CONSONANTS AND VOWELS IN THE WESTERN GURAGE VARIETY INOR: COMPLEX CONNECTIONS BETWEEN PHONEMES, ALLO- PHONES, AND FREE ALTERNATIONS

TSEHAY ABZA

ABSTRACT

This paper is concerned with the phonemic status of consonants and vowels of Inor, a Peripheral Western Gurage language in the southern part of Ethiopia. Determining the status of Inor consonants and vowels is a task well worth doing, as scholars disagree on their categorization. Qualitative research methodology is used in the study. The linguistic data have been collected using key informants and they have been analyzed thematically. The findings show that labialized and palatalized consonants have a phonemic status, even if the predictability of their occurrence cause them to be grouped in addition under the phonetic inventory of the language. It is also determined that, in addition to being the allophone of *b*, there are some indicators showing that a fricative bilabial β is phonemic, though this needs further investigation. Moreover, the high central vowel *i* has double status, being both phonemic and epenthetic.

[1] INTRODUCTION

Inor is spoken in the Gurage Zone of the Southern Nations, Nationalities and People Regional State. It is one of the South Ethiosemitic languages grouped under Peripheral Western Gurage along with Ener, Endegagn and Gyeto (Hetzron 1977:17). The total population speaking the language is 167,745 (CSA 2008:75).

This study aims to provide a description of the phonemic status of Inor consonants and vowels. In Inor, diachronic sound changes and specific synchronic developments have resulted in a complex situation, in which a phoneme can have a variety of allophones, some of which may also function as phonemes on their own. This has caused some disagreement in the literature on this. For instance, Berhanu and Hetzron (2000:13) did not treat labialized and palatalized consonants as separate phonemes, since they are often triggered by non-segmental grammatical morphemes. Prunet and Petros (1996) also argued that

all of these secondarily articulated consonants are derived in Western Gurage. Similarly, the labialized consonants /p^w, x^w, ʔ^w/ are lacking in Wendimu (2011:11), but not other labialized consonants. Moreover, Berhanu and Hetzron (2000:13) consider the high central vowel *i* to be epenthetic, although its occurrence is predictable in rare cases. Rose (1997:7) also confirms that *i* is epenthetic in all Gurage languages. Berhanu and Hetzron (2000:13) describe a low front vowel /æ/ for Inor, which is an unusual vowel in the Ethiosemitic languages. Wendimu (2011:16) and Rose (1997:7) refer to this vowel as /ɛ/.

This paper argues that all labialized and palatalized consonants are not only triggered by morphophonemic processes, but also have phonemic status in Inor. This paper also ensures a double status of the high central vowel *i*.

The data for this paper have been gathered in spring 2015 from two male native speakers of Inor, Tigistu Muraga (35 years old) and Nasir Awol (30 years old), who live near Gunchire.

The paper is divided into different sections. The second section elaborates on various views on the identification of phonemes. The third and fourth sections deal with the consonant and vowel phonemes in Inor, respectively. The fifth section focuses on the identification of consonants and vowels of Inor using phoneme/allophone approach to identify sounds that do not change, vis-à-vis sounds that adjust their form due to phonotactic reasons, or differ from speaker to speaker. The final section concludes the paper.

[2] IDENTIFICATION OF PHONEMES

Phonemes are the abstract underlying units of a language (Davenport and Hannahs 2005:116). Katamba (1996:22) defines them as “the functionally significant segments of a language”. Regarding the means of identifying phonemes, Davenport and Hannahs (2005:115) state that the phoneme/allophone approach, in which a group of sounds are represented abstractly by a particular phoneme depending on where they occur in a word, distinguishes between the surface sounds of a language and the underlying system. According to them, this enables us to distinguish systematically between underlying representations and sounds actually occurring in a language and to establish the relatively small inventory of underlying phonemes of a language by relating them to the greater number of sounds that speakers of that language actually produce.

Katamba (1989:22) identifies four basic procedures which are used to identify the phonemes of a language: the minimal pair test, contrasts in analogous environments, suspicious pairs, and recapitulation. He states that the minimal pair test is a key principle of phonemic analysis. Davenport and Hannahs (2005:117) also maintain that phonemes are most often established by finding a

contrast between the speech sounds which can be most easily seen in minimal pairs.

However, this method may sometimes lead to the wrong conclusion, as segmental phonemes might also be defined through a bundle of non-segmental features. Therefore, the phonemic analysis in this paper is based on the minimal pair test and the phoneme/allophone approach.

[3] CONSONANT PHONEMES

Contrary to Berhanu and Hetzron (2000:13) and Wendimu (2011:11), who assume eighteen and thirty-five consonant phonemes, respectively, for Inor, I identify thirty-nine consonant phonemes including palatalized and labialized consonants, since their occurrence is unpredictable, and it is possible to offer minimal and near minimal pairs for them (see List 3, List 6, List 7 and List 9 in the Appendix).

	Labial	Alveolar	Alveopalatal	Palatal	Velar	Glottal
Plosive/ Affricate	b p b ^w p ^w	t d t'	tʃ dʒ tʃ'	c ɟ c'	k g k' k ^w g ^w k' ^w	ʔ ʔ ^w
Fricative	f (β) f ^w	s z	ʃ ʒ	ç	x x ^w	
Nasal	m m ^w	n		ɲ		
Liquid		r (l) ²				
Glide	w			j		

TABLE 1: Phonemic consonant inventory.

Gemination is a rare feature in Inor. It does not exist word-initially, as the language tends to avoid word-initial consonant clusters (see List 2 in the Appendix).

The consonant phonemes in Table 1 are identified by the minimal pairs shown in List 3, List 4, List 5, List 6, List 7, List 8, List 9 and List 10 in the Appendix. All consonants occur word-medially, while *p*, *p^w*, *r*, *ɲ* do not appear word-initially (see the distribution of consonants in List 1 in the Appendix). The lateral *l* and

[1] Although I believe there is a need for further investigation on the phonemic status of β, I include it in the phonemic chart of consonants.
[2] The lateral l is very rare in Inor.

the approximant *w* never occur word-finally. Bahru (1981 E.C.:9) is of the opinion that *l* is lacking word-initially. However, in my data, it is found in several words word-initially, as in [ləmʈʃa] ‘twin’, [luga] ‘yoghurt’, [lu:x] ‘soul’. Minimal pairs containing the lateral *l* could not be found. According to Hetzron (1977:37), β is phonemic, which is also confirmed by my data, as its occurrence is unpredictable, i.e. both *b* and β are found intervocalically and following consonants:

- (1) a. [təzrabət’ə] ‘be curious’
 b. [t’əbət’ə] ‘hold’
 c. [nəkəβə] ‘find’
 d. [əβəsər] ‘for the meat’
 e. [butbutʃə] ‘puppy’
 f. [atβak’ərə] ‘succeed’

The plosive *b* is realized as [b] in the word-initial position or in the onset of a syllable immediately preceded by another consonant, as in (1e), but as [β] when preceded by prefixes, as in (1d). Sometimes, however, *b* and β may occur in the same phonetic environment, as in (1b) vs. (1c), which justifies the view that β is also a phoneme by its own. However, no convincing minimal pair was found for *b* and β.

The minimal pair method has its own methodological problem, i.e. it is used to establish contrasts between segmental phonemes, which in turn are defined through a bundle of non-segmental features. Thus, this method may lead to the wrong conclusion, because diachronic sound changes and language-specific synchronic developments may result in a complex situation, in which a phoneme can occur in a variety of allophones, which may also function as phonemes on their own (see [5]). For instance, in the minimal pair [ʒəpərə] ‘reply’ vs. [ʒəʔərə] ‘split’, *p* and *ʔ* are contrasting with each another. In the closely related Gurage language Ezha, however, the cognate words are [ʒəbbərə] ‘reply’ vs. [ʒətt’ərə] ‘split’, in which the contrasting segments are *b* and *t’* rather than *p* and *ʔ*. It therefore seems that Ezha [ʒəbbərə] changed into Inor [ʒəpərə] due to degeminating and devoicing, whereas *tt’* was degeminated and then debuccalized into [ʔ], i.e. it is an allophone of the phoneme *t’* in Inor. Accordingly, if we only consider the contrast between a glottal stop and another consonant, its alternation with an ejective in another form of the same word is missed.

[4] VOWEL PHONEMES

Inor has seven single vowel phonemes, their doubled counterparts, and two diphthongs. According to Berhanu and Hetzron (2000:13), the phonemic system

of Inor contains the low front vowel æ which alternates with aj . For Wendimu (2011:16), this vowel is ɛ which is very rare and alternates with ej . His only example for ɛ is $[\text{aʂɛnərə}]$ ‘yawn’. My informants, however, pronounce this word $[\text{aʂajnərə}]$, while Hetzron (1970:568) gives it as $[\text{aʂcænərə}]$ with the long open vowel æ for underlying aaj . Thus, the same word is pronounced in three different ways in Inor, probably due to speaker idiosyncrasies. In fact, the vowel ɛ seems to be an optional variant of the sequence central low vowel a , followed by the glide j , which fuses to the front vowel ɛ .

	Front	Central	Back
High	i/i:	ɨ/ɨ:	u/u:
Mid	e/e:	ə/ə:	o/o:
Low		a/a:	

TABLE 2: Phonemic vowel inventory.

A word in Inor can begin in any vowel (except diphthongs) and end in any vowel except the long vowels o: and u: . In contrast, Wendimu (2011:16) states that a word can end in any vowel except long vowels. However, I recorded a number of words ending in long vowels, as in $[\text{wa:}]$ ‘this’ and $[\text{xa:}]$ ‘that’. In addition, long vowels occur at the end of some biliteral verbs and 2/3PF pronouns, as in $[\text{tʃijə:}]$ ‘stink’, $[\text{fəta:}]$ ‘untie’, $[\text{axa:}]$ ‘you (PF)’, $[\text{xina:}]$ ‘they (F)’. In my opinion, the vowel length in the pronouns probably developed as a compensation for *m , which diachronically disappeared. Hetzron (1970:561-2) discusses different origins of the double vowels of Inor, and states that these vowels tend to behave in the same manner whatever their origin. According to him, one of these origins is the loss of the feminine plural, which he traced from -əma through -əʂa to -aa by comparing Inor forms with the parallel forms in Ezha and Gyeto. As for diphthongs, no word is recorded containing them word-initially and -medially (see List 11 in the Appendix). The vowel phonemes shown in Table 2 are identified through minimal and near minimal pairs (see List 12, List 13 and List 14 in the Appendix).

Regarding the phonemic status of the high central vowel ɨ , my data confirms Wendimu’s (2011:16) finding that the vowel ɨ is often used as an epenthetic vowel, but it is not as rare as stated by Berhanu and Hetzron (2000:13). In my data, too, the vowel ɨ occurs in a number of words in which it cannot be predicted (see List 11 in the Appendix). It is also used as epenthetic vowel to separate clusters of two distinct consonants word-initially and -finally if the second member is a sonorant, or in a cluster of three consonants except in words such as $[\text{bəʂanʔjəme}]$ ‘in everywhere’, $[\text{wəjʔʂad}]$ ‘knife (made of wood)’, $[\text{arʂʔat}]$

Vocalic length is phonemic in Inor. It is formed by morphophonemic processes, i.e. assimilation of two short vowels. Vowel length also occurs lexically. This contrast is shown in the minimal pairs in List 13 and List 14 in the Appendix.

[5.1] *Alternation between n , η , r , l*

(2) Perfective 2sm Jussive 2sm Jussive

a.	[xənʔa]	[xirʔa]	[xiʔəwa]	'prevent'
b.	[bənʔa]	[birʔa]	[biʔəwa]	'eat'

The roots of the verbs in (2) are related to the Semitic roots $\sqrt{k-l-\text{ʕ}}$ ‘prevent’ (a), and $\sqrt{b-l-\text{ʕ}}$ ‘eat’ (b) – whose second root consonant *l* diachronically changed in Inor, namely to the nasal *n* in the perfective, but to *r* elsewhere, which, in turn further changed to *j* with 2_{SF} subjects. In Inor, the alternation between *n* and *r* can also be observed in nouns, in which initial *n* becomes $\tilde{r}$ if a prefix is attached, such as the genitive marker ə- in (3):

- (3) a. [ni:sa] 'corpse' vs. [ãĩĩːˢa]³ 'of a corpse'
 b. [naiə] 'porcupine' vs. [ãĩãĩ] 'of a porcupine'

There are also instances of *n* in Inor verbs, in which it does not alternate with *r* or *j*:

(4) 3sm Perfective 3sm Imperfective 3sm Jussive

[3] The mutated *n* causes the spread of nasalization on the vowels in a base or stem – unless it is blocked by consonants other than *ʔ* or *j*. When the nasalization chain stops on a blocker consonant, an intrusive nasal occurs (cf. Hetzron 1977:44; see also Bovin 1996:22).

a. [menʔa]	[j̃m̃ɛnʔa]	[ɛm̃ɛnʔa]	‘fill up’
b. [fəndə]	[j̃f̃ənd]	[əf̃ɪnd]	‘cut into half’

In some cognates, Inor singleton *n* corresponds to geminated *rr* (5a–c) or *ll* (5d–f) in related Ethiosemitic languages. According to Chamora (1996:60), geminated *ll* and *rr* regularly degeminate in Inor, and then get nasalized, as shown in (5):

(5)	Root	Inor	Amharic	
a.	√b-r-r	[bənərə]	[bərrərə]	‘fly’
b.	√m-r-r	[mənərə]	[mərrərə]	‘be bitter’
c.	√t-r-f	[tənəfə]	[tərrəfə]	‘be left over’
d.	√b-l-ʕ	[bənʔa]	[bəlla]	‘eat’
e.	√m-l-ʕ	[menʔa]	[molla]	‘be full’
f.	√s'-l-ʔ	[t'əna:]	[t'əlla]	‘hate’

Beside the alternation of *n* in the perfective with *r* in the imperfective/jussive, as in (2), Inor also has a few tri- and quadrilateral verbs, in which *r*, or its nasalized variant *ṛ*, in the perfective/imperfective alternates with *n* in the jussive, in which it assimilates in place of articulation to the immediately following consonant, as in (6b):

(6)	3sm Perfective	3sm Perfective	3sm Jussive	
a.	[k'wṛṛṇt'əsə]	[jik'wṛṛṇt's]	[ək'wənt'is]	‘pinch’
b.	[sɪrəpətə]	[jɪsrəpt]	[əsəmbɪt]	‘sojourn’

In some Inor verbs, geminated palatal nasal *j̃n* in the perfective alternates with singleton *j* in the imperfective/jussive. The glide *j*, furthermore, assimilates with an immediately preceding vowel *ə* into *e* (cf. the imperfective base of all verbs in (7)), or is realized as vowel *i* word-finally if preceded by a consonant, as in the jussive base in (7c–e) (see also [5.5]):

(7)	3sm Perfective	3sm Imperfective	3sm Jussive	
a.	[ʔəj̃nə]	/j-ʔəj/ → [jiʔe]	*/ə-ʔəj/ → [əʔre]	‘be lost’
b.	[fəj̃nə]	/j-fəj/ → [jiʔe]	*/ə-fəj/ → [əfre]	‘fear’
c.	[k'wəj̃nə]	/j-k'wəj/ → [jik'we]	*/ə-k'wəj/ → [ək'wi]	‘roast’
d.	[af'wəj̃nə]	/j-a:f'wəj/ → [ja:f'we]	*/ə-af'wəj/ → [a:f'wi]	‘take a rest’
e.	[təj̃nə]	/j-təj/ → [jite]	*/ə-tj/ → [əti]	‘swear’

In the nominals derived from the verbs in (7d–e), i.e. [f'wəjad] ‘rest (N)’, and [təjə] ‘oath’, *j* also substitutes the geminated palatal nasal *j̃n*. From a diachronic

point of view, the geminated palatal seems to occur in roots in which an original root-final glide *j* was lost, but still left a trace in the palatalization (and gemination) of the preceding nasal *n* into *ɲɲ*. The assumed singleton nasal *n*, in turn, results from a diachronic sound change **ll > n*, which can be deduced from the verb [kʷəɲɲə] ‘roast’ in (7c), which has the cognate verb [kʷolla] in Amharic.

In addition to the common alternation *ɲɲ-j* in (7), the glide *j* in the jussive base of the verbs in (7a–b) further mutates to the trill *r* for reasons that are not clear. This mutation is also found with plural subjects in the imperfective/jussive bases in two verbs, as shown in (8):

- (8) 3pm Perfective 3pm Imperfective 3pm Jussive
a. [fʷəɲɲomʷ]	[jifʷəroa]	[əfʷrəwwa]	‘fear’
b. [afʷəɲɲomʷ]	[ja:fʷəroa]	[a:fʷroa]	‘take rest’

Furthermore, a few verbs with geminated *ɲɲ* as second root consonant in the perfective degeminate it to *n* in the imperfective and jussive:

- (9) 3SM Perfective 3SM Imperfective 3SM Jussive
a. [cʷəɲɲə]	[jicʷəɲ]	[əcʷəɲ]	‘be fat’
b. [mʷəɲɲə]	[jĩwǣɲ] ⁴	[ǣwǣɲ]	‘feel bad’
c. [ʔəɲɲə]	[jɪʔɪɲ]	[əʔəɲ]	‘beget’

Diachronically, an original **l* can also appear as *r* in Inor:⁵

- (10) Inor Amharic Gəʿəz
a. [məsərə]	[məssələ]	[məsələ]	‘resemble’
b. [wəʔarə]	[walə]	[wəʔələ]	‘spend the day’
c. [barə]	[alə]	[bihlə]	‘say’

Moreover, the word-final *r* in a number of Inor nouns is related to *l* in cognates from other Ethiosemitic languages:

- (11) Inor Amharic
a. [gamera]	[giməl]	‘camel’
b. [kəsər]	[kəsəl]	‘charcoal’
c. [ĩṁǣĩ]	[kʷimal]	‘lice (also ‘donkey’ for Inor)’
d. [kəʔər]	[kʷitʰəl]	‘leaf’

[4] For *mʷ > w̃*, see [5.3].

[5] The Gəʿəz data are taken from Leslau (1991), while the data for Ezha and Chaha are from my own knowledge of the languages.

To summarize, the sonorants **l*, **n*, and **r* are central elements in a network of interrelated diachronic sound changes yielding a complex allophonic distribution of sonorants in current Inor. Accordingly, the realization of the phoneme /n/ includes the allophones [r, ɾ, j, n], while /ɲ/ has the allophones [j, ɲ, r]. Moreover, these allophones also function as phonemes in Inor, since they contrast with each other in minimal pairs:

- (12) a. [mena] ‘work’ [mira] ‘kind’
 b. [ma:n] ‘who’ [ma:r] ‘forgive (sm)!’
 c. [aɲə] ‘bump’ [anə] ‘there is’
 d. [wijə] ‘honey’ [wirə] ‘truth’
 e. [ija] ‘I’ [ina] ‘we’

[5.2] *Alternation between ejectives and the glottal stop*

In Gunnän Gurage, the glottal stop ʔ can be a continuation of the original **ʔ* and **ʕ*, but more frequently functions as an allophone of the postvocalic ejectives *tʔ*, *ʕʔ*, *kʔ*, or *kʷʔ* as a result of a debuccalization process (cf. Berhanu and Hetzron 2000:11). Inor belongs to the group of Gurage languages that have retained an original glottal stop, which is shown in (13), in which the Inor data are contrasted with cognates from Gəʕəz. This comparison shows that the intervocalic glottal stop in Inor represents the original consonant, and is thus a phoneme, because its occurrence is not predictable synchronically in these words:

- (13) Inor Gəʕəz
 a. [saʔarə] [səʔələ] ‘ask’
 b. [saʔaɲjə] [səʔəmə] ‘kiss’
 c. [waʔarə] [wəʔələ] ‘spend the day’
 d. [saʔar] [saʔir] ‘grass’

In most Gunnän Gurage languages, an original intervocalic glottal stop is lost, which often results in the merger of two mid-central vowels into a low-central vowel, thus **əʔə > *əə > a*, as shown in (14a) vis-à-vis the Gəʕəz data in (13a):

- (14) Inor Ezha/Chaha
 a. [təsəʔarə] [təsarə-m] ‘ask’
 b. [sarə] [sarə-m] ‘be happy’

The loss of the original glottal stop in Ezha and Chaha causes a number of homonyms; e.g. (14a) and (14b), whereas its preservation in Inor prevents this development.

Moreover, an allophonic glottal stop resulting from the debuccalization of

an original ejective is found with great frequency in Inor, in which it even occurs word-initially, e.g. (15a, d), whereas Gunnän Gurage languages like Chaha or Ezha still tend to retain the original ejective:⁶

(15)	Inor	Ezha	Chaha	
a.	[ʔətərə]	[k'ətt'ərə-m]	[k'ət'ərə-m]	'kill'
b.	[ʒəʔərə]	[ʒətt'ərə-m]	[ʒət'ərə-m]	'split'
c.	[feʔə]	[fəʔʃ'ə-m]	[fəʃ'ə-m]	'grind'
d.	[ʔiraʔərə]	[k'irakk'ərə-m]	[k'irak'ərə-m]	'mix'

The allophonic glottal stop also occurs in Inor nouns, as shown in (16), in which the Inor data are contrasted with cognates from Ezha and Chaha:

(16)	Inor	Ezha	Chaha	
a.	[ʔiʔfiʔ]	[t'ifir]	[t'ifir]	'fingernail'
b.	[ʒiʔə]	[ʒət'ə]	[ʒət'ə]	'nine'
c.	[kəʔər]	[k'it'ər]	[k'it'ər]	'leaf'
d.	[eʔə]	[əʔʃ'ə]	[əʃ'ə]	'wood'
e.	[fəʔəʔ]	[fijək']	[fek']	'goat'

The item (16c) originally contains two different ejectives, i.e. word-initial *k'* and word-medial *t'*, as shown in the Ezha and Chaha cognates. While the word-medial ejective *t'* is regularly debuccalized to *ʔ* in Inor, word-initial *k'* lost its ejective feature resulting in *k*. The conditions for the two de-ejectivization strategies are still unclear. It also remains unclear which original ejective is debuccalized to *ʔ* in Inor, since ejectives also frequently occur in Inor:

(17)	Inor	Ezha	Chaha	
a.	[nək'əsə]	[nəcc'əsə-m]	[nək'əsə-m]	'limp'
b.	[mət'ərə]	[mətt'ərə-m]	[mət'ərə-m]	'be clear'
c.	[k'ənəmʒə]	[k'ənnəmə-m]	[k'ənəmə-m]	'insult'
d.	[t'ək'ək'ə]	[t'əkk'ək'ə-m]	[t'ək'ək'ə-m]	'be about to die'

Moreover, there are two additional instances of a glottal stop in Inor, which cannot be traced to an original glottal stop or pharyngeal fricative, or to an ejective. In a few words, the glottal stop occurs as the second element in a consonant cluster, which starts with a sonorant, i.e. *βʔ*, *mʔ*, *nʔ*, *rʔ*, *lʔ*, *wʔ*, *jʔ*. In (18), for instance, the sequences *nʔ*, *mʔ*, *lʔ*, *jʔ* seem to be a reflex of the original geminated *nn*, *mm*, *ll*, *jj*, respectively, when the Inor data are compared with their

[6] The verb-final suffix -m in the Ezha and Chaha data in (14) is an obligatory marker of affirmative perfective verbs in main clauses. For further details, cf. Rose (2007:413).

Ezha cognates, whereas Chaha does not compensate for the loss of gemination:

- (18)
Inor	Ezha	Chaha	
a. [bənʔa]	[bənna-m]	[bəna-m]	‘eat’
b. [sənʔa]	[sənna-m]	[səna-m]	‘arrive’
c. [səmʔa]	[səmma-m]	[səma-m]	‘hear’
d. [elʔa]	[ella-m]	[ela-m]	‘intend, desire’
e. [xujʔa]	[xujja]	[xuja]	‘twenty’

However, if the glottal stop in the Inor sonorant clusters did indeed originate from the loss of gemination, it should be lacking in those word forms in which the corresponding original sonorant is singleton. This is obviously not the case, as shown in (2) above, where the sonorant-glottal stop clusters also occur in the non-geminating bases of the imperfective and jussive. Furthermore, the Ezha cognates for the Inor data in (19a–c) have no geminated sonorant:

- (19)
Inor	Ezha	
a. [ar β ʔat]	[ar β ətt]	‘four’
b. [amʔist]	[amist]	‘five’
c. [sa β ʔat]	[sə β att]	‘seven’
d. [soʔost]	[sost]	‘three’

The Inor data in (19) also exclude the assumption that the glottal stop in the sonorant clusters stems from a diachronically lost word-final glottal stop or pharyngeal fricative, as these consonants do not occur in cognates for the items in (19) or (18e). Finally, the glottal stop in (19d) is intrusive, since it splits an original vocalic element represented by the vowel *o* in Ezha.

[5.3] *Lenition*

Word-initially, the labial plosives, the labial glide, and the nasals are spirantized in Inor if preceded by a prefix ending in a vowel, as shown in (20):⁷

- (20)
a. /b/ → [β]:	[bəsər]	vs.	[əβəsər]
	‘meat’		‘of the meat’
b. /b ^w / → [w]:	[b ^w irxɪma]	vs.	[əwɪrxɪma]
	‘stork’		‘of the stork’
c. /m/ → [m̃]:	[mira]	vs.	[ə̃m̃iɾā]
	‘kind’		‘of the kind’
d. /m ^w / → [w̃]:	[m ^w ina]	vs.	[ə̃w̃ina]

[7] Recall that the plosive /p, p^w/ and the nasal /ɲ/ do not occur word-initially.

	‘uncle (mother's side)’		‘of the uncle’
e. /w/→[w̃]:	[wədəja]	vs.	[əw̃ədəja]
	‘adult (male)’		‘of the adult (male)’
f. /n/→[r̃]:	[ni:sa]	vs.	[əṛi:ˈsa]
	‘corpse’		‘of the corpse’

These consonants are also spirantized on verbs if preceded by subject prefixes or the relative-clause verb marker ə:

(21)	3sm	3sm	3sm Relative	
	Perfective	Imperfective	perfective verb	
a. /b/→[β]:	[bəta:]	[jiβəda]	[əβəta]	‘take’
b. /m/→[m̃]:	[maʔa]	[jiṃṃāʔā]	[əṃṃāʔā]	‘come’
c. /n/→[r̃]:	[nəkəβə]	[jiṛṛəxiβ]	[əṛṛəˈkəβə]	‘find’

In a number of words, however, *w* does not spirantize, but remains unchanged, as, e.g. in [wətəʔə] ‘he fell’ vs. [jiwədiʔ] ‘he falls’.

In addition, the velar stop *k* is spirantized to [x] intervocalically in verb conjugation, as in [bəkərə] ‘he lost’ vs. [jiβəxiɾ] ‘he loses’. On the other hand, the fricative *x* in Inor also results from the diachronic sound change **k*→*x*; as seen, for instance, when comparing Gə‘əz *śók* ‘thorn’ with Inor *sox* ‘thorn’ (cf. Leslau 1991: xxvi).

Although *x* and *w* are the postvocalic weakened allophones of *k* and *b^w* respectively, they are also phonemes, which occur word-initially like the corresponding plosives, as in [bʷixima] ‘stork’ vs. [wiɾə] ‘truth’, or [kətəfə] ‘chop up’ vs. [xətərə] ‘thatch a roof’.⁸

[5.4] Free consonant alternations

In a number of Inor words, certain consonants are interchangeably used without affecting the actual meaning of the words. The free alternations *p*~*f* (or *p*~*b*), *p*’~*b* and *s*’~*t*’ (or *s*’~*t*) are peculiar to loanwords in Inor, as in (22), in which they have acquired a social meaning:

(22)	Educated speaker		non-educated speaker	
a.	[polis]	(<Amharic)	[folis~bolis]	‘police’
b.	[s’om]	(<Aharic<Gə‘əz)	[t’om~tom]	‘fasting’
c.	[itjop’ja]	(<Aharic<Gə‘əz)	[itobija]	‘Ethiopia’

[8] See also [3] for a similar ambiguous relationship between *b* and *β*.

The original pronunciation of *p*, *p'*, *s'* in loanwords – usually taken from Amharic as the immediate source language – is characteristic of educated Inor speakers who have a good command of Amharic. The alternating pronunciation of *p*, *p'*, *s'*, in contrast, dominates among illiterate or non-educated Inor speakers, as well as children. Children, moreover, tend to substitute word-initial alveopalatal consonants for their non-palatal alveolar counterparts:

- (23) Adult's speech Children's speech
a. [tʃəkərə]	[təkərə]	'cook'
b. [dʒəpərə]	[dəpərə]	'finish'
c. [ʃətərə]	[sətərə]	'wither'

[5.5] *Assimilation of glides and adjacent vowels*

The glides /j, w/ tend to assimilate with the immediately adjacent central vowels /i, ə, a/ into the front vowels [i, e, ε], or the back vowels [u, o], respectively, as, e.g. in /sʃij/ > [siʃi] 'break (sf)!' or /t'iw/ > [t'u] 'breast' word finally, or in /jiʔij/ > [iʔij] 'he begets' or /wifəntʃa/ > [ũmfwəntʃa] 'door, entrance' word initially. Consequently, [i, e, ε] and [u, o] are phonologically conditioned vowels in the environment of j and w, respectively. However, there are words in which the glides do not assimilate with adjacent vowels, as in [waraj] 'rumor', [a:j] 'where', or [wisa] 'kind of bread made from ensete pith'.

[5.6] *Effects of labial and palatal coarticulation*

The labialization of non-coronals and the palatalization of velars is a peculiar feature of most Gunnän Gurage languages, including Inor (cf. Hetzron 1977:45). According to Podolsky (1991:13), labialized consonants developed from plain labial and velar consonants, due to the adjacent back vowels /o, u/, thus *Cu > C^w(i) or *Co > C^wə. However, there are words in Inor for which such an origin of labial coarticulation is impossible, as in [m^wecə] 'bury', or [g^war] 'part of farm yard (very near to the home)'. In addition, labialized consonants also contrast with their plain counterparts in minimal pairs, including [m^war] 'share' vs. [ma:r] 'forgive (sm)!'

Regardless of the origins of both labialization and palatalization, synchronically they represent productive morphophonological processes triggered by the non-segmental features ^w or ^j as separate morphemes, or as part of segmental morphemes (cf. Hetzron 1971:194). Labialization and palatalization triggered by a suffix affect the rightmost labializable or palatalizable consonant anywhere within the base (cf. Rose 1994:113). If there is no labializable or palatalizable consonant in a root, the non-segmental features cannot be realized.

The non-segmental feature ^w labializes plain labials, velars, and glottal consonants as follows: $p \rightarrow p^w$, $b \rightarrow b^w$, $\beta \rightarrow w$, $f \rightarrow f^w$, $m \rightarrow m^w$, $k \rightarrow k^w$, $k' \rightarrow k'^w$, $g \rightarrow g^w$, $x \rightarrow x^w$, $\text{ʔ} \rightarrow \text{ʔ}^w$.

Labialization is triggered by different morphophonemic processes, such as the formation of the verbal noun from the jussive template, the formation of the impersonal, and the formation of the third person plural with perfective and imperfective verbs:

(24)	2sm Jussive	Verbal noun	Impersonal Perfective	Impersonal Imperfective	3pm Perfective	
a.	[dɪrg]	[ədɪrg ^w t]	[dənəg ^w i]	[jɪdərg ^w i]	[dənəgum ^w]	'hit'
b.	[kitɪf]	[əkɪtɪf ^w t]	[kətəf ^w i]	[jɪkətɪf ^w i]	[kətəfum ^w]	'chop'
c.	[daʔ]	[ədaʔ ^w t]	[daʔ ^w i]	[jɪdaʔ ^w i]	[daʔum ^w]	'laugh'
d.	[təkɪr]	[ətək ^w ɪrt]	[tʃək ^w əri]	[jɪtʃək ^w ɪri]	[tʃək ^w ərm ^w]	'cook'
e.	[bar]	[əwɑrt]	[b ^w ari]	[jɪw̃rɪ]	[b ^w arm ^w]	'say'
f.	[xar]	[əx ^w art]	[x ^w ari]	[jɪçiri]	[x ^w arm ^w]	'know'
g.	[dar]	[ədɑrt]	[dɑri]	[jɪdəri]	[darm ^w]	'bless'
h.	[ətʰ]	[ətʰ ^w t]	[antʰ ^w i]	[ja:tʰ ^w i]	[antʰ ^w um ^w]	'cut'

In (24a–c), the base-final consonant is labialized. Because base-final *r* in (24d–f) cannot be labialized, the non-segmental feature ^w docks onto the next available labializable consonant, which is the penultimate *k* in (24d), but the base-initial *b* or *x* in (24e–f). If no labializable consonant is available in a root, the labial feature remains covert, as in (24g–h).

All coronal and velar consonants can be palatalized in Inor, i.e. $t \rightarrow tʃ$, $d \rightarrow dʒ$, $t' \rightarrow tʃ'$, etc., and $k \rightarrow c$, $g \rightarrow ɟ$, $k' \rightarrow c'$, $x \rightarrow ɕ$. Palatalization, for instance, marks the female gender with the 2SF subject affix in the jussive conjugation:

(25)	2sm Jussive	2sf Jussive	
a.	[dɪrg]	[dɪrɟ(ua)]	'hit!'
b.	[səsɪx]	[səsɪç(ua)]	'husk by pounding!'
c.	[əkɪk]	[əcɪc(ua)]	'itch (sf)'

The non-segmental features also affect the pronunciation of adjacent central vowels. Accordingly, the feature ^w optionally changes the central vowels *i* and *ə* into the back vowels *u* and *o* (cf. Hetzron 1970:567), as in [g^wɪr~gur] 'lump (clay)', [x^wəʔə~xoʔə] 'spill'. Among the long vowels, only *ə:* can be labialized into *o:*, as in [ə:ʔɪr] 'let him fence (it) (SM)' vs. [o:ʔ^wɪrt] 'to fence' (see Hetzron 1970: 567 for further detail). Similarly, the palatal feature of a consonant affects the following central vowels so that *i* and *ə* are pronounced *i* and *e*, respectively, as in /çida/> [xɪda] 'she', /təçərə/> [təxerə] 'be known'. Thus, [u, o] and [i, e] are

conditioned allophones of /i/ and /ə/ in the vicinity of the labial and palatal features, respectively (see also [5.5]). On the other hand, these front and back vowels are also phonemes (cf. List 11, List 12, List 13 and List 14 in the Appendix).

[5.7] *Diphthongs*

In addition to the rising diphthong -Vj, Inor possesses two falling diphthongs, -oa and -ua, which are derived from the original masculine plural suffixes *-əmu and *-imu, respectively (cf. Hetzron 1970:563, 1971:568; Berhanu and Hetzron 2000:15), and exclusively occur word-finally. They are not found word-initially, but when followed by other suffixes, they are pronounced as -oo and -u, respectively, as in [xunoa] ‘they (m)’ vs. [xunoom] ‘and they (m)’, or [axua] ‘you (pm)’ vs. [axum] ‘and you (pm)’. This process indicates that the falling diphthongs are combinations of two vowels, and, therefore, not phonemic according to Berhanu and Hetzron (2000:15). Wendimu (2011:19), however, considers them to be phonemes because, unlike other vowels, the falling diphthongs cannot be nasalized, and may even trigger palatalization. My data confirm Wendimu’s (2011:19) assumption.

[6] CONCLUSION

This paper has exemplified the difficulties of establishing the phonemic status of Inor consonants and vowels by means of the classical minimal pairs method alone, since phonetics and morphology are tightly interrelated with each other. A phoneme can occur with a variety of allophones, which may also function as phonemes on their own. Despite the fact that labial and palatal coarticulated consonants often result from morphophonological processes triggered by the non-segmental features ^w and ^j, they are considered phonemes because their occurrence in many lexical items is not predictable on phonological or morphological grounds. Similarly, the high central vowel i, which functions as an epenthetic vowel to resolve impermissible consonant clusters, is also a phoneme in Inor, since in many words its existence cannot be predicted. Thus, it is concluded that it has a double status as phonemic and epenthetic vowel. In a number of words, β and b occur in identical environments. Consequently, both of them must be phonemic, although β also functions as a postvocalic allophone of b.

ACKNOWLEDGMENTS

I thank Tigistu Muraga and Nasir Awol for contributing data. I am also grateful to Ronny Meyer and Lutz Edzard for comments on this article, leading to significant improvements. Thanks are also due to Beharu Lilaga for discussion and

comments. Moreover, I acknowledge the support of the Norhed project *Linguistic Capacity Building: Tools for the Inclusive Development in Ethiopia* between Addis Ababa University, Hawassa University (Ethiopia), the University of Oslo and the Norwegian University of Science and Technology.

REFERENCES

- Bahru Lilaga. 1982. *The morpho-phonemics of nouns and verbs in Inor*. Addis Ababa: Addis Ababa University (Senior Essay).
- Berhanu Chamora. 1996. Consonant distribution in Inor. In Grover Hudson (ed.), *Essays on Gurage language and culture*, 53-67. Wiesbaden: Harrassowitz.
- Berhanu Chamora and Robert Hetzron. 2000. *Inor*. München: Lincom Europa.
- Bovin, Robert. 1996. Spontaneous nasalization in Inor. In Grover Hudson (ed.), *Essays on Gurage languages and culture*, 21-34. Wiesbaden: Harrassowitz.
- CSA = Central Statistics Authority. 2008. *Summary and statistical report of the 2007 population and housing census: population size by age and sex*. Addis Ababa: UN-FPA.
- Davenport, Mike and S. J. Hannahs. 2005. *Introducing phonetics and phonology*. Oxford: Oxford University Press.
- Degif Petros Banksira. 2000. *Sound mutations: the morphophonology of Chaha*. Amsterdam: John Benjamins.
- Fekede Menuta and Ronny Meyer. 2015. Sonorant alternations in Muher. In Lutz Edzard (ed.), *Arabic and Semitic linguistics contextualized*, 531-553. Wiesbaden: Harrassowitz.
- Hetzron, Robert. 1970. Vocalic length and stress in Ennemor. *Le Museon* 83, 559-581.
- Hetzron, Robert. 1971. Internal labialization in the tt-group of Outer South-Ethiopic. *Journal of the American Oriental Society* 91(2), 192-207.
- Hetzron, Robert. 1977. *The Gunnän-Gurage languages*. Napoli: Istituto Orientale di Napoli.
- Katamba, Francis. 1988. *An introduction to phonology*. London: Longman.
- Leslau, Wolf. 1951. Archaic features in South Ethiopic. *Journal of the American Oriental Society* 71(4), 212-230.

- Leslau, Wolf. 1991. *Comparative dictionary of Gəʿəz: Gəʿəz-English / English-Gəʿəz with an index of the Semitic roots*. Wiesbaden: Harrassowitz.
- Podolsky, Baruch. 1991. *Historical phonetics of Amharic*. Tel-Aviv: Baruch Podolsky.
- Prunet, Jean-François. 1996. Guttural vowels. In Grover Hudson (ed.), *Essays on Gurage languages and culture*, 175-203. Wiesbaden: Harrassowitz.
- Prunet, Jean-François and Degif Petros (Banksira). 1996. L'interaction entre schemes et racines en Chaha. In Jacqueline Lecarme, Jean Lowenstamm and Ur Shlonsky (eds.), *Studies in Afroasiatic grammar*, 302-336. The Hague: Holland Academic Graphics.
- Rose, Sharon. 1994. The historical development of secondary articulation in Gurage. In K. Moore, D. Peterson, C. Wentum (eds.), *Proceedings of the twentieth Annual Meeting of the Berkeley Linguistic Society: special session on historical issues in African Linguistics*, 112-124. Berkeley: Berkeley Linguistics Society.
- Rose, Sharon. 1997. *Theoretical issues in comparative Ethiosemitic phonology and morphology*. Montreal: McGill University (Ph.D. dissertation).
- Rose, Sharon. 2007. Chaha (Gurage) morphology. In Alan S. Kaye (ed.), *Morphologies of Asia and Africa*. Volume 1, 403-427. Winona Lake, Indiana: Eisenbrauns.
- Wendimu Habte. 2011. *The phonology of Inor: phonological processes*. Addis Ababa: Addis Ababa University (MA Thesis).

APPENDIX: DISTRIBUTION AND MINIMAL PAIRS OF CONSONANT AND VOWEL PHONEMES

LIST 1: Distribution of consonants word-initially, -medially and -finally

	Initially	Medially	Finally
/p/		[t'ipawə] 'narrow'	[təʃ'ep] 'abstain (sm)!'
/p ^w /		[kap ^w at] 'mattress'	
/b/	[bəʔər] 'hundred'	[t'əbət'ə] 'hold'	[gəb barə] 'become cool, be calm'
/b ^w /	[b ^w irxima] 'stork'	[at'ab ^w əʃ'ə] 'beam'	
/β/		[nəkəβə] 'find'	[t'iβ] 'tribe'
/f/	[fenəgə] 'carry on head'	[gəfərə] 'make free'	[sif] 'sew (sf)!'
/f ^w /	[f ^w əʃə] 'fart'	[af ^w əŋŋə] 'take rest'	[ã:mf ^w] 'bird'
/m/	[məməɾ] 'neck'	[amərə] 'believe'	[əsəm] 'brother'
/m ^w /	[m ^w aʔə] 'be hot'	[arəm ^w əm ^w ad] 'bruise'	[moʔom ^w] 'they (m) came'
/w/	[wirə] 'truth'	[wirawir] 'goiter'	
/t/	[tikə] 'child'	[ətəm] 'sister'	[k'əʃ'a:t] 'basket'
/d/	[daŋga] 'cheek'	[nəmədə] 'love (v)'	[bənəd] 'bald'
/t'/	[t'əβa] 'mud'	[at'e] 'finger'	[mit'it'] 'sorrow'
/s/	[siyə:] 'buy'	[asiyə:] 'sell'	[gus] 'old'
/z/	[zənʔa] 'sow'	[ziza] 'cold'	[bəzaz] 'dream'
/n/	[nəkəβə] 'find'	[anəβəd] 'tongue'	[tən] 'smoke (N)'
/r/		[ciʃərəŋə] 'messenger'	[bəsar] 'meat'

/l/	[luga] 'yoghurt'	[t'aβak'wila] 'pumpkin'	
/ʃ/	[ʃika] 'trap'	[aʃa] 'you (sf)'	[ja:rəʃ] 'he builds'
/ʒ/	[ʒəpərə] 'reply'	[təʒəpərə] 'return'	[əʒ] 'see (sm)!'
/tʃ/	[tʃəkərə] 'cook'	[kitʃa] 'worry'	[ətʃ] 'boy'
/dʒ/	[dʒəgar] 'garden yard'	[wərədʒə] 'compound'	[tʃawadʒ] 'farmer'
/tʃ/	[tʃawəda] 'chat'	[atʃ'əfəd] 'something'	[təzrabatʃ] 'curious'
/c/	[ciʃərəjə] 'messenger'	[micara] 'fever'	[əcic] 'itch (sf)!'
/ɟ/	[jecədə] 'accompany'	[təjaʔarə] 'depend on'	[dirɟ] 'hit (sf)!'
/c'/	[c'ifafə] 'ankle'	[jic'ən] 'be fat'	[tic'ec'] 'she lies'
/ç/	[faraç] 'patient'	[wəçə] 'udder'	[siç] 'flee (sm)!'
/ɲ/		[bəɲə] 'thigh, month'	[jazwəɲ] 'be pretty'
/j/	[jisətʃ] 'he drinks'	[tʃijə] 'hump (cow)'	[waraj] 'rumor'
/k/	[kəsər] 'charcoal'	[zəkədə] 'remember'	[dək] 'calf'
/kʷ/	[kʷintʃif] 'beard'	[səkʷəkʷə] 'squirrel'	[hirakʷ] 'call (sm) him!'
/g/	[gaz] 'war'	[dʒəgar] 'garden yard'	[adʒig] 'loan, debit'
/gʷ/	[gʷir] 'lump (clay)'	[dʒigʷarə] 'problem'	
/k'/	[k'ar] 'voice'	[fuk'əjə] 'whistle'	[barik'] 'old person'
/k'ʷ/	[k'ʷak'wəsə] 'wink'	[ək'wirtʃ't] 'to despise'	
/x/	[xəta] 'deny'	[axə] 'you (sm)'	[lu:x] 'soul'
/xʷ/	[xʷəʔə] 'deny'	[tʃəxʷərə] 'deny'	[anəxʷ] 'deny'

	‘spill’	‘stump’	‘I’m present’
/ʔ/	[(ʔ)akədə] ⁹	[məʔətəd]	[fəɲəʔ]
	‘tie’	‘sickle’	‘goat’
/ʔ ^w /	[ʔ ^w ənʔom ^w]	[oʔ ^w ərə]	
	‘they went up’	‘squeeze’	

LIST 2: Distribution of geminated consonants word-medially and -finally

	Medially	Finally	
/ff/	[effə]	‘cover’	[eff] ‘cover (sm)!’
/mm/	[emmə]	‘defeat’	[emm] ‘defeat (sm)!’
/nn/	[inni]	‘all’	
/ɲɲ/	[ʔɲɲə]	‘beget’	

LIST 3: Minimal pairs for labials: /p, pp, b, m, m^w, w/

/p, pp/	[epə]	‘a type of clothe’
	[eppə]	‘refuse’
/b, m ^w /	[becə]	‘cry’
	[m ^w ecə]	‘bury’
/m, w/	[mijə]	‘side (of body)’
	[wijə]	‘honey’
/m ^w , w/	[m ^w aʔə]	‘be hot’
	[waʔə]	‘swallow’

LIST 4: Minimal pairs for alveolars: / t, d, s, z, n /

/t, d/	[təjə]	‘oath’
	[dijə]	‘rain, outside of home’
/d, z/	[dəɾma]	‘young mule’
	[zəɾma]	‘adults (male)’
/s, z/	[səkərə]	‘be drunk’
	[zəkərə]	‘jump’
/z, n/	[zəkədə]	‘remember’
	[nəkədə]	‘touch’

[9] Word-initial ʔ is said to be unpronounced, but it occurs if preceded by a prefix (Prunet 1996:178, 191; Berhanu and Hetzron 2000:13). According to Leslau (1951:214), any original initial laryngeal is zero in Inor. In intervocalic position, however, original *ʔ and *ʕ are preserved as ʔ.

LIST 5: Minimal pairs for palatals: /ʃ, ʒ, tʃ, tʃʰ, dʒ, ʧ, ʥ, c, c', ɟ/

/tʃ, tʃʰ/	[tʃijə]	'hump (of cow)'
	[tʃʰijə:]	'stink'
/tʃ, dʒ/	[ətʃ]	'boy'
	[ədʒ]	'hand'
/ʃ, ʧ/	[çin]	'heart'
	[ʃin]	'tooth'
/ʧ, ɟ/	[çin]	'heart'
	[ɟin]	'part of head around nape of the neck'
/ʒ, dʒ/	[zəpərə]	'reply'
	[dʒəpərə]	'finish'
/c, c'/	[ecərə]	'plane wood'
	[ec'ərə]	'chew'

LIST 6: Minimal pairs for velars: /k, k', g, kʷ, k'ʷ, gʷ/

/k, g/	[kəkɪr]	'embrace (sm)!'
	[gəkɪr]	'make straight (sm)!'
/k, k'/	[nəkəsə]	'bite'
	[nək'əsə]	'limp'
/kʷ, k'ʷ/	[kʷa:ɸi]	'let it be paid'
	[k'ʷaɸi]	'let it be thrown away'
/g, gʷ/	[ʃəgərə]	'exchange'
	[ʃəgʷərə]	'wizard'

LIST 7: Minimal pairs for stops: /p, b, t, t', k, k', g, ʔ, bʷ, gʷ, ʔʷ/

/p, t/	[gəpa]	'enter'
	[gəta:]	'pour'
/bʷ, gʷ/	[bʷɪr]	'main'
	[gʷɪr]	'lump (clay)'
/b, g/	[bəta:]	'take'
	[gəta:]	'pour'
/t, k/	[nətədə]	'it was burned'
	[nəkədə]	'touch'
/t, k'/	[tən]	'smoke (N)'
	[k'ən]	'horn'
/t', k'/	[t'əna:]	'hate'
	[k'əna:]	'be succeed'
/ʔ, ʔʷ/	[neʔə]	'sleep, spend the night'
	[noʔʷə]	'bark'

LIST 8: Minimal pairs for fricatives: /f, s, z, ʃ, x/

/f, s/	[nəfa]	‘blow’
	[nəsa]	‘lift’
/f, x/	[fəta:]	‘untie’
	[xəta]	‘deny’
/z, ʃ/	[zin]	‘nape of neck’
	[ʃin]	‘tooth’
/ʃ, x/	[axə]	‘you (sm)’
	[aʃə]	‘see’

LIST 9: Minimal pairs for nasals: /m, mʷ, n, ɲ/

/mʷ, n/	[mʷəsa]	‘calf’
	[nəsa]	‘lift’
/m, n/	[səmʔa]	‘hear’
	[sənʔa]	‘arrive’
/n, ɲ/	[anə]	‘there is’
	[aɲə]	‘bump’

LIST 10: Minimal pairs for glides: /w, j/

/w, j/	[waʔar]	‘herd, spend the day (sm)!’
	[ja:r]	‘he goes’

LIST 11: Distribution of vowels word-initially, -medially and -finally

	Initially	Medially	Finally
/i/	[ift]	[mʷina]	[hari]
	‘face’	‘uncle (mother's side)’	‘wise’
/e/	[emmə]	[mena]	[wəxe]
	‘defeat’	‘work’	‘good’
/i/	[ĩʔk'ura]	[əñĩĩĩ]	[maʔatʃi]
	‘egg’	‘why’	‘she came’
/ə/	[əɖʒ]	[kəs]	[tawjə]
	‘hand’	‘abdomen’	‘orphan’
/a/	[at'e]	[k'ar]	[gorfa]
	‘finger’	‘voice’	‘malaria’
/u/	[ũʔfʷəd]	[busəd]	[maʔaxu]
	‘cover (N)’	‘anus’	‘I came’
/o/	[oʔot]	[t'əpʷə]	[boto]
	‘to go out’	‘suck’	‘lake’
/oa/			[xunoa]

/ua/			'they (pm)' [axua]
/i:/	[i:na]	[bi:d]	'you (pm)' [gərədi:]
	'our'	'house'	'the girl and'
/e:/	[e:ʔə]	[de:ka]	[we:]
	'of wood'	'long'	'or'
/i:/	[i:xa]	[jɪ:n̩ʃ]	[wərətʃi:]
	'of water'	'he says'	'she went and'
/ə:/	[ə:ʒ]	[mə:ʔ]	[epə:]
	'let him see'	'birth pains'	'do'
/u:/	[ū:mpʰwətʃa]	[lu:x]	
	'of door'	'soul'	
/o:/	[o:ʃt]	[mo:də]	
	'to see'	'he is died'	

LIST 12: Contrast of comparable vowel phonemes

/i, ə/	[xari]	'wise'
	[xarə]	'know'
/i, a/	[git]	'middle, half'
	[gat]	'pain'
/a, o/	[k'ar]	'voice'
	[k'or]	'navel'
/e, ə/	[ʔeɲnə]	'beget'
	[əɲnə]	'(be) lost'
/e, u/	[neʔ]	'sleep (sm)!'
	[nuʔ]	'big, elder'

LIST 13: Minimal pairs showing phonemic status of long vowels

/i, i:/	[ija]	'I'
	[i:ja]	'mine'
/e, e:/	[eʔə]	'wood'
	[e:ʔə]	'of wood'
/ə, ə:/	[əʒ]	'see (sm)!'
	[ə:ʒ]	'let him see'
/o, oo/	[oʔot]	'to go out'
	[o:ʔot]	'to feel pain'

LIST 14: Minimal pairs showing lexical occurrence of long vowels

/ə, ə:/	[epə]	‘a type of clothe’
	[epə:]	‘do’
/a, a:/	[ʃəta]	‘knife’
	[ʃəta:]	‘stink’
/u, u:/	[mud]	‘die (sm)!’
	[mu:d]	‘death’

CONTACT

Tsehay Abza
Hawassa University
tsehayabza@gmail.com