

ADDIS ABABA UNIVERSITY
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THE PHONOLOGY OF INOR: PHONOLOGICAL PROCESSES

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ABSTRACT

35 consonant phonemes, 8 vowels along with their long counterparts and two falling are recognized in Inor. The consonants /ɲ/ and /r/ do not occur word-initially. Sequences of two consonants are allowed word-initially, they also occur in word-medial and -final positions. Consonant clusters with more than two members are usually not permitted, except in the word *ʔarβʔət* 'four', in which three consonants are observed sequentially at word-medial position. In Inor, consonant gemination is rare. Inor has a few allophonic consonants, such as [n, r, ɾ, j] are allophones of /n/ and [j, ɲ] as allophones of /ɲ/.

With regard to vowels, /u/ does not occur at word initially; /ɛ/ does not occur word-initially and -finally. The remaining vowels occur everywhere.

The processes that are identified in Inor phonology are labialization, palatalization, nasalization, spirantization, glottalization, voicing, and metathesis with regard to consonants and rounding, lengthening, rising, and backing with regard to vowels.

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LIST OF ABBREVIATIONS

δ	Syllable	Glott	Glottal
.	Syllable boundary	Imp	Imperative
:	Long vowel or consonant	Imperf	Imperfective
č	Nasalized consonant or consonant being the nasalization trigger	Impers	Impersonal
ǃ	Nasalized vowel	Juss	Jussive
∅	Zero morpheme	Lat	Lateral
C	Coda of a Syllable or placeholder for any consonant	m	Masculine
C ^j	Palatalized consonant	Masc	Masculine
Con	Continuant	N	nucleus
Cons	Consonantal	O	Onset
Cor	Coronal	Pass	Passive
C ^w	Labialized consonant	Perf	Perfective
f	Feminine	Pl	Plural
Fem	Feminine	R	Rhyme
		Relat	Relative-clause verb marker
		Sg	Singular
		Son	Sonorant
		V	Placeholder for any vowel

1 Background of the Study

1.1 The People

Inor (or Ennemor, its Amharic name) refers to the people, the language they speak and the large area of the land they live in. Henceforth, the name Inor will be maintained for the language. The number of Inor speakers is about 167,745 according to the 2007 CSA Population and Housing Census of Ethiopia among the total figure of native Gurage Languages speakers which is about two millions (CSA 2007: 57).

The Inor people live in the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS) in the Gurage Zone, which is situated in the south-west of Addis Ababa. The name of the particularly district where Inor is spoken is Gunchire, which is also the name of the administrative centre of the Woreda. A large number of Inor speakers live outside their home villages, especially, in Addis Ababa and in some regional towns for different purposes, mostly for trading. Different religions are represented in Inor, such as Christianity, Islam and locally based belief systems.

The people of Inor make their life by cultivating different plants, breeding animals and trading. The most important cultural plant is *äsäd* 'false banana' from which *wussa* 'pith of the plant', their staple food, is prepared. The leaves of the false banana plant are used to make baskets, mats, sacks, etc. Cows, sheep, goats, horses, mules, donkeys, etc. are among the animals they breed. Khat is the most common plant used for trading in the area. It is mainly exported to Addis Ababa.

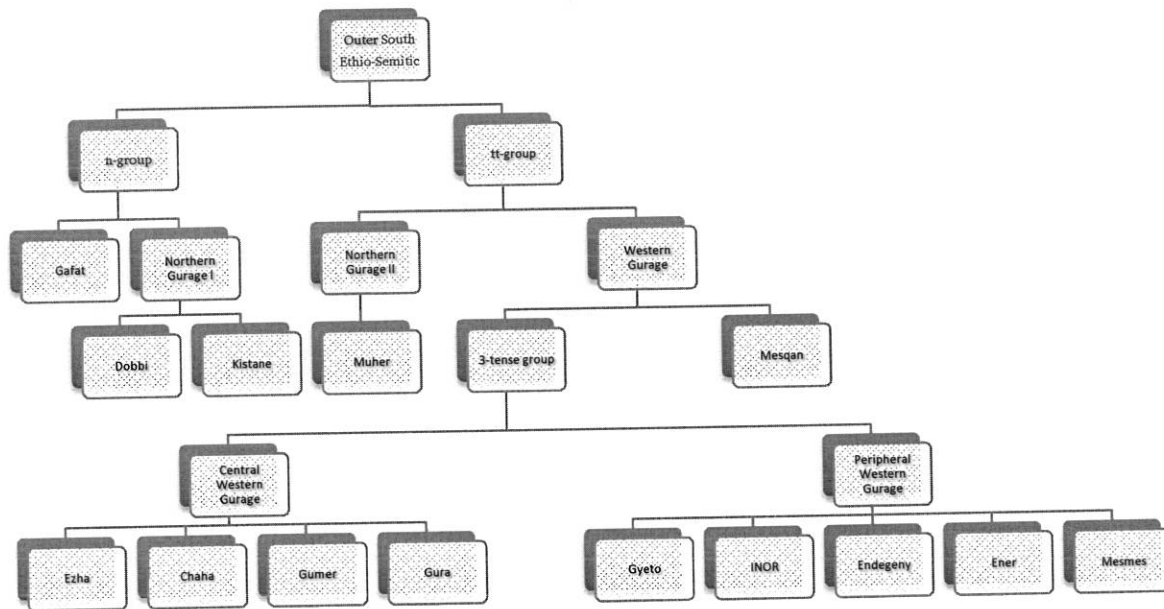
1.2 The Language

Various scholars classified Gurage languages in slightly different ways. According to Hetzron's (1972: 119) classification of Gurage languages, Inor genetically belongs to the Ethiopian Semitic languages, in the Outer South Ethiopic branch, particularly to the Peripheral Western Gurage sub-branch. Hetzron (1972) classified Gurage languages into

North Gurage (NG), East Gurage (EG), and West Gurage (WG). North Gurage, a typological group, comprises Kistane, Muher, and Dobbi. West Gurage includes Mesqan; Central West Gurage with Ezha, Cheha, Gumer, and Gura; and Peripheral West Gurage with Gyeto, Inor, Endegeny, and Ener. The East Gurage group includes Silt'e, Wolane, and Zay. However, Leslau (1992: 226) classified the Gurage languages into East Gurage consisting of Silt'e, Wolane and Zay; Cheha, Gyeto, Ezha, Inor, and Endegeny are grouped under West Gurage and only Kistane represents North Gurage. In his previous study, Leslau (1952:63) classified Muher, Mesqan, and Dobbi as a sub-division of West Gurage though he believed further investigation is needed. Rose (1994:112) also classified Muher as a West Gurage language confirming Leslau's classification.

Given these controversies in the classification of Gurage languages, I adopt the position of Hetzron (1972, 1977) because it is the hitherto most detailed classification of these languages and, therefore, broadly accepted in Semitic studies.

Figure 1: Classification of Inor (according to Hetzron 1977:17)



The term Gurage has been used for a Semitic-speaking group of tribes in Cushitic territory, south-south-west of Addis Ababa. Their languages represent roughly two different branches of South Ethio-Semitic: East Gurage, and Western Gurage. The latter two groups together are called *Gunnän-Gurage*. The term *gunman* 'head' which is uttered *gunʔar* in Inor serves as an isogloss to distinguish Western Gurage from East Gurage languages (cf. Hetzron 1972:6-7).

Hetzron (1972) also dealt with the origin of the term Gurage. Most folk theories report Tigrean origin of the Gurage in which the name *Gurage* has been identified with the Tigrean town *Gurʔa* followed by the noun *ge* 'country'. According to Hetzron (1972), this is impossible because the cluster *rʔ* in *Gurʔa* would have survived in Peripheral Western Gurage. Yet, all Gurage languages have *gurage* or *gʷaragʷe* and not *gurʔage*. Another folk theory is that Gurage land lies to the left (*gura* means 'left') of the central part of Shoa. This theory is also unacceptable. Thus, the etymology of the name *Gurage* remains unsolved. Most probably it is connected with *Gura* the name of sections within Cheha.

1.3 Statement of the Problem

Inor is known less than its Central Western Gurage neighbor Cheha (Prunet 1991:2). It is the pioneering work of Wolf Leslau that has brought Inor into attention of the linguistic community. Regarding the phonological description of the language, there is still no detailed work on Inor. Therefore, this research attempts to fill this gap by providing a detailed description of the phonological processes in Inor.

1.4 Objective of the Study

The aim of this paper is to describe the sound system of Inor, dealing mainly with the phonological processes.

Specifically, the study aims at:

- Providing the sound systems of Inor,
- Identifying the phonological processes in Inor, and
- Giving specific circumstances in which the processes occur.

1.5 Significance of the Study

The study has the following contributions:

- It contributes to the meager linguistic literature on Inor.
- It provides linguistic facts to policy makers, language planners and ethnographers.
- In the future, the study may serve as source material for further investigations in the phonology of Inor, or for historical and comparative Gurage studies.

1.6 Limitation of the Study

The bulk of the data on which this study is based was collected in the north-east of the Inor-speaking area, in Gunchire town, the administrative centre, and in Andahore Kebele. The informants were Haile Hibdeta who is about 80 years old and lives in Andahore Kebele, and Delil Neri who is about 50 years old and lives in Gunchire town. I had no female informants for the time I took for data collection was too short.

1.7 Method of the Study

First hand data were elicited from informants in the form of elicitation. As the first step the Inor equivalents of the SIL 320 wordlist were elicited from the two informants, Haile Hibdeta and Delil Neri. Then the words were transcribed phonetically and analyzed according to the inquiries of the study. Secondly, a short text, taken from Hetzron (1977:235-236) has been supplemented to the data and was used for the analysis.

2 Review of Related Literature

2.1 Phonology and Phonological Processes

Nathan (2008: 1) among other scholars defines phonology as follows:

“Phonology is the study of the organization and structure of the sound of language. Like most areas of grammar, it deals both with universal and language specific principles. All spoken human languages make all (or virtually all) their words with combinations of consonants and vowels, and all (or virtually all) languages group those sounds into units called syllables, and generally, group the syllables into larger groups called feet. Those constitute universal aspects of phonology. On the other hand, different languages make use of different sounds, and different languages choose the structure of their syllables differently. Some allow very complex syllables ..., while others ... only permitsyllables consisting of a single consonant followed by a single vowel.”

Roach (1993:43) in his definition of phonology puts emphasis on the function of phonemes and how different phonemes relate to each other, e.g., through common phonological processes, like assimilation, dissimilation, deletion, epenthesis, metathesis, nasalization, palatalization, and labialization. O’Grady (1987: 41-45) deals with these phonological processes in detail. According to him, speech production is not a series of isolated events. The process of articulation is rather complex in which many fine adjustments are carried out rapidly as we speak. As a consequence, speech production often results in the articulation of one sound affecting another sound. Articulatory adjustments that occur during the production of speech are called processes. Their commulative effect results in making words easier to articulate, and, in this sense, they are said to make speech more efficient. O’Grady (1987:42) claims that only a finite number of phonological processes operate in a language. Nevertheless, these processes may produce a great deal of linguistic variability.

Nathan (2008: 72-82) claims that the idea that sounds are changed to fit their surroundings is very old. In addition, this change is usually automatic and exceptionless.

“To bring the idea process more closer, consider how speech is affected when the articulatory organs are otherwise engaged. It is perfectly possible to talk with a cigarette hanging from one’s mouth. It is even possible to talk with food in one’s mouth. A careful transcription of such speech shows that there have been a number of substitutions made. The substitutions are processes we are talking about that they are ‘culculated’ in real time we speak, completely unself-consciously”, Nathan (2008:74)

According to Nathan (2008:77), assimilation involves a sound becoming more like its neighboring sound. Some phoneticians refer to this process as *coarticulation* (see, for instance, *dogs* [dogz], *plays* [playz]), which emphasizes the idea that sound gestures are executed simultaneously, rather than sequentially. Assimilations can occur either in anticipation of a following sound or by maintaining some features into the next sound. When a sound anticipates some feature of the following sound, it is said to undergo an *anticipatory* or *regressive* assimilation because the feature is said to be moving backwards through the word or simply leftward. When a feature continues forward from the causing sound to the affected sound, it is said to be *preservatory* or *progressive* assimilation, or simply a rightward assimilation.

With regard to nasalization, Nathan (2008:78) claims that it is a frequently encountered case of assimilation. In many languages vowels and even liquids acquire nasal qualities in the environment of a nasal consonant. In English, for example, vowel, liquids and glides nasalize before any nasal.

- (1) 'borrowing' [bõrõwĩŋ]
 'film' [fĩlm]
 'iron' [ãĩən] (Nathan 2008:79)

According to Boivin (1996:21), very few languages lack the nasalization process. Referring to Maddieson (1984), he further adds that the Semitic languages are said not to possess nasalized vowels, nor do nasal consonants affect the pronunciation of surrounding vowels. However, some of the Western Gurage languages, which also belong to the Semitic language phylum, are counterexample to this generalization.

Nathan (2008:80) considers deletion to be a process in which one segment is deleted completely. Deletion at the beginning of a word, which is called *aphasis* or *apheresis*, is quite rare. In contrast, the deletion of word-medial vowels, i.e., *syncope*, is a very frequent deletion process, as shown in the English example (2).

- (2) 'family' [fæmli]
 'communication' [kmuŋkeiʃən] (Nathan 2008:80)

Nathan (2008:81) claims that segments cannot only be deleted but also inserted. There are probably two universal reasons for insertion: preventing clusters of consonants that violate syllable structure constraints, as in the English example (3a), and easing transitions between segments, as in (3b).

- (3) a. 'arthritis' [æθəraɪs]
 b. 'athlete' [æθəlit] (Nathan 2008:81)

2.2 Linguistic Works on Inor

Many scholars have written on Gurage languages as a whole. Some of the works are descriptive, comparative and some are treating Gurage groups in general. However, only a very few works deal specifically with the Inor language. Most works containing linguistic information on Inor are reviewed below.

There are two BA essays on the descriptive study of Inor. The first one is the work of Bahru (1982). He discussed different points on noun and verb morphology while Belay (2001) treated several aspects of the verbal morphology of Inor.

Leslau has written different articles on Inor in different periods. Leslau (1959) deals with historical sound changes regarding pharyngeal and laryngeal sounds and their synchronic traces in Inor while Leslau (1996a, 1997b) provides sketchy information on selected topics of the Inor grammar. Leslau (1979) contains a wordlist with more than one thousand items in Inor; Leslau (1996b) is devoted to one part of oral literature in Inor. Hetzron (1970, 1977, 1994), too, discusses selected topics of Inor phonology and morphology mainly from a comparative point of view. Linguistic variation within Inor is discussed in Prunet (1991) where he discusses the position of Mägär in relation to Inor.

With regard to the phonology of Inor, the work of Berhanu/Hetzron (2000) contains the most detailed information. According to them, the phonemic system of Inor consists of 18 consonants (the labials /b f m w/, the alveo-palatals /t d t' s z n r (l) j/, the velars /k g k' x/ and the glottal /ʔ/), 8 single vowels (the front vowels /i e æ/, the central vowels /ɨ ə/ and the back vowels /u o a/) and their doubled counterparts, and two diphthongs (/o̠a̠ u̠a̠/) (cf. Berhanu/Hetzron 2000: 13, 15). Labialized and palatalized consonants are not treated as phonemes as they are often triggered by a floating autosegment in a grammatical morpheme, like the impersonal suffix. In addition to the usual Ethio-Semitic consonants, which form the triad voiced, voiceless, glottalized, Inor has a set of nasalized consonants (Berhanu/Hetzron 2000: 9).

Prunet (1991: 5), shows that the central vowel in Inor is obligatorily rounded when it immediately follows a labialized consonant, i.e. /k^wə/, for instance, is uttered as [ko] or in an optional diphthongized variant [k^wo]. As to Prunet (1991), the labialized consonants comprise the set of non-coronal consonants, i.e. labials and velars and glottals. Hetzron (1977: 45-47) considers the labialization in the tt-group of Gurage

languages to be morphologically conditioned by a labial feature *w* on the relatively last non-coronal consonant of the verbal word. Labialization originates from the absorption of a suffix **u*:

In Inor, coronals are very prominent to palatalization. Hetzron(1977: 47) also observed that velars can be palatalized.

As to Boivin (1996), nasalization is a regular phonological process in Inor. Nasal vowels can even be found where no apparent nasalization process is involved. Some of these vowels seem to be the result of a diachronic ‘spontaneous nasalization’ triggered by the presence of a guttural consonant. Boivin (1996:2) identified two nasal consonants in Inor: /m/ and /n/. However, these segments do not trigger nasalization. In order to be able to propagate nasality, /m/ and /n/ have to undergo spirantization to [m̥] and [n̥]. Only then, these nasals can affect other segments.

(4)	Perfective	Imperfective	
	<i>mat'ar-ə</i>	<i>*jimat'ir > *jinjat'ir ></i>	[jĩm̥ǣ ⁿ t'ir] ‘be clear, look nice’
	<i>nəʔar-ə</i>	<i>*jinəʔir > *jĩr̥əʔir ></i>	[jĩr̥ǣʔir] ‘up root’

(Boivin 1996:3)

Nasality spreads to the left and the right until it reaches an obstruent except the glottal stop *ʔ* which is transparent to nasalization. When the nasal chain ends with an obstruent an intrusive homorganic nasal is heard. As to Boivin (1996), when /m/ or /n/ occur as first root consonant of a verb, as in example (4), the spirantized version surfaces if the nasal is preceded by one of the following prefixes: *ji-* (imperfective), *tə-* (reciprocal), *ora-* (causative). In the latter case, the spirant nasals never alternate with /m/ and /n/.

Hetzron (1969) argues that some cases of non-etymological *n* in East Gurage languages occur due to the reduction or loss of laryngeal segments. He concludes that the

nasalization effect of a laryngeal segments is usually referred to as spontaneous nasalization. Hetzron (1972: 62-63) deals with nasalization in Inor stating,

“as we can see nasality is a long component in [Inor]. Whenever, a nasalized morpheme emerges, it nasalizes all the contiguous, nasalizable phonemes around it, all these communicate it further. The nasalizable phonemes are all the vowels, $w \rightarrow \tilde{w}$, $b \rightarrow \tilde{m}$, $r \rightarrow \tilde{r}$. The nasal consonants m , m^w and n do not nasalize themselves.”

Thus, nasality created elsewhere does not affect the nasals, as in the word *nəmədā* ‘he loved’, which appears as *ṁṁmədā*, ‘the one who loved’ when preceded by the relative clause verb marker *ə-*. Hetzron (1972:63) concludes that long nasality, i.e., the spread of nasality across several elements of a word seems to have been preserved in its complete form in Inor only.

Berhanu (1996: 54) claims that Inor differs from the usual Semitic languages in that gemination in the conjugational system of verbs has been replaced by alternations of voiced consonant or *r* (for single tone) vs. unvoiced consonant or *n* (for gemination). Perfective stems in Inor, such as *səpər-* ‘break’ or *tənəf-* ‘saved’, are cognate with Amharic *səbbər-* and *tərrəf-* where the voiceless obstruent *p* or nasal *n* in penultimate position occur as geminated voiced consonant or *rr* in the Amharic cognates.

3 Description of Inor Phonology

3.1 Consonants

3.1.1 Consonant Phonemes

According to Berhanu/Hetzron's (2000:13) analysis, the phoneme inventory of Inor consists of 18 consonants.

However, there is no reason that the labials (*p*, *b^w*, *m^w*, and *f^w*), alveo-palatals (*ʃ*, *ʒ*, *tʃ*, *tʃ'*, and *ʧ*), palatals (*c*, *c'*, *j*, *ç*, and *ɲ*), and velars (*k^w*, *k^ʷ*, and *g^w*) are non-phonemic consonants as far as they are unpredictable in their occurrences. Thus, the total number of Inor consonants is 35.

Table 1: Consonant Phoneme Inventory

	LABIALS	LABIO-DENTAL	ALVEOLAR	ALVEO-PALATAL	PALATAL	VELAR	GLOTTAL
STOPS							
• VOICELESS	p		t		c	k k ^w	ʔ
• EJECTIVE			t'		c'	k' k' ^w	
• VOICED	b b ^w		d		j	g g ^w	
FRICATIVES							
• VOICELESS		f f ^w	s	ʃ	ç	x	
• VOICED			z	ʒ			
AFFRICATES							
• VOICELESS				tʃ			
• EJECTIVE				tʃ'			
• VOICED				ʧ			
SONORANTS							
• NASAL	m m ^w		n		ɲ		
• LIQUID			r (l)				
• APPROXIMANT	w				j		

The liquid *l* is given in brackets because it is a very rare sound in Inor. It was recorded in [k'ulət] 'fountain', [t'iləs] 'a circular cut leaf', [elʔa] 'want, wish' and [luga] 'yoghurt'. However, it also occurs in Amharic loanwords, as in [ləga] 'fresh', [leba] 'thief', or [ləslasa] 'soft'.

I discuss their distribution in words. All consonants of Inor can occur word-medially. However, there are some exceptional phonemes like /ɲ/, /p/ and /r/ that they never occur word-initially.¹ The lateral /l/ and the approximant /w/ do not occur word-finally. In fact, /l/ is a very rare occurring sound (cf. 3.1.1 for examples).

List 1: Distribution of Consonants Word-initially, -medially and ²-finally

	<u>INITIALLY</u>		<u>MEDIALLY</u>		<u>FINALLY</u>	
/p/			[epə:] [epə]	'do' 'a kind of local blanket'	[ʒəp]	'lion'
/b/	[bəsər]	'meat'	[t'əbət'ə]	'hold'	[womb]	'a hot place'
/b ^w /	[b ^w inar]	'dove'	[amb ^w ə]	'bone- marrow'		
/f/	[fəɲəʔ]	'goat'	[ʔafər]	'earth'	[səf]	'a kind of plate'
/f ^w /	[f ^w inig]	'burden'	[dʒəf ^w ərə]	'out of backyard'	[amf ^w]	'mouth'

¹ In the Inor variety spoken at the border to Gyeto, the nasal /ɲ/ occurs word-initially in [ɲəʔə] 'he slept' due to Gyeto influence.

² The empty space in the distribution of consonants indicates that there is no word with this particular sound in that place.

	<u>INITIALLY</u>		<u>MEDIALLY</u>		<u>FINALLY</u>	
/m/	[mɪs]	'man, husband'	[mama]	'part of flower'	[gaʔaxim]	'time before now'
/m ^w /	[m ^w əsa]	'calf'	[am ^w at]	'gods'		
/w/	[wisa]	'bread from false banana'	[gawa]	'foolish'		
/t/	[tən]	'smoke'			[ʔat]	'one'
/d/	[dəm]	'blood'	[xida]	'she'	[gudid]	'hole'
/t'/	[t'aj]	'sheep'	[met'tərə]	'selected'	[mut'it']	'bad'
/s/	[səβ]	'man'			[kəs]	'belly'
/z/	[zərma]	'adult'	[ciza]	'a kind of tree used for local drug'	[fərəz]	'horse'
/n/	[nəgə]	'tomorrow'	[g ^w ənda]	'ant'	[tən]	'smoke'
/r/	---		[ʃərəd]	'food'	[bəsər]	'meat'
/l/	[luga]	'yoghurt'	[k'ulət]	'fountain'		
/ʃ/	[ʃəta]	'knife'	[iʃta]	'women'	[jəʃ]	'come (2Sg.fem.)!'
/ʒ/	[zəp]	'lion'	[boʒə]	'local god'	[əʒ]	'see (Sg.m.)!'
/tʃ/	[tʃawadʒ]	'farmer'	[k ^w intʃif]	'beard'	[kiftʃ]	'open (Sg.fem.)!'
/dʒ/	[dʒəf ^w ərə]	'outside backyard'	[x ^w idʒir]	'clothes'	[ədʒ]	'hand'
/tʃ'/	[tʃ'awəda]	'play'	[k'ontʃ'ə]	'frog'	[f ^w atʃ']	'cut grass (Sg.m.)!'
/c/	[cɪrcir]	'armpit'	[mucir]	'ceremonial fire'	[bəc]	'cry (Sg.m.)!'

	<u>INITIALLY</u>		<u>MEDIALLY</u>		<u>FINALLY</u>	
/j/	[jimʔə]	‘local pillow’	[denja]	‘children’	[zənj]	‘speak (Sg.m.)!’
/c’/	[c’in]	‘buttock’	[imbac’ə]	‘saliva’	[mərɕ’]	‘remove leaves (Sg.m.)!’
/ç/	[çin]	‘heart’	[wəçə]	‘thigh’	[biç]	‘cry(Sg.m.)!’
/ɲ/			[gəɲə]	‘country, birthplace’	[eɲ]	‘give (2Sg.fem.) me!’
/j/	[jiʃir]	‘feel happy’	[dijə]	‘rain’	[wa:j]	‘here’
/k/	[kəs]	‘belly’	[nəkəsə]	‘bite’	[dək]	‘calf’
/kʷ/	[kʷaʃtijə]	‘roasted cabbage’	[əkʷa]	‘today’	[ankʷ]	‘give (Sg.m.) him!’
/g/	[goga]	‘skin’	[aga]	‘turn, part’	[mug]	‘bend down (Sg.m.)!’
/gʷ/	[gʷa:d]	‘white’	[ʃəgʷərə]	‘magician’	[tʃəgʷ]	‘celebration during the engagement’
/k’/	[k’ən]	‘horn’	[tʃ’ik’ara]	‘mud’	[ank’]	‘justice’
/kʷ’/	[kʷ’aʃə]	‘local hard fence’	[məkʷ’ə]	‘secret’		
/x/	[xada]	‘that’	[ixa]	‘water’	[sox]	‘thorn’
/ʔ/	[ʔat]	‘one’	[jinʔaʃə]	‘mushroom’	[nuʔ]	‘bigger’

From a comparative point of view, the glottal stop might originate from a debuccalized ejective consonant *t*, *k* or *tʃ*, as in [ʔãʔiβ] ‘bone’ (cognate with Amharic [at’int]), mū:ʔ ‘hot’ (cognate with Amharic [muk’]) or [ʔeʔə] ‘wood, tree’ (cognate with Amharic [intʃ’ət]).

3.1.2 Allophones

Few allophonic variations are found in Inor. Allophones are predictable phonetic variants of phoneme and occur in complementary distribution. The change that is brought by the allophones is not of meaning, but only of form.

The palatal nasal /ɲ/ has the allophones [ɲ] and [j] in verb conjugation.

(5)	Perfective	Imperfective	
	a. [ʔaf ^w əɲə]	[ja:f ^w əj]	'take rest'
	b- [təɲə]	[jitəj]	'swear'

According to Berhanu/Hetzron (2000:37), [j] satisfies the final C-slot. "By an independent process of palatalization, it is subsequently spread on to the preceding consonants, forming [ɲ] and leaving the second [ə]".

The alveolar nasal /n/ has the allophones [n], [r] and [j] in the following verb conjugation.

(6)	Perfective	2sg.m Jussive	2sg.fem Jussive	
	[bənʔa]	[birʔa]	[bijʔə]	'eat'

There is no nasalization because n is a penultimate consonant of the root word. *r*, which is the simplex form of [r], palatalizes to [i] which yields [j] that [n] was originally a geminate.

In addition, the alveolar nasal /n/ when occurring as root initial consonant has the allophone [ɲ̃] when preceded by prefixes. The allophone ɲ̃ is pronounced as trill [r] but in addition to the plain trill it triggers nasalization of the surrounding consonants, as shown in example (7) (see also the discussion in 2.2).

(7)	Perfective	Imperfective	
	[nəkəsə]	[jĩřǎks]	‘bite’

Note, however, that the plain trill *r* and the nasalizing trill *ř* are representations of two distinct phonemes; their occurrence is not predictable. The two phonemes can only be distinguished by the additional nasalization which occurs with the nasalizing but not with the plain trill.

(8)	Nasalizing Trill <i>ř</i>	Plain Trill <i>r</i>		
	[ě:ř]	‘eye’	[ʃərəd]	‘food’
	[dǎřǎř]	‘kitchen’	[gərəd]	‘girl’
			[bɪrəd]	‘metal’

3.2 Vowels

Inor has eight cardinal vowels, but only seven long vowels (double vowels according to the terminology of Berhanu/Hetzron (2000:13)), and two falling diphthongs. The vowel *ε* does not have a long counterpart. The cardinal vowels are given in the following table.

Table 2: Cardinal Vowels

	FRONT	CENTRAL	BACK
HIGH	<i>i/i:</i>	<i>ɨ/ɨ:</i>	<i>u/u:</i>
MID	<i>e/e:</i>	<i>ə</i>	<i>o/o:</i>
LOW	<i>ε</i>		<i>a/a:³</i>

Berhanu/Hetzron (2000:13) are of the opinion that “the vowel [ɨ] is epenthetic, not phonemic (or very rarely occurring so as in *səpərətʃi* ‘she broke’)”. In my findings, the vowel *ɨ* is often used as epenthetic vowel. However, it is not as rare as stated by Berhanu/Hetzron (2000). The vowel *ɨ* occurs in a number of words listed in appendix in which its occurrence cannot be predicted, as in *ixa* ‘water’, *inni* ‘all’ or *mut’it* ‘bad’.

³ Where the symbols appear in pairs, the one to the right represents a long vowel.

Furthermore, the vowel *i* also has a long counterpart *iː*. Therefore, I consider it to be a phoneme in Inor.

In Inor vowels, there is no long counterpart for the vowel *ɛ*. According to Berhanu/Hetzron's work this vowel is /æ/ which often alternates with *ay* in Inor; however, as far as my finding is concerned, the vowel *ɛ* often alternates with *ey* in the language.

According to my data, a word in Inor can end in any vowel, except long vowels and the vowel *ɛ*.

List 2: Word-Final Vowels

/i/	[kəsi]	'inside'
/e/	[fore]	'upside'
/iː/	[wərətʃiː]	'she went'
/a/	[gawa]	'fool'
/ə/	[wərə]	'he went'
/o/	[k'oto]	'hill'
/u/	[maʔaxu]	'I came'
/ua/	[ʔaxua]	'you (Pl.m.)'
/oa/	[xunoa]	'they (Pl.m.)'

3.2.1 Short Vowels

The high front vowel /i/ and the mid front vowel /e/ occur at word-initial, -medial and -final positions, as in [ina] 'we', [ziza] 'cold', and [əti] 'where' or [epə] 'he did', [mena] 'work' and [fore] 'up'. The low front vowel /ɛ/ is very rare. The only example I found is [aβɛnərə] 'he yawned'.

The high central unrounded vowel /i/ is sometimes used as epenthetic vowel. This vowel occurs in every position in a word, as in [iʃta] 'women', [mis] 'man, husband' and [wərətʃi] 'she went'. The mid central vowel /ə/, too, occurs in every position in a word,

i.e. word-initial [ətʃ] ‘boy/son’, word-medial [kəs] ‘belly’ and word-final [wərə] ‘she went’.

The mid back rounded vowel /o/ occurs at word-medial and -final position, as in [gɔɔʒə] ‘root of false banana’ or [boto] ‘pond’. Word-initially, it is always preceded by the, prosthetic consonant, the glottal stop /ʔ/. The high back rounded vowel /u/ most frequently occurs at word-medial, as in the words [muʔ] ‘hot’, [nuʔ] ‘big’, and [duʔa] ‘prayer’, but only rarely at word-final position, as in [fəpəxu] ‘ I fear’. Word-initial /u/ was not recorded.

The low back vowel /a/ occurs at word-initial, -medial and final-position, as in [aʃə] ‘he saw’, [wada] ‘this’, and [sera] ‘regulations’.

3.2.2 Long Vowels

Inor has seven long vowels, namely: ə: ([ʔə:siβir] ‘he may break’), a: ([ʔa:st’e] ‘he may water’), i: ([ʔi:na] ‘ours’), u: ([k’u:ra] ‘not full’), o: ([gɔ̄:ntʃə] ‘hyena’), e: ([ʔe:pə] ‘the one who did’), and i: ([iʃta] ‘women’). These vowels can also result from the assimilation of two short vowels.

In Inor, vocalic length is phonemic. It is not easy to find minimal pairs but it is possible to find some to justify this contrast. The contrast can be clearly seen in the 2Sg.m. vs. the 3Sg.m. of jussive verbs starting with a vowel.

(9)	2Sg.m. Jussive		3Sg.m. Jussive
	a. [ʔəsis]	‘sweep!’	[ʔə:sis] ‘he may sweep’
	b. [ʔəʔiβ]	‘wash!’	[ʔə:ʔiβ] ‘he may wash’
	c. [ʔast’e]	‘water!’	[ʔa:st’e] ‘he may water’

3.2.3 Diphthongs

Beside the common raising diphthongs consisting of a vowel followed by the approximant *j*, as in [gojta] ‘God’ or [mazaj] ‘fat’, Inor possesses two falling diphthongs

in absolute final position: *-oa* (e.g. [xunoa] ‘they (Pl.M)’) and *-ua* (e.g. [axua] ‘you (Pl.M)’). Berhanu/Hetzron (2000:15) is of the opinion that “These vowels behave like sequence of two vowels for the stress rules”. However, in contrast to vowels, the falling diphthongs cannot be nasalized (see 5.1.5) and may even trigger palatalization (5.1.2.1). Therefore, the falling diphthongs are considered to be phonemes on their own and not only combinations of two vowels.

4 Phonotactics and Syllable Structure

4.1 Phonotactics

Inor allows two consecutive consonants in sequence. These clusters occur at the syllable boundary in word-medial position and two term consonant clusters in word-final position. Sequences of two consonants are rare in word-initial position. When two or more impermeable consonants occur in sequence across morpheme boundaries, the high central vowel [i], or less frequently the mid central vowel [ə], is inserted to resolve the cluster as in /*jsəβir/ > [jisəβir] ‘he breaks’ and /jʔətir/ > [jəʔətir] ‘he kills’.

The maximum number of consecutive consonant in a cluster is two, with the exception of the word [ʔarβʔət] ‘four’ which contains three consonants in sequence. Thus, consonant sequences or clusters in Inor must conform to the following word constraints:

- 1) There are no medial consonant sequences (except the word /ʔarβʔət/ ‘four’) or final consonant sequences with more than two consonants;
- 2) There are no consonant cluster with the phonemes /w, j, p, ɲ/ as first or second member;
- 3) Nasals which occur as first member in a cluster are never followed by approximants or liquids.

4.1.1 Word-Initial Consonant Sequences

Inor allows consonant clusters word-initially, as shown in List 3.

List 3: Word-Initial Consonant Sequences

/br-/	[braprad]	'food from false banana'
/fr-/	[frənta]	'spray'
/tr-/	[traɲa]	'yesterday'
/k'r-/	[k'rəmpa]	'break suddenly'

All word-initial cluster have the trill /r/ as second consonant.

4.1.2 Word-Medial Consonant Sequences

The first member of consonant sequences that are found word-medially are the nasals /n/ and /m/, the trill /r/, the stops /b/ and /k/, or the fricative /ʃ/. The second member of these consonants cluster is usually an obstruent.

List 4: Word-Medial Consonant Sequences

(a) NASAL + STOPS /b t d t' g k'/

/mb/	[gəmbəna]	'black'
/nt/	[ʔintəʔəm]	'don't be defeated'
/nd/	[sənda]	'knife'
/nt'/	[ant'ə]	'cut, slaughter'
/ng/	[angəd]	'neck'
/nk'/	[ʔank'a]	'mouth'

(b) NASAL + FRICATIVES /s ʒ/ OR AFFRICATES /tʃ tʃ'/

/ns/	[insijə]	'small'
/nz/	[anzəd]	'guts'
/ntʃ/	[gontʃə]	'hyena'
/ntʃ'/	[antʃ'ərərə]	'finished pouring'

(c) TRILL + STOPS /b t d k g k' ʔ/

/rb/	[zurba]	'a bundle of khat'
/rt/	[birtukan]	'orange'
/rd/	[gurda]	'promise'
/rk/	[mərkaɲa]	'beautiful'
/rg/	[mirgig]	'straight'
/rk'/	[mirk'ana]	'stimulation'
/rʔ/	[murʔa]	'full, holiday'

(d) TRILL + FRICATIVES /f s ʃ/ OR AFFRICATES /tʃ dʒ tʃ'/

/rf/	[arfate]	'days after death'
/rs/	[k'orsa]	'feather'
/rʃ/	[k'urʃo]	'remaining'
/rtʃ/	[ərtʃo]	'you(2sg.m)guy'
/rdʒ/	[bərdʒig]	'strong, hard'
/rtʃ'/	[birtʃ'a]	'highly prioritized'

(e) TRILL + NASAL /m/

/rm/	[zərma]	'youngsters, adults'
/rm/	[dərma]	'young mule'

(f) FRICATIVE /s/ + OBSTRUENTS /t k/ OR FRICATIVE /x/

/st/	[mistawəd]	'mirror'
/sk/	[biskad]	'littlies'
/sx/	[təsxar]	'death funeral'

(g) FRICATIVE /z/ + PLOSIVE /g/

/zg/	[əzga]	'let him close'
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(h) FRICATIVE /ʃ/ + PLOSIVE /t/

/ʃt/	[iʃta]	'ladies'
------	--------	----------

4.1.3 Word-Final Consonant Sequences

Except for the clusters /mb/ and /nʒ/, almost all the second members of final clusters are alveolars, as shown in List 5.

List 5: Word-Final Consonant Sequences

(a) NASAL + STOPS /b t/ OR FRICATIVE /ʒ/

/mb/	[zimb]	'fly'
/mt/	[t'irk'imt]	'second month of the year'
/nʒ/	[anʒ]	'young cow'

(b) TRILL + STOPS /t d/

/rd/	[gərd]	'beginning to sell'
/rt/	[xərt]	'liver'

(c) FRICATIVE /f s ʃ/ + STOP /t/

/ft/	[kift]	'open (2SG.m.)'
/st/	[soʔost]	'three'
/ʃt/	[miʃt]	'women'

4.1.4 Gemination

Germination in Inor is very rare. It occurs in lexical items such as [immat] 'one', [emmə] 'he defeated', [effə] 'he covered' or [inniʔar] 'everything'. It may also occur as result of an assimilation process with the causative prefix *at-* or the negative prefix *an-*, as in /at-ɕəpər/ → [aɕɕəpər] 'cause to finish' or /an-nəkəs-da/ → [annəkəsəda] 'he didn't bite'.

4.1.5 Clusters Consisting of Sonorant Plus Glottal Stop

The glottal stop /ʔ/ often immediately follows one of the consonants *β*, *m*, *ŋ*, *n*, *r*, *w*, or *j* which are partly interrelated in the formation of verb bases. For instance, the plosive *p*

as second root consonant in the perfective base has the weakened counterpart β in the imperfective base (see 5.1.7), which, in turn can be labialized to w (5.1.1).

List 6: Sonorant Plus Glottal Stop Clusters

	3SG.M. PERFECTIVE: /BASE-ə/	3SG.M. IMPERFECTIVE: /jɪ-BASE/	IMPERSONAL IMPERFECTIVE: /jɪ-BASE- ^{wj} -i/
a.	[gəpa] 'he entered'	[jigəβ'a] 'he enters'	[jigəw'e] 'one enters'
b.	[səm'a] 'he heard'	jisəm'a] 'he hears'	[jisəw'e] 'one hears'
	3SG.M. PERFECTIVE: /BASE-ə/	3SG.M. IMPERFECTIVE: /jɪ-BASE/	2SG.FEM. IMPERATIVE: /BASE-ʃ/
c.	[sən'a] 'he reached'	[jisər'a] 'he reaches'	[sɪj'ə] 'reach (fem)!'
d.	[bən'a] 'he ate'	[jɪβər'a] 'he eats'	[bij'ə] 'eat (fem)!'

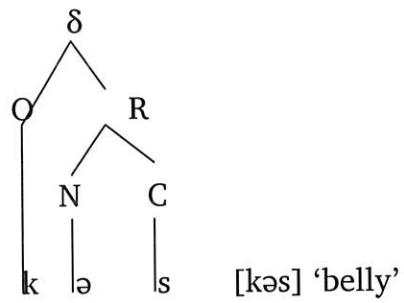
The glottal stop does not form clusters with plosives, as seen in List 6a, in which the p in the perfective base is related to the cluster $\betaʔ$ in the imperfective base.

A glottal cluster also occurs in the numerical number [xujʔa] 'twenty'.

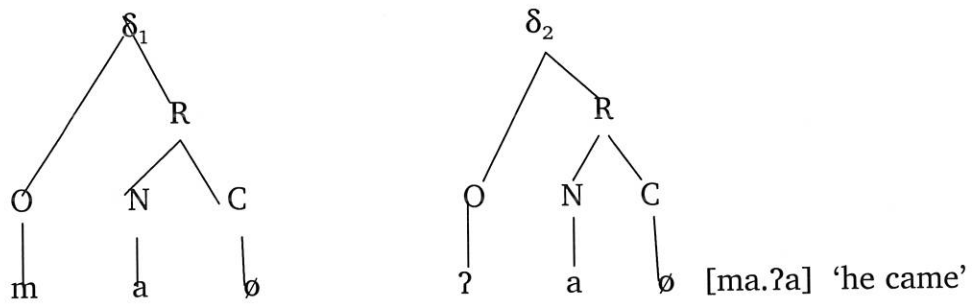
4.2 Syllable Structure of Inor

According to O'Grady (1987:74), "Syllables are considered units of phonological structure because they are relevant to stating generalizations about the distribution of allophonic features". Syllables in Inor can begin or end with a single consonant or with a sequence of two consonants. The nucleus of a syllable in Inor can be formed by short vowels, long vowels, or diphthongs. Inor has monosyllabic, disyllabic, and multisyllabic words. The following figures demonstrate the three types of Inor words.

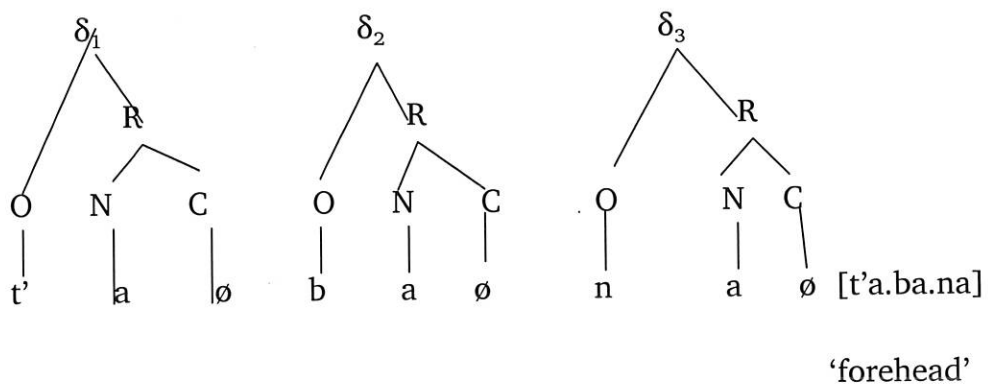
(10) Monosyllabic Word



(11) Disyllabic Word



(12) Multisyllabic Word



Syllable types with short nucleus

1. CV /bə.sər/ 'meat'
2. CVC /mis/ 'man, husband'
3. CCV /traɲə/ 'yesterday'
4. VC /ɪʃ.ta/ 'ladies'

Syllable types with long nucleus

1. CV: /wə:rə/ 'he went'
 /ma:ʔa/ 'he came'
2. CV:C /mi:r/ 'what?'
 /t'o:d/ 'dry grass'
3. CV:CC /su:nt/ 'eight'
4. V:C /a:t/ 'one'

The syllable in Inor consists of three parts: onset (O), nucleus (N), and the coda (C) whereby the onset and coda are optional elements. The obligatory syllable nucleus can be any of the vowels: short, long, or diphthong.

Note that the labialized consonants –^w the palatalized consonants –^j are considered as a single consonant or a C-slot (consonant slot), not as a cluster of consonants or a CC-slot. The diphthongs –*oa* and –*ua* exhibit a change in quality within single syllable. Inor diphthongs show changes in quality that are due to tongue movement away from /o/ to /a/ and from /u/ to /a/.

5 Inor Phonological Processes

5.1 Consonants

Most of the phonological processes affecting consonants occur due to the influence of adjacent consonants in the word.

5.1.1 Labialization

In Inor, all non-coronal consonants can be labialized in the following manner:

(13) PLAIN CONSONANT → LABIALIZED CONSONANT

LABIALS		
<i>p</i>	→	<i>p^w</i>
<i>b</i>	→	<i>b^w</i>
<i>β</i>	→	<i>w</i>
<i>m</i>	→	<i>m^w</i>
<i>f</i>	→	<i>f^w</i>
VELARS/GLOTTAL		
<i>k</i>	→	<i>k^w</i>
<i>g</i>	→	<i>g^w</i>
<i>k'</i>	→	<i>k^ʷ</i>
<i>x</i>	→	<i>x^w</i>
<i>ʔ</i>	→	<i>ʔ^w</i>

Labialization can be the result of a morphophonemic process but also occurs in underived lexical entities. Morphophonemic processes that trigger labialization are the formation of the impersonal, the formation of the third person plural with perfective verbs and the second and third person plural with imperfective verbs, and the formation of the verbal noun.

5.1.1.1 Labialization Due to Morphophonemic Processes

The following List 7 contains examples for the formation of the impersonal with perfective verbs but it can also be formed from imperfective and jussive verbs.

List 7: Labialization in Impersonal Perfective Verbs

	3SG.M. PERFECTIVE: /BASE-ə/		IMPERSONAL IMPERFECTIVE: /BASE- ^w j-i/	
a.	$b \rightarrow b^w$	[bəsərə] 'it cooked'	[b ^w əsəri]	'one cooked'
b.	$p \rightarrow p^w$	[səpərə] 'he broke'	[səp ^w əri]	'one broke'
c.	$\beta \rightarrow w$	[kiβənərə] 'it rolled down'	[kiwonəri]	'one rolled down'
d.	$f \rightarrow f^w$	[fəjə] 'he feared'	[f ^w əjəwi]	'one feared'
e.	$m \rightarrow m^w$	[maʔa] 'he came'	[m ^w əʔəji]	'one came'
f.	$g \rightarrow g^w$	[zəga] 'he closed'	[zəg ^w əji]	'one closed'
		[dənəgə] 'he hit'	[dənəg ^w i]	'one hit'
g.	$k \rightarrow k^w$	[kəsərə] 'he suffered a loss'	[k ^w əsəri]	'one suffered a loss'
h.	$k' \rightarrow k'^w$	[k'ak'a] 'he tied up'	[k' ^w ak'əji]	'one tied up'
i.	$x \rightarrow x^w$	[xarə] 'he knew'	[x ^w ari]	'one knew'
j.	$\text{ʔ} \rightarrow \text{ʔ}^w$	[ʔaʔərə] 'he fenced'	[ʔaʔ ^w əri]	'one fenced'

The data in List 7 show that labialization is triggered by the floating feature -^w as part of the marker for the impersonal. The final vowel -i is the 3Sg.m. object suffix. Impersonal verbs in main clauses are obligatorily marked by object suffixes, the default form is the 3Sg.m., but also object suffixes referring to other persons can occur. The same process of labialization in the formation of the impersonal is also found with imperfective verbs, which are illustrated in List 8.⁴

⁴ Hetzron (1972:46) defines the formation of the impersonal as follows: “[S]ynchronically the Impersonal is formed out of a Sg.3m form (without the final -ə) for the past through the imposition of Internal Labialization.”

List 8: Labialization in Impersonal Imperfective Verbs

	3SG.M. IMPERFECTIVE: /ji-BASE/		IMPERSONAL IMPERFECTIVE: /ji-BASE- ^w i /		
a.	$\beta \rightarrow w$	[jifãĩĩβ]	‘he breaks’	[jifãĩĩwi]	‘one breaks’
b.	$f \rightarrow f^w$	[jitʃəfir]	‘he tasted’	[jitʃəf ^w iri]	‘one tasted’
c.	$k \rightarrow k^w$	[jizrənk]	‘he speaks’	[jizrənk ^w i]	‘one speaks’
d.	$g \rightarrow g^w$	[jiβrəkig]	‘he will be startled’	[jiβrəkig ^w i]	‘one will be startled’
e.	$k' \rightarrow k'^w$	[jiβrək'it']	‘he bolts’	[jiβrək' ^w itʃi]	‘one bolts’
f.	$x \rightarrow x^w$	[jiβətix]	‘he uproots’	[jiβətix ^w i]	‘one uproots’

The floating feature -^w targets non-coronal consonants, i.e. labials, velars and glottals, from the right to the left. That means, if the last consonant of a verb is labializable the floating feature will dock on it (see List 7f, List 8a, List 8c, List 8d, etc.), if not it will proceed to the second to the last consonant (see List 7b, List 7j, List 8b, List 8e) or to the consonant preceding it (see List 7a, List 7c, etc.) unless it can attach to a labializable consonant. If there is no labializable consonant in a verb, labialization is not overtly realized, as, for instance, in the verbs *jisətʃ* ‘he drinks’ or *jiβətir* ‘it withers’ that occur as *jisətʃi* ‘one drank’ or *jiβətiri* ‘one withers’ in the impersonal. In case, the verb contains a reduplicated consonant, as in List 7h, the labial feature is realized on both consonants.

The formation of the verbal noun, too, involves labialization. Verbal nouns are derived from the jussive base of verbs to which the prefix ə- and the suffix -^wt are attached, as shown in List 9.

List 9: Formation of Verbal Nouns

	JUSSIVE BASE	VERBAL NOUN	
a.	/dĩrg/	[ədĩrg ^w it]	‘to hit’
b.	/siβir/	[əsivirt]	‘to break’
c.	/ək'ir/	[ək' ^w irt]	‘to chew’

The suffix -^wt contains the trigger for labialization, which affects the rightmost labializable consonant in the base.

The labial feature $-w$ is also inherent in the suffix- w marking 3rd person masculine plural subjects with perfective verbs. Note that the palatal feature of this suffix triggers palatalization of verb-final coronals (see 5.1.2).

List 10: Labialization in the 3Pl.m. of Perfective Verbs

3SG.M. PERFECTIVE: /BASE-ə/		3PL.M. PERFECTIVE: /BASE- w m/		
BASE ENDS IN A CONSONANT				
a.	[barə]	‘he said’	[b w arum]	‘they said’
b.	[səpərə]	‘he broke’	[səp w ərum]	‘they broke’
c.	[k’əfəfə]	‘he cut the edges’	[k w əfofum]	‘they cut the edges’
d.	[səkərə]	‘he drank’	[sək w ərum]	‘they drank’
e.	[dʒəpərə]	‘he finished’	[dʒoporum]	‘they finished’
f.	[kiβənərə]	‘he rolled down’	[kuwonorum]	‘they rolled down’
BASE ENDS IN A VOWEL				
g.	[gəpa]	‘he entered’	[g w əpəm]	‘they entered’
h.	[ʔənʔa]	‘he went up’	[ʔ w ənʔəm]	‘they went up’
i.	[xəna]	‘he called’	[x w ənom]	‘they called’
j.	[fatʃ’ə]	‘he cut grass’	[f w atʃ’om]	‘they cut grass’

Labialization is also part of the masculine plural suffix $-^w$ oa, which occurs with second and third person subjects of imperfective verbs.

List 11: Labialization in the 3Pl.m. of Imperfective Verbs

3SG.M. IMPERFECTIVE: /ji-BASE/		3PL.M. IMPERFECTIVE: /ji-BASE- w oa/		
a.	[jitʃəna]	‘he sits’	[jitʃonoa]	‘they sit’
b.	[jiwaʔa]	‘he goes out’	[jiwoʔoa]	‘they go out’
c.	[jifrənta]	‘he sprays’	[jifrəntʃ-oa]	‘they spray’
d.	[jigəda]	‘he fetches’	[jigodʒoa]	‘they fetch’
e.	[jimʔaʔa]	‘he comes’	[jiwoʔoa]	‘they come’

Note that beside consonants; also the central vowels are frequently affected by the labial feature.

5.1.1.2 Labialized Consonants Lexical Items

Labialized consonants occur also in word-initial and -medial positions in underived lexical entities, i.e., nominals and adverbs.

List 12: Labialized Consonants in Underived Lexical Entities

<i>p</i> ^w	[sap ^w ə]	‘days after someone’s death’
<i>b</i> ^w	[amb ^w ə]	‘bone marrow’
<i>m</i> ^w	[m ^w əsa]	‘calf’
<i>f</i> ^w	[f ^w əs]	‘fart’
<i>tʃ</i> ^w	[tʃ ^w əxərə]	‘stump’
<i>k</i> ^w	[ək ^w a]	‘today’
<i>k</i> ^ʷ	[mæk ^ʷ ə]	‘secret’
<i>g</i> ^w	[g ^w ənda]	‘ant’
<i>x</i> ^w	[x ^w idʒir]	‘cloth’
<i>ʔ</i> ^w	[siʔ ^w ijə]	‘bleeding at nose’

As labialization in these entities cannot be predicted or explained by morphophonological rules, the labialized consonants must serve as phonemes in Inor.

5.1.2 Palatalization

In Inor, all coronal consonants and the velars can be palatalized in the following manner:

(14) PLAIN CONSONANT → PALATALIZED CONSONANT

CORONALS		
<i>t</i>	→	<i>tʃ</i>
<i>d</i>	→	<i>dʒ</i>
<i>t'</i>	→	<i>tʃ'</i>
<i>s</i>	→	<i>ʃ</i>
<i>z</i>	→	<i>ʒ</i>
<i>r/n</i>	→	<i>j</i>
<i>n</i>	→	<i>ɲ</i>
VELARS		
<i>k</i>	→	<i>c</i>
<i>g</i>	→	<i>ɟ</i>
<i>k'</i>	→	<i>c'</i>
<i>x</i>	→	<i>ç</i>

The nasal *n* can either be palatalized to *j* or, rarely, also to *ɲ*. The exact reason for either occurrence is unclear.

5.1.2.1 Palatalization due to Morphophonological Processes

Two morphemes trigger palatalization in Inor, namely the female gender marker ^j occurring as part of the 2Sg.fem. subject pronouns attached to jussive/imperative verbs.

List 13: Palatalization of Coronals in Imperative Verbs with 2Sg.fem. Subjects

		2SG.M IMPERATIVE: /BASE/		2SG.FEM IMPERATIVE: /BASE ^j /
a.	<i>t</i> → <i>tʃ</i>	[wɪst] ‘take (m)!’		[wɪstʃ] ‘take (f)!’
b.	<i>t'</i> → <i>tʃ'</i>	[t'it'] ‘hold (m)!’		[t'itʃ'] ‘hold (f)!’
c.	<i>r</i> → <i>j</i>	[siβir] ‘break (m)!’		[siβij] ‘break (f)!’
d.		[məzɪr] ‘count (m)!’		[məzij] ‘count (f)!’

	2SG.M IMPERATIVE: /BASE/		2SG.FEM IMPERATIVE: /BASE ^{-j} /	
e.	[gidir]	'lay down (m)!'	[gidij]	'lay down (f)!'
f.	<i>s</i> → <i>f</i> [nisa]	'pick up (m)!'	[ni ^j e]	'pick up (f)!'
g.	<i>n</i> → <i>n̄</i> [ʔənʔa]	'do (m)!'	[ʔən ^j e]	'do (f)!'
h.	<i>d</i> → <i>ɟ</i> [gida]	'fetch (m)!'	[gid ^j e]	'fetch (f)!'

Commonly, palatalization applies only to base final coronals, as in List 13a or List 13b, but does not affect coronals within a base, with the exception of bases ending in a vowel. In this case, the vowel itself is raised (see 5.2.4) and the coronal consonant immediately preceding it is palatalized, as in the examples (f) until (h) in List 13.

The velars, in contrast, can also be palatalized in non-base final position if there is no other palatalizable coronal obstruent between them and the feminine suffix ^{-j}, as shown in List 14.

List 14: Palatalization of Velars in Imperative Verbs with 2Sg.fem. Subjects

	2SG.M IMPERATIVE: /BASE/		2SG.FEM IMPERATIVE: /BASE ^{-j} /	
a.	<i>g</i> → <i>j</i> [giβʔa]	'enter (m)!'	[jiβʔə]	'enter (f)!'
b.	<i>k'</i> → <i>c'</i> [k'ĩĩĩĩ]	'insult (m)!'	[c'ĩĩĩĩ]	'hold (f)!'

Note that the trill *r* does not block palatalization even it could be palatalized, as can be seen in List 14b.

Palatalization of base-final coronals in combination with labialization of velars is triggered by the 3Pl.m. subject suffix of perfective verbs.

List 15: Palatalization and Labialization in 3Pl.m. Perfective Verbs

	3SG.M. PERFECTIVE: /BASE-ə/		3PL.M. PERFECTIVE: /BASE- ^{wj} m/		
a.	t→tʃ	[gəta]	‘he fetched’	[gotʃom]	‘they fetched’
b.	d→dʒ	[akədə]	‘he tied’	[akoʒum]	‘they tied’
c.	t'→tʃ'	[bet'a]	‘he mixed’	[betʃ'om]	‘they mixed’
d.	z→ʒ	[gənəzə]	‘he became old’	[gonəʒum]	‘they became old’
e.	s→ʃ	[tãrãsa]	‘he stood up’	[tãrãʃom]	‘they stood up’

5.1.2.2 Palatalized Consonants in Lexical Items

A number of underived lexical entities contain palatalized consonants, as the entities in List 16, in which palatalized consonants occur at the word-initial position followed by the high vowel /i/.

List 16: Palatalized Consonants Preceding the Vowel /i/

/j/	[jimʔə]	‘local pillow’
/c'/	[c'in]	‘buttock’
/c/	[cirkir]	‘armpit’
/ç/	[çin]	‘heart’

However, palatalized consonants precede also non-front vowels and are not restricted to the word-initial position, as shown in List 17.

List 17: Palatalized Consonants Not Preceding the Vowel /i/

/ʃ/	[ʃəβəpə]	‘home’
/ʒ/	[zəp]	‘lion’
/tʃ/	[tʃawaɖ]	‘farmer’
/dʒ/	[dʒəbən]	‘coffeepot’
/j/	[ja:r]	‘going’
/tʃ'/	[tʃ'awəda]	‘play’

5.1.3 Depalatalization

The depalatalization process only affects palatalized coronal obstruents and the palatal nasal which change into their alveolar counterparts:

(15)	PALATALIZED		ALVEOLAR
	CONSONANT	→	CONSONANT
	<i>tʃ</i>	→	<i>t</i>
	<i>ɟ</i>	→	<i>d</i>
	<i>tʃʰ</i>	→	<i>tʰ</i>
	<i>ʃ</i>	→	<i>s</i>
	<i>ʒ</i>	→	<i>z</i>
	<i>ɲ</i>	→	<i>n</i>

Depalatalization is found in children's speech, in which palatal coronals occurring in lexical entities of the adults' lexicon are regularly substituted by their non-palatal counterparts in the children's lexicon.

List 18: Depalatalization in Children's Speech

<u>ADULTS' SPEECH</u>	<u>CHILDREN'S SPEECH</u>	
[ɟəbən]	[dəbən]	'coffeepot'
[tʃɛ̃rã]	[tɛ̃rã]	'sit'
[ʃərəd]	[sərəd]	'food'
[tʃ'awəda]	[t'awəda]	'play'
[zəpərə]	[zəpərə]	'return'
[aɲə]	[anə]	'hill'

This process is very frequently observable at the word-initial position.

5.1.4 Lenition

5.1.4.1 Lenition of Word-initial Consonants

Word-initial consonants of a word in Inor weaken when they are preceded by a prefix ending in a vowel. This process occurs very frequently with voiced labials and the nasal *n* yielding the following pairs of interrelated consonants.

(16)	STRONG		WEAK
	CONSONANT	→	CONSONANT
	<i>b</i>	→	<i>β</i>
	<i>b^w</i>	→	<i>w</i>
	<i>m</i>	→	<i>m̃</i>
	<i>m^w</i>	→	<i>w̃</i>
	<i>w</i>	→	<i>w̃</i>
	<i>n</i>	→	<i>ñ</i>

While the spirantization of the plosives [*b b^w*] results in the breathy continuants [*β w*], the lenition of the continuants [*m m^w w n*] yields continuants similar to them but with the additional ability to nasalize surrounding vowels (see 5.1.5).⁵

With regard to verbs, lenition occurs frequently when subject prefixes are attached to verbs in the imperfective aspect or in the jussive mood, when the relative clause verb marker *ə-* is attached to a verb in the perfective aspect, or when the prefix *tə-* as part of the passive derivation is attached to a simple verb.

⁵ The ability of continuants to nasalize surrounding vowels is indicated by the tilde on top of them.

List 19: Lenition Processes with Verbs

	a. $n \rightarrow \tilde{r}$	b. $m \rightarrow \tilde{m}$	c. $b \rightarrow \beta$
3SG.M. PERFECTIVE: /BASE-ə/	[nəkəsə] 'he bit'	[məcərə] 'he burned'	[bənʔa] 'he ate'
3SG.M. PERFECTIVE VERB IN RELATIVE CLAUSE: /ə-BASE-ə/	[ə̃r̃əkəsə] 'one who bit'	[ə̃m̃əcərə] 'one who burned'	[ə̃βənʔa] 'one who ate'
PASSIVE OF 3SG.M. PERFECTIVE: /tə-BASE-ə/	[tə̃r̃əkəsə] 'he was bitten'	[tə̃m̃əcərə] 'it was burned'	[tə̃βənʔa] 'it was eaten'
3SG.M. IMPERFECTIVE: /j̃i-BASE/	[j̃ir̃ək̃is] 'he bites'	[j̃im̃əc̃ir] 'he burns'	[j̃iβərʔa] 'he eats'

Lenition also occurs with nominals if a case marking prefix ending in a vowel, like the genitive prefix *ə-* or the instrumental prefix *bə-*, is attached to a nominal starting with one of the strong consonants mentioned in (16).

List 20: Lenition Processes with Nominals

	a. $b^w \rightarrow w$	b. $m \rightarrow \tilde{m}$	c. $m^w \rightarrow \tilde{w}$	d. $n \rightarrow \tilde{r}$
NOMINAL BASE	[b ^w əzə] 'Thunder God'	[mazaj] 'fat (of animals)'	[m ^w əsa] 'calf'	[niβ] 'bee'
GENITIVE: /ə-BASE/	[əwəzə] 'of the God'	[ə̃m̃āzaj] 'of the fat'	[ə̃w̃əsa] 'of the calf'	[ə̃r̃iβ] 'of the bee'
INSTRUMENTAL: /bə-BASE/	[bəwəzə] 'with the God'	[bə̃m̃āzay] 'with the fat'	[bə̃w̃əsa] 'with the calf'	[bə̃r̃iβ] 'with the bee'

5.1.4.2 Lenition of the Velar Plosive in Intervocalic Position

The plosive *k* occurring as second root consonant in a few tri-consonantal verbs is sometimes spirantized to *x*, as in the in the following example:

- (17) a. *səkər-ə*
 be_drunk.PV-3Sg.m.
 ‘he was drunk’
- b. *ji-səxir*
 3Sg.m-be_drunk.PV
 ‘he is drunk’

The plosive *k* occurs as second root consonant in the perfective verb in (17a) but as spirantized velar fricative *x* in (17b), i.e., the lenition process occurs in combination with a change from the perfective base to imperfective base.

5.1.5 Nasalization

Nasalization is a very prominent feature of Inor. Nasalization is triggered by the strong consonants *n*, *m* and *ŋ*⁶ or the weakened consonants *ñ*, *ř* and *ṽ* (see 5.1.4). Then these elements trigger nasalization of neighboring vowels and also of *w*→*ṽ*, *β*→*m*, and *r*→*ř*. The nasals *m* and *n* are not affected by the nasalization. Once a nasalizing element is created by lenition, nasality spreads as far as it can, progressively as well as regressively. It is only blocked by non-nasalizable plosives, i.e., coronal and velar plosives; the glottal stop does not block the spread of nasalization. At the end of the nasal chain, an imperfectly closed *n* is heard.

⁶ Note that Berhanu/Hetzron (2000: 16) only identified the two nasal consonants /*m*/ and /*n*/ as phonemes which can trigger nasalization. I also found that the nasal /*ŋ*/ should be considered a phoneme, which also serves as the trigger of nasalization.

- (18) a. *nəʔər-ə*
capture.Perf-3Sg.m.
'he captured'
- b. *ãĩãĩʔãĩĩ* (< **ãĩãĩʔãĩ* < **ənãĩʔãĩ*)
ə-nəʔər-ə
Rel-capture.Perf.-3Sg.m.
'one who captured'
- (19) a. *nəkəβ-ə*
find.Perf-3Sg.m.
'he found'
- b. *ãĩĩĩⁿkəβə* (< **ãĩĩĩkəβə* < **ənəkəβə*)
ə-nəkəb-ə
Rel-find.Perf.-3Sg.m.
'one who found'

Nasalization in examples (18) and (19) is triggered by weakening the verb-initial nasal *n* into *ĩ* (see 5.1.4). Then the weakened element *ĩ* in (18) disperses its nasal feature to all vowels in the verb because the trill *r* and the glottal stop *ʔ* cannot stop its spreading. In (19), however, the spread of nasalization is blocked by the velar plosive *k*.

Nasalization also occurs in basic lexical entries if they contain the nasals /m n ŋ/ or the nasalizing trill /ĩ/.

List 21: Nasalization in Basic Lexical Entries

- a. /inzĩr/ → [ĩnzĩr] 'ear'
 b. /muʔ/ → [mũʔ] 'hot'
 c. /dəŋ/ → [dẽŋ] 'blood'
 d. /e:ĩ/ → [ʔẽ:r] 'eye'
 e. /xaĩrã/ → [xãrã] 'bark of a tree'
 f. /dãĩrãĩ/ → [dõrãĩ] 'kitchen'

The occurrence of items with nasalized vowels as in List 21d, List 21e and List 21f, vis-à-vis lexemes, like *gərəd* ‘girl’, without nasalization are the reason to postulate two different trills, namely /r/ vs. /r̃/. Only the latter can trigger nasalization in a word.

5.1.6 Denasalization

The nasals *ɲ* and *n* as second root consonants may appear as [ɲ n] in the perfective base of a verb but as denasalized [j r] in the imperfective base of the same verb.

List 22: Denasalization of Second Root Consonants

		3SG.M. PERFECTIVE: /BASE-ə/		3SG.M. IMPERFECTIVE: /jɪ-BASE/	
a.	<i>ɲ</i> → <i>j</i>	[fəɲə]	‘he feared’	[jɪfəj]	‘he fears’
b.		[təɲə]	‘he swore’	[jɪtəj]	‘he swears’
c.		[ʔagəɲə]	‘be scarcer’	[ja:gəj]	‘he faces scarcity’ ⁷
d.	<i>n</i> → <i>r</i>	[bənʔa]	‘he ate’	[jɪβərʔa]	‘he eats’
e.		[sənʔa]	‘he reached’	[jɪsərʔa]	‘he reaches’

The denasalized consonant also occurs in the jussive/imperative base of these verbs, i.e., [birʔa] ‘eat (m)!’ from [bənʔa] ‘he ate’ or [sirʔa] ‘reach (m)!’ from [sənʔa] ‘he reached’. The trill *r* as result of the denasalization process can further be palatalized into *j*, when the subject of the verb is the second person singular feminine, i.e., [bijʔə] ‘eat (f)!’ or [sijʔə] ‘reach (f)!’ (see also 5.1.2.1).

However, some verbs do not denasalize *ɲ* in the imperfective or jussive/imperative base, as, for instance, [mʷəɲə] ‘he looked down’ (perfective base) which occurs as to [jɪwəɲ] ‘he looks down’ in the imperfective base.

⁷ Note that the verb *ʔagəɲə* is a derived verb, which starts with the causative prefix *ʔa-* prefix, i.e., the nasal *ɲ* is the second not the third root consonant.

5.1.7 Voicing

Voicing of consonants frequently occurs in verb conjugation, i.e., a voiceless second root consonant in the perfective base can change into its voiced counterpart in the imperfective base and in the jussive/imperative base.

List 23: Voicing of Consonants in Verb Conjugation

	3SG.M. PERFECTIVE: /BASE-ə/	3SG.M. IMPERFECTIVE: /jī-BASE/
a.	$p \rightarrow \beta$ [epə] 'he worked'	[je:β] 'he works'
b.	$t \rightarrow d$ [fətə] 'he untied'	[jifədə] 'he unties'
c.	$f \rightarrow \zeta$ [aʃə] 'he saw'	[ja:ʒ] 'he sees'
d.	$ʃ \rightarrow \zeta$ [gətʃa] 'he fetched'	[jigəʒa] 'he fetches'

5.1.8 Metathesis

Metathesis optionally occurs in Inor with intervocalic clusters of labials and alveolars, which are listed in (20).

(20)	UNDERLYING SEQUENCE	→	OPTIONAL SEQUENCE
	<i>br</i>	→	<i>rb</i>
	<i>rβ</i>	→	<i>βr</i>
	<i>ʃf</i>	→	<i>ft</i>
	<i>zm</i>	→	<i>mz</i>
	<i>ʃf</i>	→	<i>ff</i>

As a result of metathesis quite a lot of optional pairs of lexical entries occur. Some of them are given in List 24.

List 24: Metathesis

[kutfə] ~	[kuftə]	'chopped meat'
[ərβad] ~	[əβrad]	'dinner'
[kɪbrit] ~	[kirbit]	'matches'
[gəbre] ~	[gərbe]	'name of a person'

[gəzmu] ~ [gəmzu] 'name of a person'
[təsfu] ~ [təfsu] 'name of a person'

5.2 Vowel Changes

5.2.1 Total Vowel Assimilation

The mid-central vowel /ə/ totally assimilates to other vowels when they come in contact at morpheme junctures. If a perfective verb base, for instance, ends in a vowel, the 3Sg.m. subject marker -ə totally assimilates to this vowel.

List 25: Total Assimilation of the Mid-Central Vowel

3Sg.m. PERFECTIVE: /BASE-ə/

- | | | |
|--------------|------------|--------------|
| a. /wər-ə/ | → [wərə] | 'he went' |
| b. /wər-nə/ | → [wərnə] | 'we went' |
| c. /gəpa-ə/ | → [gəpa] | 'he entered' |
| d. /gəpa-nə/ | → [gəpanə] | 'we entered' |
| e. /fəpə-ə/ | → [fəpə] | 'he feared' |
| f. /fəpə-nə/ | → [fəpənə] | 'we feared' |

The verb in List 25a-b ends in the perfective base with the consonant *r*. If the 1Pl. subject marker *-nə* is attached to it, the form in List 25b occurs, in which no vowel occurs between the final consonant of the perfective base and the initial consonant of the subject suffix. The forms in List 25d and List 25f are different because the vowels *a* or *ə*, respectively, precede the 1Pl. subject suffix. The only explanation for the occurrence of these vowels is that they are part of the perfective base. Consequently, the vocalic 3Sg.m. subject suffix totally assimilates to these final vowels of the verb base, as shown in List 25c and List 25e.

5.2.2 Vowel Rounding

Prunet (1991:7) reports that Inor has a kind of vowel harmony with impersonal verbs, which labializes the central vowels *i* and *ə* into *u* and *o*, respectively, when immediately

preceding or following labialized consonants. Prunet (1991) calls this process “parasitic labialization.” In my data, I recorded this process only with derived verbs in the frequentative stem, which is formed by reduplication of an internal root consonant, as shown in List 26.

List 26: Parasitic Labialization of Central Vowels

	ROOT	3SG.M. FREQUENTATIVE PERFECTIVE	IMPERSONAL FREQUENTATIVE PERFECTIVE	
a.	√fnβ	[fɪrənəβə]	‘he broke into several pieces’	f ^w irənəwi > [furunowi] ‘one broke into several pieces’
b.	√ktf	[kitətəfə]	‘he minced into very small pieces’	kitətəf ^w i > [kutotof ^w i] ‘one minced into very small pieces’

Vowel rounding of the central vowels and the back vowel /a/ also occurs when the 3Pl.m. subject suffix -^wm is attached to a perfective verb base or the plural masculine marker -^woa to an imperfective verb base. Note that all central vowels and the back vowel /a/ in the verb base are rounded.

List 27: Vowel Rounding

	3SG.M. PERFECTIVE: /BASE-ə/	3PL.M. PERFECTIVE: /BASE- ^w m/	
a.	[gəpa]	‘he entered’	[gopom] ‘they entered’
b.	[ɕəpərə]	‘he finished’	[ɕoporum] ‘they finished’
c.	[kiβənərə]	‘he rolled down’	[kuwonorum] ‘they rolled down’
	3SG.M. IMPERFECTIVE: /ji-BASE/	3PL.M. IMPERFECTIVE: /ji-BASE- ^w oa/	
d.	[jitʃəna]	‘he sits’	[jitʃon-oa] ‘they sit’
e.	[jiwaʔa]	‘he goes out’	[jiwoʔ-oa] ‘they get out’
f.	[jifrənta]	‘he sprays’	[jifrontʃ-oa] ‘they spray’

The rounding of the vowels /ə/ and /a/ yields [o] in both cases, as shown in List 27a. Note that the final vowel of a verb base is deleted when the plural masculine marker is suffixed to it, as shown in List 27d-e.

Rounding of vowels never occurs with the mid-front vowel /e/, which might also occur in a verb base. Hence, the verb [bet'a] 'he mixed' becomes [betʃ'om] 'they mixed' without a change in the vowel *e*.

5.2.3 Vowel Lengthening

Vowel lengthening frequently occurs when a verb root starting with the glottal stop is used in the imperfective aspect or jussive mood. The initial glottal stop is deleted when preceded by prefixes which results in compensatory lengthening of the vowel following the deleted glottal stop.

List 28: Vowel Lengthening

3SG.M. PERFECTIVE: /BASE-ə/

3SG.M. IMPERFECTIVE: /ji-BASE/

a. [ʔafə] 'he saw'

[ja:ʒ] 'he sees'

b. [ʔepə] 'he did'

[je:β] 'he does'

5.2.4 Vowel Raising

Vowel rising only affects the central vowels /i ə/ and the back vowel /a/ which change into [i e ə]. Vowel rising occurs when the palatalizing 2Sg.fem. suffix ^ʃ is attached to a verb base which whose consonants cannot be palatalized (see 5.1.2), as in the following examples:

- (21) a. *kitif*
 mince:Imp.2Sg.m.
 ‘Mince (it)!’
- b. *kitif*
kitif^ʃ
 mince:Imp-2Sg.fem.
 ‘Mince (it)!’
- (22) a. *səβsiβ*
 gather:Imp.2Sg.m.
 ‘Gather (them)!’
- b. *seβsiβ*
səbsib^ʃ
 gather:Imp-2Sg.fem.
 ‘Gather (them)!’
- (23) a. *sirʔa*
 reach:Imp.2Sg.m.
 ‘Reach (it)!’
- b. *sijʔə*
sija^ʃ
 reach:Imp-2Sg.fem.
 ‘Reach (it)!’

6 Summary and Conclusion

The first part of the analysis in this paper is the description of Inor phonology. In its phonemic inventory, Inor has 35 consonants though it was recorded 18 according to the previous studies like Berhanu/Hetzron (2000). From the consonants, *l* is very rare occurring sound in the language. In their distribution, all the consonants can occur everywhere in a word position. However, /ɲ/, /p/ and /r/ never occur at word-initial position; the lateral /l/, the nasal /m^w/ and the approximant /w/ do not occur at word-final position.

There are few allophonic variations found in Inor. The palatal /ɲ/ has the allophones [ɲ] and [j]; the alveolar /n/ has the allophones [n], [r], and [j]. These allophonic variations do not change the meaning of a word, but they change the grammatical aspects of that word.

Inor has 8 cardinal vowels: front vowels /i e ε/, central vowels /i ə/, and back vowels /u o a/ with their long counterparts except ε, which does not have its long counterpart. The cardinal vowels occur everywhere in a word position except that the mid back rounded vowel /o/ is always preceded by the glottal stop /ʔ/ when it occurs at word initially; and /u/ never occurs at word initially. There are also two falling diphthongs, /-ua/ and /-oa/. The diphthongs are considered to be phonemes of their own and not only combinations of two vowels.

The second part of the analysis deals with the phonotactics and syllable structure of Inor. As phonotactics point of view, Inor allows two consecutive sequences which occur word-medial and word-final position. Sequences of two consonants are rare in word-initial position. Whenever impermeable consonant clusters occur, the high central vowel [i], or less frequently, the mid central vowel [ə], is inserted to resolve the cluster. The maximum number of consecutive consonants in a cluster is two. Thus, there are no medial sequences (except the word [ʔarβʔət], which contains three consonant sequences

at word medial position), or final consonant sequences with more than two consonants. There are no consonant clusters with the phoneme /w j p ɲ/ as first or second members; and nasals which occur as first member in a cluster are never followed by approximant or liquids. The first members of consonant sequences that are found word-medially are usually the nasals /n/ and /m/, /r/, or the stops /b/ and /k/, or the fricative /ʃ/. The second members of the consonants are usually the obstruents.

Gemination in Inor is very rare and it occurs in two ways: in lexical items as in [immat] 'one' and a result of assimilation process with the causative prefix *at-* or the negative prefix *an-* as in /at+ɕəpərə/ become [atɕɕəpərə] 'cause to finish' and /an+nəkəsə/ becomes [annəkəsə] 'he didn't bite'.

The syllable structure of Inor can begin or end with a single consonant or with a sequence of two consonants. The nucleus of a syllable in Inor can be formed by short vowel, long vowel, or diphthong.

The fourth and the most focused part of the analysis deals with the phonological process that characterize in Inor language. In Inor, there are different phonological processes that occur due to the influence of different consonants in a word.

In the language, all non-coronal consonants can be labialized as $p > p^w$, $b > b^w$, $\beta > w$, $m > m^w$, $f > f^w$, $k > k^w$, $g > g^w$, $k' > k'^w$, and $x > x^w$. Labialization, in Inor, can be the result of morphophonemic process, but also it occurs in underived lexical entities. Morphophonemic processes that trigger labialization are the formation of the impersonal, the formation of the third person plural with perfective verbs and the second and third plural with imperfective verbs, and the formation of the verbal noun, for instance, /bəsərə/ 'cooked' in the 3SG.M. perfective becomes [b^wəsəri] 'one cooked' in the impersonal perfective. Labialization also occurs in labialized consonants in word-initial and –medial positions in underived lexical entities, i.e. nominals and adverbs, as

in [amb^wə] ‘bone marrow’ and [m^wəsa] ‘calf’. Hence, labialization in such entities cannot be predicted or explained by morphophonological rules.

Palatalization is one of the common processes that occur in Inor that all coronal consonants and the velars can be palatalized in the following manner: $t > tʃ$, $d > dʃ$, $t' > tʃ'$, $s > ʃ$, $z > ʒ$, $r/n > ɲ$, $k > c$, $g > ʝ$, $k' > c'$, and $x > ç$. Palatalization, in the language, occurs due to morphophonological process and occurs in underived lexical entities. Two morphemes trigger palatalization in Inor. The first one is the female gender marker $-j$ as in [wist] ‘take(m)!’ in the 2Sg.M. imperative becomes [wistʃ] ‘take(f)!’ in the 2Sg.Fem imperative. The second one is that palatalization of base-final coronals in combination with labialization of velars is triggered by the 3Pl.M. subject suffix of perfective verbs as in [gəta] ‘he fetched’ in the 3Sg.Perf. becomes [gotʃom] ‘they fetched’ in the 3Pl.Perf..

There are also underived lexical entities that contain palatalized consonants in which palatalized consonants occur at word-initial position followed by the high vowel /i/, for instance, [jimʔə] ‘local pillow’ and [c'in] ‘buttock’. However, there are palatalized consonants precede also non-front vowel and are not restricted to the word-initial position as in [ʃəβəɲə] ‘home’ and [zəp] ‘lion’.

In Inor, the process depalatalization is found in children’s speech that only affects palatalized coronal obstruents and the palatal nasal which change into their alveolar counterparts. Thus, $tʃ > t$, $tʃ' > t'$, $dʃ > d$, $ʃ > s$, $ʒ > z$, and $ɲ > n$ as in [dʒəbən] ‘coffee pot’ in adult’s speech become [dəbən]. This process is very frequent especially at the word initial position.

Lenition, in Inor, occurs in word initial consonants of a word that weaken when they are preceded by a prefix ending in a vowel in which a strong consonant becomes weak i.e. $b > β$, $b^w > w$, $m > m̃$, $m̃ > w̃$, $w > w̃$ and $n > ɲ$. While the spirantization of the plosives [b b^w] results in a breathy continuants [β w], the lenition of the continuants [m m^w w n] yields to continuants similar to them but with additional ability to nasalize surrounding

vowels as in [nəkəsə] ‘he bit’ in 3Sg.m.Perf. becomes [ə̃r̃əkəsə] ‘one who bit’ in relative clause. Lenition, in the language, also occurs with nominals if a genitive prefix ə- or the instrumental prefix bə- is attached to a nominal; for instance, [bʷəzə] ‘Thunder god’ becomes [əwəzə] ‘of the God’ in genitive: ə-Base.

In Inor, nasalization is a very prominent feature which is triggered by the strong consonants *n*, *m* and *ŋ* or the weak ones *ñ*, *ř*, and *ṽ*. Then these elements trigger nasalization of neighboring vowels, and also *w* > *ṽ*, and *r* > *ř*. Once a nasalizing element is created by lenition, nasality spreads as far as it can, progressively and regressively. It is only blocked by non-nasalizable plosives. Nasalization also occurs in the basic lexical entries if they contain the nasals /m n ŋ/ or the nasalizing trill /ř/.

In Inor, the nasals *ɲ* and *n* at second root consonants may appear as [ɲ n] in the perfective base of a verb but as denasalized [j r] in the imperfective base of the same verb as in [fəɲə] ‘he feared’ in the 3Sg.m.Perf becomes [jifəj] ‘he fears’ in the 3Sg.m.Imperf.

Voicing of consonants, in Inor, frequently occurs in verb conjugation i.e. a voiceless second root consonant in the perfective base can change into its voiced counterpart in the imperfective and in its jussive/imperative base. Thus, *p* > *β*, *t* > *d*, *ʃ* > *ʒ*, and *tʃ* > *ɕ*; for instance, [epə] ‘he worked’ in the 3Sg.m.Perf becomes [je:β] ‘he works’ in the 3Sg.m.Imperf.

Metathesis occurs optionally in Inor with intervocalic clusters of labials and alveolars. Thus, the Underlying Sequence > Optional Sequence, i.e. like *-br-* > *-rb-*, *-rβ-* > *-βr-*, *-tf-* > *-ft-*, *-zm-* > *-mz-*, and *-ff-* > *-ff-*, for instance, [kutfə] ~ [kuftə] ‘chopped meat’.

Phonological processes, in the language, occur not only in consonants but also in vowel changes such as vowel assimilation, vowel rounding, vowel lengthening, and vowel rising. In some cases, there is total vowel assimilation in the language. In which the

mid-central vowel /ə/ totally assimilates to other vowels when they come contact at morpheme junctures.

In the language, vowel rounding occurs only with a derived verb in the frequentative stem in which the central vowels *i* and *ə* rounds into *u* and *o*, respectively. It also occurs when the 3Pl.m. subject suffix-^wm is attached to a perfective verb base. All central vowels and the back vowel /a/ in the verb base are rounded. For example, [gəpa] 'he entered' in the 3Sg.M. perfective becomes [gopom] 'they entered' in the 3Pl.M.Perf. The rounding of the vowels /ə/ and /a/ yields [o]; and rounding of vowels never occur with the mid-front vowel /e/.

Vowel lengthening is another type of vowel change that occurs frequently. In which the initial glottal stop is deleted when preceded by a prefix which results in compensatory lengthening a vowel following the deleted glottal stop as in [ʔənʔa] 'he went up' becomes [jə̃:ĩʔa] 'he goes up'.

In Inor, there is vowel raising process that only affects the central vowels /i ə/ and the back vowel /a/. Vowel rising occurs when the palatalizing 2Sg.fem. suffix ^j is attached to a verb base which whose consonants cannot be palatalized (see 5.2.4).

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APPENDIX: SIL 320-ITEM WORDLIST

Body Parts

No.	English	Amharic	Inor
1.	Back	ጀርባ	gɪʃə
2.	Beard	ጠጭ	k ^w intʃif
3.	Belly	ሆድ	kəs
4.	Blood	ደም	dəmj
5.	Bone	አጥንት	ʔäʕimj
6.	Breast	ጠኑ	t'u:β
7.	Buttocks	ቂጥ	zəŋgod
8.	Chin	አገጭ	g ^w intʃ'ə
9.	Claw	ጥፍር	ʕimʃir
10.	Ear	ጆሮ	ʕinzir
11.	Elbow	ቁር ጭጭጭ	suxija
12.	Eyebrow	ቅንድብ	k'iniβ
13.	Eye	ዓይን	ʔër
14.	Fingers	ጣኑ	ʔat'eβə
15.	Foot	አግር	ʔəgir
16.	Forearm	ከንድ	xinʔə
17.	Forehead	ግንባር	t'abana
18.	Fur	ድግር	digər
19.	Guts	አንጅት	ʔanzəd
20.	Hair	ጠጉር	g ^w inʔər
21.	Hand	እጅ	əɕʒ
22.	Head	ራስ	g ^w inʔər
23.	Heart	ልብ	çin
24.	Hide	ቆዳ	goga
25.	Knee	ጉልበት	gürməd
26.	Lip	ከንፈር	kəŋfər
27.	Liver	ጉበት	hərt
28.	Mouth	አፍ	ʔaf ^w

29.	Navel	አምበርት	k'or
30.	Neck	አንገት	?aŋgəd
31.	Nose	አፍንጫ	?amf ^w una
32.	Shoulder	ትከሻ	?agad
33.	Skin	ቆዳ	goga
34.	Thigh	ታፋ	wəçə
35.	Tongue	ምላስ	anəβəd
36.	Tooth	ጥርስ	ʃin

Food

No.	English	Amharic	Inor
1.	Banana	መዝ	mu:z
2.	Chicken	ዶሮ	kutəra
3.	Egg	አንቁላል	inj'ura
4.	Fish	አሳ	?asa
5.	Honey	ማጽ	wijə
6.	Maize	በቆሎ	bək'o?ə
7.	Meat	ስጋ	bəsər
8.	Ripe	የበሰለምግብ	ʃərəd
9.	Crop	ጥራጥሬ	məzir?ə

Plant

No.	English	Amharic	Inor
1.	Banana	መዝ	mu:z
2.	Bark (plant part)	ቅርፊት	xãřã
3.	Bush	ቁጥቋጦ	tʃəxuwə
4.	Flower (plant part)	አበባ	mama
5.	Fruit (plant part)	ፍሬ	firijə
6.	Grass	ሳር	sa?ar
7.	Leaf	ቅጠል	kə?ər
8.	Plant	ዕፅዋት	diβir
9.	Tree/Wood	ዛፍ	?e?ə
10.	Weed	አረም	arəfa

Event / situation

No.	English	Amharic	Inor
1.	Hunger	ረሃብ	gaɕə
2.	War	ጦርነት	ariβ
3.	Wedding	ሰርግ	agnost
4.	Harvest	የሰብልወቅት	gor

Insects

No.	English	Amharic	Inor
1.	Ant	ጉንዳን	g ^w ənda
2.	Fly	ዝንብ	zimb
3.	Honeybee	ንብ	niβ
4.	Scorpion	ጊንጥ	sunt'əfir
5.	Spider	ሸረሪት	əʃed
6.	Termite	ምስጥ	wət
7.	Worm	ትል	arək ^{wə}

Animals and body parts of animals

No.	English	Amharic	Inor
1.	Animal	እንስሳ	---
2.	Bat	የሌሊትወፍ	tʃ'it
3.	Bird	ወፍ	?amf
4.	Buffalo	ቀጭኔ	---
5.	Cat	ድመት	?aŋgatʃa
6.	Chicken	ዶሮ	k ^w itara
7.	Cow	ላም	ããam
8.	Crocodile	አዞ	əβarawi
9.	Dog	ወሻ	g'ijə
10.	Donkey	አህያ	ĩmjar
11.	Fish	አሳ	?asa
12.	Frog	እንቁራሪት	k ^w əntʃ'ə
13.	Goat	ፍየል	fəpə?

14.	Hyena	ጅብ	gõntfə
15.	Leopard	ነብር	Zagora
16.	Rat	አይጥ	fuʔur
17.	Snake	አባብ	tʃ'irə
18.	Tail (animal part)	ጅራት	ɕũmǝ
19.	Horn (animal part)	ቀንድ	kən
20.	Wing (animal part)	ከንፍ	k'orsa
21.	Feather (animal part)	ላባ	k'orsa

Place

No.	English	Amharic	Inor
1.	Bridge	ድልድይ	k'at'ajə
2.	Gate	መገቢያ	imʃotʃə
3.	Grave	መቃብር	mək'a:bir
4.	Harvest	ማሳ	məzrʔə
5.	Here	እዚህ	wa:j
6.	Market	ገበያ	gəβəja
7.	Path	መተላለፊያ	waʔad
8.	Road	መንገድ	Meja
9.	Termite hill	የምስጢር ጥጥር	godɕə
10.	Up	አላይ	Fore

Nature

No.	English	Amharic	Inor
1.	Clay	ሸከላ	wəβarβə
2.	Cloud	ደመና	damjəra
3.	Dew	ጠዘ	ʔawə
4.	Dirt	አቧራ	ʔawara
5.	Earth	መሬት	ʔafər
6.	Fire	አሳት	isa:d
7.	God	አምላክ	Gojta
8.	Lake	ሐይቅ	Boto
9.	Light	ብርሃን	ʔũmǝjə

10.	Lightening	መበረቅ	boʒə
11.	Moon	ጨቋ	bəjə
12.	Mountain	ተራራ	ʔajə
13.	Mud	ጭቃ	tʃ'ik'ara
14.	Night??	ምሽት	ʔədar
15.	Rain	ዝናብ	dijə
16.	Rain bow	ቀስተ-ደመና	m ^w ahajad
17.	River	ወንዝ	bər
18.	Sand	እሸዋ	gutə
19.	Sky	ሰማይ	samaj
20.	Smoke	ጭክ	tən
21.	Star	ኮከብ	hohəβ
22.	Stone	ድንጋይ	ʔimjir
23.	Sun	ፀሐይ	ʔajəd
24.	Thunder	ነጎድጓድ	---
25.	Water	ወሃ	ixa
26.	Wind	ነፋስ	nifas

Person

No.	English	Amharic	Inor
1.	Man	ወንድ	ʔətʃ
2.	Woman	ሴት	gərəd
3.	I	እኔ	ija
4.	He	እሱ	xuda
5.	We	እኛ	ina
6.	They	እነሱ	xunoa
7.	You (sg.)	አንተ/አንቺ/አርሰዎ	axə/afja/axua
8.	You (pl)	እናንተ	axua

Blood relation

No.	English	Amharic	Inor
1.	Brother	ወንድም	?əsəm
2.	Sister	እህት	?ətəm
3.	Mother	እናት	?adod
4.	Father	አባት	?aba

Marriage relation

No.	English	Amharic	Inor
1.	Husband	ባል	mis
2.	Wife	ሜንት	mijt

Cardinal numbers

No.	English	Amharic	Inor
1.	One	አንድ	?at
2.	Two	ሁለት	wir?et
3.	Three	ሶስት	so?ost
4.	Four	አራት	?arβ?ət
5.	Five	አምስት	?am?ist
6.	Six	ስድስት	sidist
7.	Seven	ሰባት	səβ?at
8.	Eight	ስምንት	sūnt
9.	Nine	ዘጠኝ	zət'ə
10.	Ten	አስር	?asir
11.	Twenty	ሃያ	xuj?a
12.	Hundred	መቶ	bə?ər

Quantifiers

No.	English	Amharic	Inor
1.	All	ሁሉ	inni
2.	Few	ጥቂት	k'əri?ar
3.	Many	ብዙ	rora?ar
4.	None	ምንም	?ata?ar

Demonstrative adjectives

No.	English	Amharic	Inor
1.	That	ያ	xada
2.	This	ይህ	wada

WH-Question words

No.	English	Amharic	Inor
1.	What	ምን	mir
2.	When	መቼ	mətfə
3.	Where	የት	?əti
4.	Who	ማን	man
5.	Whose	የማን	əmjan
6.	Why	ለምን	əmjir
7.	How	እንዴት	ətəxə

Answers

No.	English	Amharic	Inor
1.	No	አይ	ba?aj
2.	Yes	አዎ	inkə

Time

No.	English	Amharic	Inor
1.	Night	ምሽት	?ədar
2.	Yesterday	ትላንት	trəna

Excretion

No.	English	Amharic	Inor
1.	Saliva	ምራቅ	imbac'ə
2.	Tear	እንባ	imba
3.	Stool	ሰገራ	simjad

Adjectives

No.	English	Amharic	Inor
1.	Bad	መጥፎ	mut'it'
2.	Bear child	ባለጌልጅ	?ajeta
3.	Big	ትልቅ	nu?ijə
4.	Black	ጥቁር	gəmbəna
5.	Cold	ቀዝቃዛ	ziza
6.	Crooked	ጠመገግ	at'wat'owə /jirə
7.	Dirty	እድፍ	t'əβsa
8.	Empty	ባዶ	ata?ar
9.	Few	ጥቂት	wit'ika?ar
10.	Fool	ጥኝ	gawa
11.	Full	ሙሉ	mur?a
12.	Good	ጥሩ	wəxe
13.	Green	አረንጓዴ	kə?ərijə
14.	Heavy	ከባድ	jiřə?əz
15.	Hot	መቅ/ትኩስ	mū?
16.	Left	ግራ	gura
21.	Long	ረጅም	deka
22.	Louse	ዋልጌ	zapatf
23.	Narrow	ጠባብ	t'əβiβ
24.	New	አዲስ	weja/gədər
25.	Old	አሮጌ	gus
26.	Other	ሌላ	əna
27.	Red	ቀይ	biβa
28.	Right	ቀኝ	k'ənə
29.	Hungry	ረሃብተኛ	əgadən
30.	Ripe	የበሰለ	əβəsərə
31.	Rotten	የበሰበሰ	mit'matf'ə
32.	Sharp	የሰላ /ሸል	wid
33.	Short	አጭር	e?ir
34.	Small	ትንሽ	insijə

35.	Smooth	ለስላሳ	jajiβ
36.	Soft	ለስላሳ	ʃifijə
37.	Straight	ቀጥታ	k'it'ijə
38.	Sweet	ጣፋጭ	yīʔikaʔar
39.	Thick	ወፍራም	dindʒir
40.	Thin	ቀጭን	k'ətʃ'ir
41.	Warm	ሞቃት	womb
42.	Well	መልካም	wəxe
43.	Wet	ርጥብ	ʔira
44.	Wide	ሰፊ	bətid
45.	White	ነጭ	g ^w ad
46.	Yellow	ቢጫ	wit'a:

Verbs of activity, sense, and emotion

No.	English	Amharic	Inor
1.	Ask	ጠየቀ	təsaʔarə
2.	Bark	ጮኸ	axəna
3.	Bathe	ታጠባ	taʔəβə
4.	Bite	ነከሰ	nəkəsə
5.	Blow	ነፋ	nəfa
6.	Burn	አቃጠለ	mecərə
7.	Buy	ገዛ	sijə
8.	Come	መጣ	maʔa
9.	Cook	ቀቀለ	tʃəkərə
10.	Cough	አሳለ	dənəgəni
11.	Count	ቆጠረ	mezərə
12.	Cut	ቆረጠ	ant'ə
13.	Die	ሞተ	modə
14.	Dig	ቆፈረ	xəjə
15.	Drink	ጠጣ	sətʃ'ə
16.	Eat	በላ	bənʔa
17.	Enter	ገባ	gəpa
18.	Exit	ወጣ	waʔa

19.	Fall	ወደቀ	wətəʔə
20.	Fear	ፈራ	fəjə
21.	Fight	ተጣለ	tərāŋkəsə
22.	Fly	በረረ	bənərə
23.	Give	ሰጠ	ʔāmጎ
24.	Go	ሄደ	wərə
25.	Hear	ሰማ	səmʔa
26.	Hit	መታ	dənəgə
27.	Hold	ያዘ	t'əbət'ə
28.	Jump	ዘለለ	zəkərə
29.	Kill	ገደለ	ʔətərə
30.	Know	አወቀ	xarə
31.	Lie	ዋሸ	fət'ərə
32.	Listen	ሰማ	səmʔa
33.	Lough	ሳቀ	daʔə
34.	Machete	አጨጌ	fatʃ'ə
35.	Make	አዘጋጀ	ʔepə
36.	Marry	አገባ	agəpa
54.	Paint	ቀባ	ʔəpa
37.	Pour	አፈሰሰ	xoʔə
38.	Pull	ሳበ	ʃamጎ
39.	Push	ገፋ	gəfa
40.	Rest	አረፈ	afonə
55.	Reach	ደረሰ	sənʔa
41.	Run	ሮጠ	təřǎw'ǎ
42.	Say	ተናገረ /አለ	zirenkə
43.	Scratch	አከከ	ʔakəkə
44.	See	አየ	ʔafə
45.	Sell	ሸጠ	ʔasijə
46.	Sew	ሰፋ	səfa:
47.	Sick	ታመጠ	teʔemə
47.	Sing	ዘፈነ	təʃ'awədə

48.	Sit	ተቀመጠ	tʃəna
49.	Sleep	ተኛ	təgətərə
50.	Smell	አሸተተ	ʔaʃəta
56.	Sneeze	አስነጠሰ	ʔatrent'əsə
57.	Spit	ተፋ	itif barə
58.	Stand	ቆመ	təʃəkəβə
59.	Steal	ሰረቀ	sənəʔə
60.	Sweep	ጠረገ	ʔasəsə
61.	Swim	ዋኘ	darəja dənəgə
62.	Take	ወሰደ	wəsədə
63.	Teach	አስተማረ	astəmarə
64.	Thick	ወፈረ	dīrētərə
65.	Throw	ወረወረ	ʔerəkə
66.	Tie	አሰረ	akədə
67.	Vomit	አሰማሰሰ	fenəʔə
68.	Walk	ተራመደ	wərə
69.	Want	ፈለገ	seʔə
70.	Whistle	አፏጨ	fuk'əjə
71.	Yawn	አዛጋ	aβəjanərə

Declaration

I, the undersigned declare that this thesis is my original work. It has not been presented in a degree in any university and that all sources of materials for this thesis have been acknowledged.

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This thesis has been submitted for examination with my approval as a University Advisor.

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