orma languages have no important tonal distinctions²⁶, Bernd Heine's 1981 report on Waata Grammar may also contribute to our conclusion on Orma tone (p. 23): “*Whereas tone is of grammatical significance in other Oromo dialects [i.e., other than Orma or Waata], it does not seem to have any distinctive function in Waata. Although some words are associated with specific tone patterns, most words are pronounced with various tone shapes without regard to context or meaning.*”

²⁶ The Waata are hunter-gatherers who dwell in the Tana River district among--but segregated from--the Orma. The Waata and Orma recently queried consider their languages to be identical. One literate Waata has read Orma literature using the present orthography, and endorsed it enthusiastically for the Waata as well.

But in Borana, another important Oromo language of Kenya, it appears that tone is more important, even though tone is not marked in Borana either. According to the CPK Borana language course book: *"Tone is more important from the point of view of grammar than in distinguishing the meanings of roots. The Nominative and Genitive have stable tonal forms which should be carefully learned, the accusative, dative, and ablative are unstable tonally and have high and low tone forms which will vary according to the context."*

Classification

It has been difficult to classify Orma tone. The 1992 Report stated that although tone exists on various levels, *the only functions which can be indicated solely by a difference in tone are focus in a simple sentence and the distinction between some case endings* (p. 50). It concluded that Orma is not a pitch-accent²⁷ language. However, in the 2005 Addendum, this conclusion was reversed *"Tone functions independently of stress. . . . The Orma data currently on hand tends to support the theory that Oromo languages may be more accurately described as pitch-accent languages, rather than tone languages."* Stegen²⁸ doubted a pitch-accent analysis, stating that he doesn't believe pitch-accent languages exist in Africa, and therefore it probably serves some restrictive function.

The current hypothesis is that Orma does serve some restrictive functions, but that none are important enough to warrant marking it in the orthography.

²⁷ In pitch-accent languages, stress and high pitch do not necessarily coincide.

²⁸ Private conversation with Oliver Stegen, SIL linguistics consultant serving in Tanzania, July, 2006.

9. Residue

9.1. Gender

Orma nouns have two classes, masculine and feminine. It is expected that a generative rule may be discovered for gender, but is yet to be determined. There is indisputable evidence that such a rule is phonologically rather than semantically based. Gender was elicited from several speakers and a high rate of consistency was noted. This consistency extended even to elicitations of archaic Orma words, well-known borrowed words, and new borrowed words. It was observed that an Orma speaker can even assign gender to a word that has no gender, such as interjections, conjunctions, and post-positions. Gender was elicited from two Orma speakers on such words, and they agreed on all but two of the thirty-five words. Tone was evaluated in these tests and no correlation between tonal patterns and gender was detected.

When two Orma speakers borrow the same new word, it is possible they may pronounce it differently, and therefore assign gender differently. For example, when 'computer' was pronounced [komp¹utta], it was assigned a masculine gender. But when other Ormas instead pronounced it [komputta], they consistently assigned it the feminine gender.

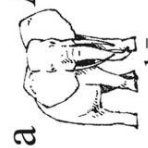

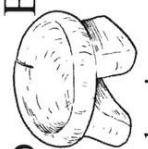
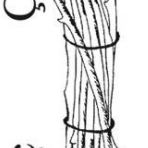

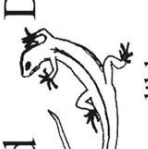

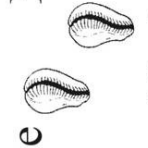
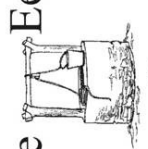
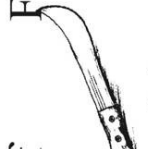


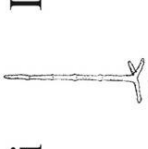
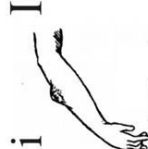

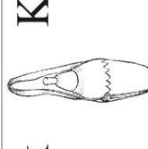
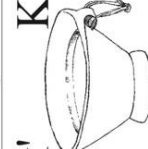
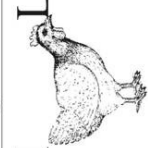
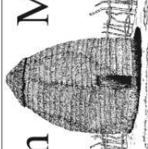

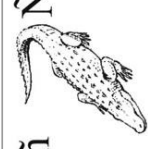
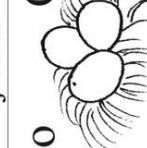


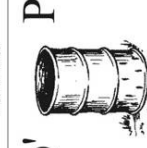


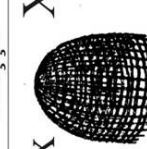
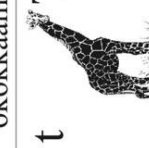
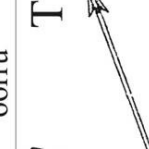



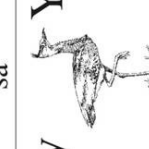

9.2. *aahei* 'yes' is the only occurrence found in Orma of a word found with /h/ word-medially.

9.3. Morphophonemics

- 9.3.1. Many vowels combine to form /o:/, but need further study. This may become more clear during the grammar analysis. Consider the following: *maççootta, ç'iinç'otta, ajootta, d'oottā, nagoomā, d'alootā, birrooma, maganoottī.*
- 9.3.2. Various causative suffixes exist: -s, -sis, -siis. Further study is needed to determine why which form goes with which verb.
- 9.3.3. Other prefixes and suffixes exist in Orma beyond those mentioned above.
- 9.3.4. *gostī* 'tribe-nominative' is the combination of *gosā* + *nī* → *gostī*, despite the morphophonemic rule that creates /fn/ from s + n, as in *ijees* + *na* → *ijeefna*.

10. Appendix – Orma Alphabet Chart

Arafti Afaani Orma

a	 arbā	Aa	 aarā	B	 barç'uma	Ç	 çaçça	Ç'	 ç'alaallu	d'	 d'addo	D'	 d'addo	
e	 eellaani	Ee	 eelā	F	 faç'o	G	 gorfo	H	 harre diida	ii	 iitā harka	I	 irba	
j	 jaarsā	K	 kurro	K'	 k'ori	L	 lukku	M	 minā	ñ	 ñaaçça	N	 ñaaçça	
o	 okokkaani	Oo	 oorru	P	 piki pikki	P'	 p'iipp'a	R	 roopp'i	s	 sa	S	 sa	
t	 tattawwe	T'	 t'iyā	U	 ummu	Uu	 buuti	W	 worsessā	y	 yaakamso	Y	 yaakamso	
													<p>Orma Alphabet Orma Language Project</p> <p>©2006 P.O. Box 44456 Nairobi, Kenya</p> 