

Some Aspects of Morphophonemic Phenomena in Arsi-Bale Afan Oromo: the Perspective of Non-linear Phonology

by

Tilahun Negash Mekuria

Supervisor

Mulugeta Seyoum (PhD)

A Dissertation submitted to the Graduate School of Addis Ababa
University in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in General Linguistics

June, 2018

Addis Ababa University
College of Humanities Language Studies Journalism and Communication
Department of Linguistics and Philology
(Graduate Program)



**Some Aspects of Morphophonemic Phenomena in
Arsi-Bale Afan Oromo: the Perspective of Non-linear
Phonology**

A Dissertation submitted to the Graduate School of Addis Ababa
University in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in General Linguistics

by

Tilahun Negash Mekuria

2018

CHAPTER ONE

BACKGROUND STUDIES

1.0 Introduction

This introductory chapter starts with a brief statement on the people and speakers of Arsi-Bale Afan Oromo (Henceforth, ABAO) language with a sketch of dialectal variation in the language. Previous studies on Oromo language, the scope of the study, objectives of the research, and the methodology used are discussed in this chapter. The chapter also contains an explanation of the theoretical framework and the motivation for using the framework in the phonological representations. The chapter discusses non-linear phonology particularly, CV phonology, Autosegmental Phonology as well as Metrical Phonology which is a similar development to Autosegmental Phonology that proposes the hierarchical nature of elements.

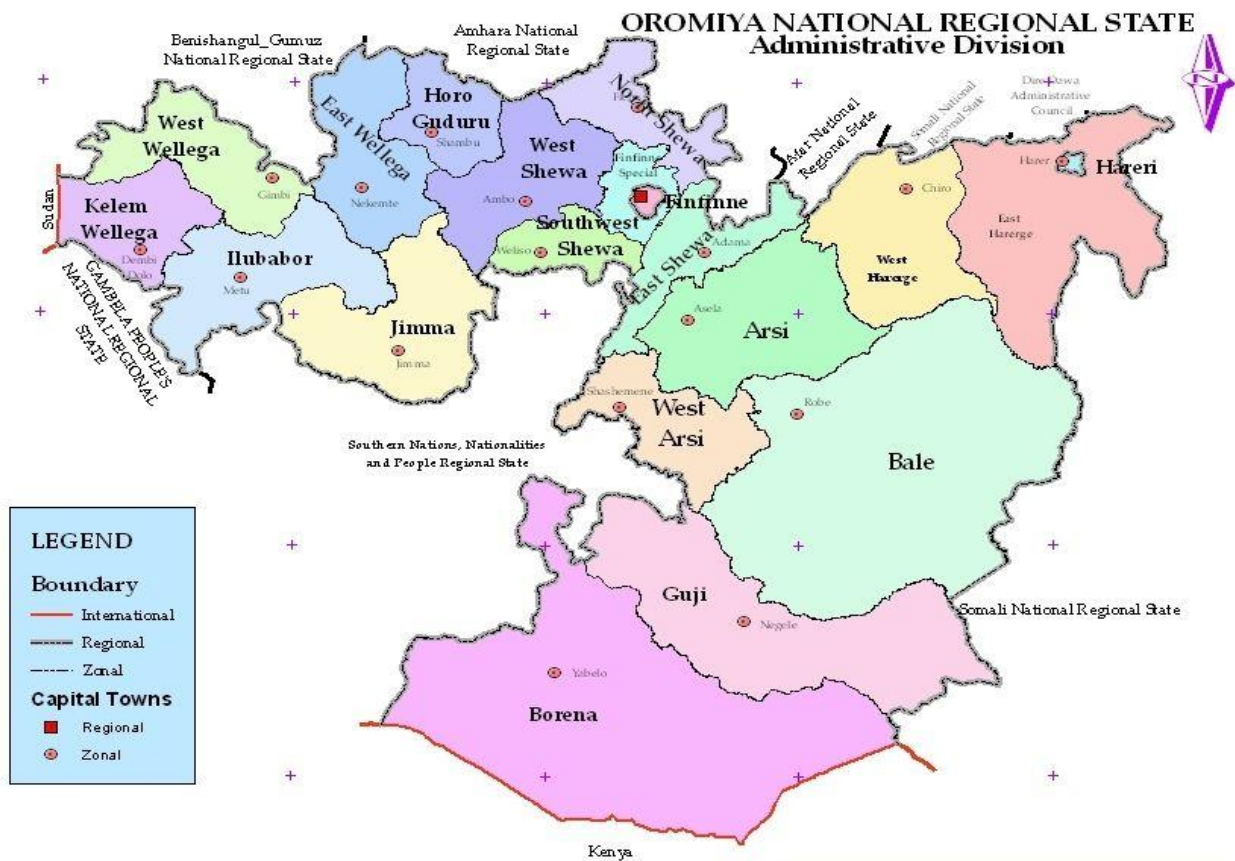
1.1 The People

The Oromo live over a huge area stretching from Somalia through north eastern Ethiopia to Kenya and the majority of them live in Ethiopia (Campbell and King, 2013: 1295). They represent the largest ethnic group both numerically and geographically among all the ethnic groups that live within the boundary of Ethiopia (Gragg 1976, Heine 1981). *Afáan Oromo* or the Oromo language is the modern term used in Ethiopia for the language spoken by the Oromo. In the 19th and most of the 20th century, it was usually referred to by its speakers as *afáan Oromóo* ‘language of the Oromo’ or as *afáan Órmáa* ‘language of the people’ or ‘language of the Orma’ (Banti, 2008: 4).

The elder speakers of *Arsi-Bale* dialect confirm the speakers’ preference of the term *Oromo* and *Afan Oromo* when referring to themselves and the language, respectively (p.c.). Hence, this thesis uses the terms accordingly to accommodate the preference of the language speakers.

The summary and statistical report of the 2007 Population and Housing Census of Ethiopia which was published in December 2008 included the 1984 and 1994 information about the people of Ethiopia in addition to the 2007 facts on the inhabitants. The 1994 Population and

Housing Census of Ethiopia for example, demonstrated that the population size of Oromo was 17,080,318 (32.1%) out of the 53,477, 265 total population of Ethiopia. According to the 2007 population and Housing Census, this number has increased by 2.4% over the past ten years to become 25,488,344 which account for (34.5%) of the 73,918,505 total population of Ethiopia. According to the 2018 Population and Housing Census of Ethiopia, the population reached 107,450,198 that make up (34.4%) of the total population of the country (<http://worldpopulationreview.com/countries/ethiopia/>). The following colored map 1 depicts typical Afan Oromo speaking area people.



Map 1: Afan Oromo speaking area

Source: <https://www.pinterest.com/pin/675821487805558551/>

One group of *Afan Oromo* speakers is the *ArsiOromo* people. The Arsi are one of the many branches of the Oromo people who predominantly live in the Arsi and Bale zones of the Oromia Regional State, Southern Ethiopia. Based on the 2007 census conducted by the Ethiopian Central Statistical Agency (ECSA), the population of Arsi is 2,637,657, of which 1,323,424 are men and 1,314,233 are women; with an area of 19,825.22 square kilometers.

The people of Arsi claim to have descended from a single individual called *Arsse*; the name of a person who is believed to have been the “founding father” of the group (Mindaye, 2005: 18).

The two main branches of *ArsiOromo* are Mandoo and Siqqo. Mandoo refers to the *Arsis* in the Arsi and northern Bale Zones, while Siqqo refers to those mainly in the Bale Zone. As the famous tradition of this group of *Afan Oromo* speakers further explain *Arsse* had two sons whose names were Mando (Mandayou) and Siqqo (Siqqisa), Mando was the younger son (quxusu) of *Arsse* while Siqqo was the elder (angafa); (p.c with Ato Amino Edo).

Besides the provinces of Arsi and Bale which *Arsis* overwhelmingly occupied, one also finds a significant proportion of the *Arsi Oromo* in neighboring provinces of Showa and Sidamo (Mindaye, 2005: 18). The Arsi are divided into the Mando and the Siqqo moieties. The Siqqo have five sub-moieties collectively called Shanan Siqqo (the five ones of Siqqo). They are Bullallaa, Wacaalee, Jaawii, Waajii and Ilaannii.

The Mando have seven sub-moieties collectively called Torban Mando (the seven ones of Mando). They are Raayyaa, Kajawaa, Hawaxaa (Hawaxxuu), Utaa, Waayyuu, Harawaa and Biltuu (Jeylan, 2005: 26). These people speak the same dialect *Afan Oromo* and share the same culture and traditions. The following chart shows the main moieties of Arsi Oromo with sub-moieties.

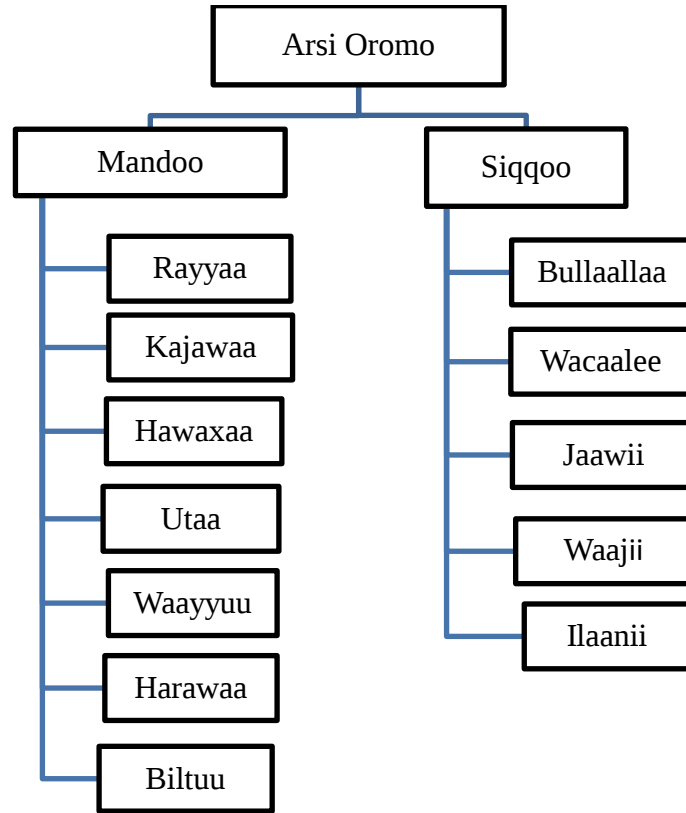


Chart 1: The moieties and sub-moieties of Arsi Oromo

The Arsi have developed a concept of Arsoma which is roughly translated to “Arsihood” in English. The kinship in the Arsi Oromo society is hierarchically structured into five categories that range from micro to macro kinship order.

The categories are Mana, Warra, Aanaa, Balbala and Gosa. Gosa is the largest kinship unit in the scenario of kinship organization of the Arsi Oromo people. The Chart 2 below shows the kinship organization of Arsi Oromo.

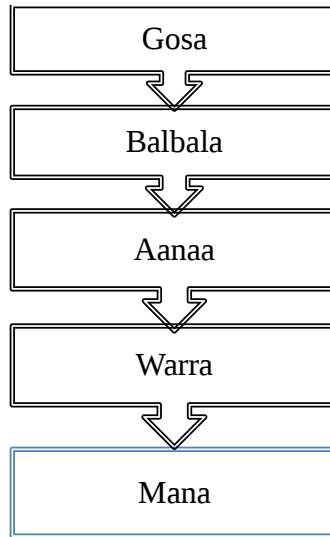


Chart 2: The kinship organization of Arsi Oromo people

The Arsi Oromo have a mixed economy of animal husbandry and crop cultivation in a fertile land that stretches over a wide variety of altitudes. Their livelihood is based largely on subsistence farming.

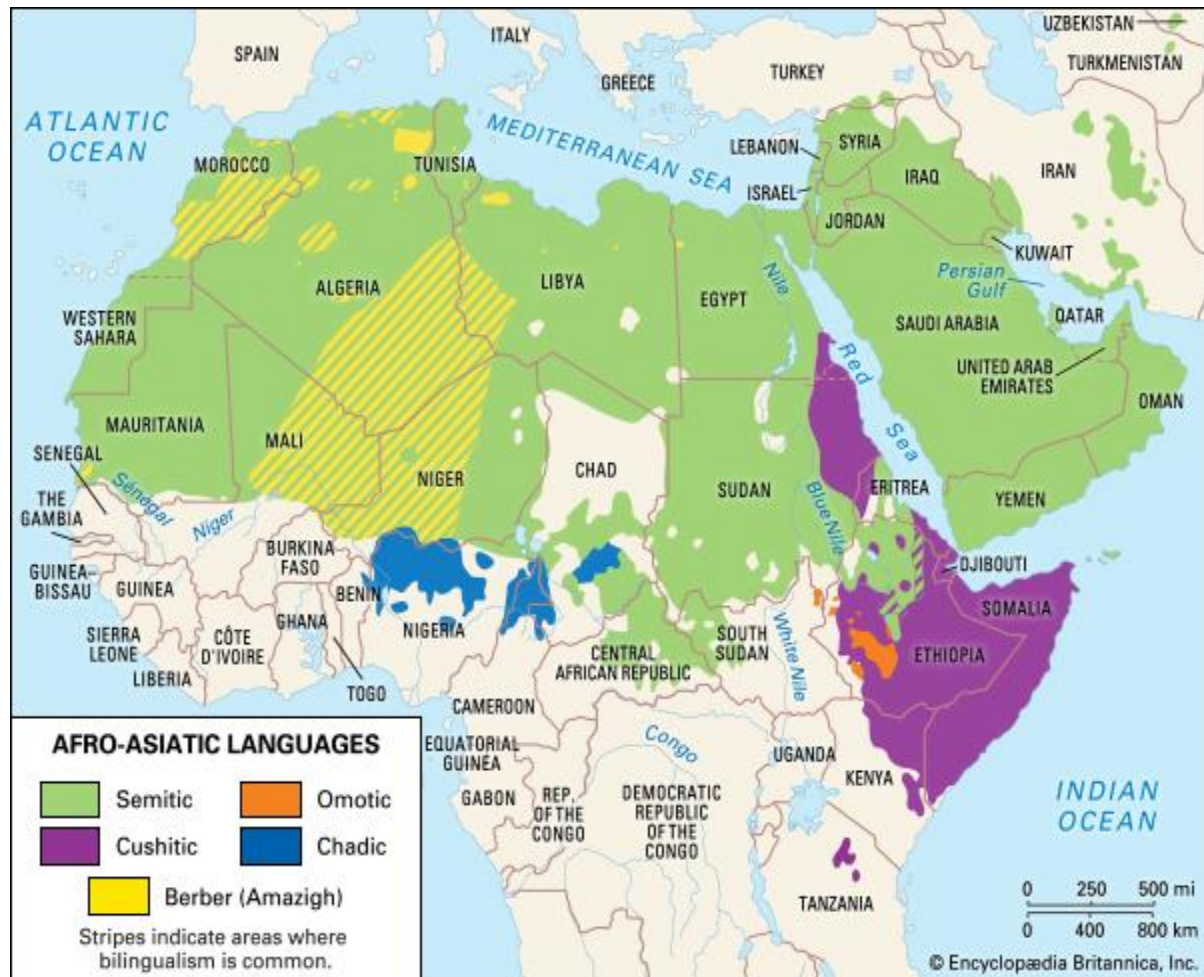
The Arsi and Bale land is suitable for the cultivation of bread wheat, barley, lin-seed, and field peas. Their real wealth, however, consists of cattle, sheep, goats, and horses. As other Oromo do, the Arsi and Bale people hold high regard for their cattle because emotions and pride are centered in the livestock that People have. The Arsi who do not own cattle are not considered proper Arsis. The status of a person among the Arsi people finds its expression in the number of cattle owned, i.e. the owner of many heads of cattle is a respected person.

With regard to religion, before the coming of Islam and Christianity. The Arsis were followers of *Waaqeffannaa* (belief in sky God), the Oromo version of the African traditional religion (Jeylan, 2005: 15). The ABAO groups of people are basically Muslims, but they undergo change of religion due to the permissible marriage to *Selalie Oromo* and to other Christians in certain modernized marriages, especially in those marriages that take place in towns.

1.2 The Language

Afan Oromo is one of the languages of the Lowland East Cushitic within the Cushitic family of the Afro-Asiatic phylum (Gragg 1982, Baye 1986, Mi'eessaa and Robbin 2009). It is the first

language in terms of number of speakers from Cushitic languages (Bender and others, 2003). It is also one of the major Ethiopian languages.



Map 2: Afro-asiatic language family (Wolff, 2017: 2)

<https://www.britannica.com/topic/Afro-Asiatic-languages>.

It is believed that in Africa only Arabic and Hausa Fulani languages surpass the Afan Oromo language in the number of people who speak it (Kebede, 2001; Muudee, 1995). The position of Afan Oromo within Afro-asiatic language family is demonstrated by Figure 1 below.

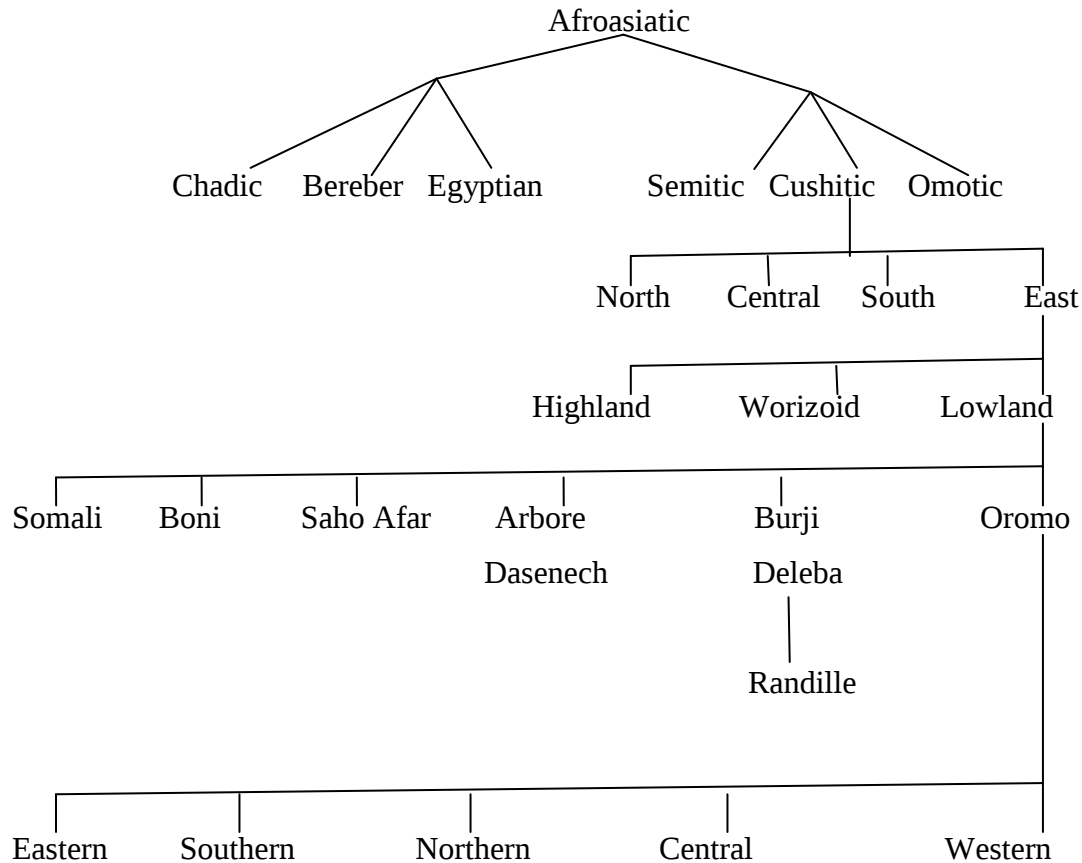


Figure 1: Position of Afan Oromo within Afro-asiatic family (Teferi, 2015: 28)

(based on the information compiled from African Languages: An Introduction, 2000:74-81 and Language in Ethiopia, 1976:130-154)

1.3 The dialect variation in Afan Oromo

Afan Oromo has a number of dialects. Linguists have suggested the classification of Afan Oromo dialect areas based on their own parameters. Bender and Mulugeta (1976: 1-2), have classified Afan Oromo in to eight dialects. These dialects are Mecca (Western), Tulama (Central), Wallo and Rayyaa (Northern), Arusi, Guji and Borena (Southern) and Hararge (Eastern). Although the base for the classification is not stated clearly in the study, it appears to be a geographical location. Heine (1981: 15) recognizes two major dialect areas, ‘Central Afan Oromo’ and ‘Tana Afan Oromo’. The other scholar who suggested on the dialect areas of *Afan Oromo* spoken in Ethiopia is Gragg (1982: 12-13). He states that *Afan Oromo* which is spoken in Ethiopia might be classified into four dialect areas, namely: Western (Wallagga, Iluu Abbaa

Bora, Jimma), Central (Shawaa), Eastern (Hararge) and Southern (Arsii-Baale, Gujii and Boorana). Kebede (1991) has classified *Afan Oromo* (including that of Kenya) into four dialect areas depending on phonological basis. These are: a) North Western (Tulma, Mecca). b) Eastern (Harar, Arsi-Bale, Wallo, Rayya). c) Central (Arsi-Zeway, Guji, Borana, Munyo, Orma). d) Southern (Waata). Though not detailed work, Lloret (1994: 6) divides the various dialects Afan Oromo into Western and Eastern. The western one encompassing Raayyaa, Baate, Macca and Tuulama, the eastern comprising Harar, Arsi, Boorana, Gabra, Orma and Waata. Kebede (2005) on the other hand suggests that Afan Oromo is sub-divided into five major dialect areas: 1) Waata, Orma, Borana of Ethiopia and Kenya, and Arsi, 2) Tuulama and Mecca, 3) Raya, 4) Hararge, and 5) Baate. Banti (2008) classifies the main known dialect groups of Afan Oromo spoken in Ethiopia into: 1) Northern Afan Oromo (Baate and Raayyaa), 2) Western Afan Oromo (Mecca), 3) Highland Shewan Afan Oromo (Tuulama), 4) Eastern Afan Oromo (Hararge), 5) Central Afan Oromo (Gujii and Arsii), and 6) Southern Afan Oromo (Boorana).

Kebede (2009) conducted extensive research on Oromo dialects as part of his doctoral study based on morphophonemic and phonetic-lexical data, he constructed a genetic tree of Oromo dialects, whereby the dialects were divided into ten genetic groups such as Western, Eastern, Central, South-east-north, Waata, Northeast, East, North, Wollo and Raya. The most recent work on the classification of *Afan Oromo* dialect is Feda (2015). He argues that the proposal of new classification of Oromo dialects is required due to three major reasons. These are:

1. The previous classifications were done based on subjective comparisons of mainly lexical differences.
2. The past classifications produced inconsistent results causing confusions to readers.
3. In the old classifications, the labels that are used to identify the dialects are not inappropriate as the names of Oromo subgroups, such as Macha and Tulama have been used to refer to the western and the central varieties, but names of geographical areas have been used to identify the other varieties.

In his classification, the Oromo language has been divided into six dialects; west, central, northern, southern, Southeast and eastern dialects. This study is in line with Feda (2015) for he clearly puts ABAO a distinct dialect. The thesis is also aligned with Gragg (1982) and Kebede (1991) for the classification is made basically on phonology and the central concern of the

thesis is representation of phonological process. The recent classification is indicated in the following Chart 3.

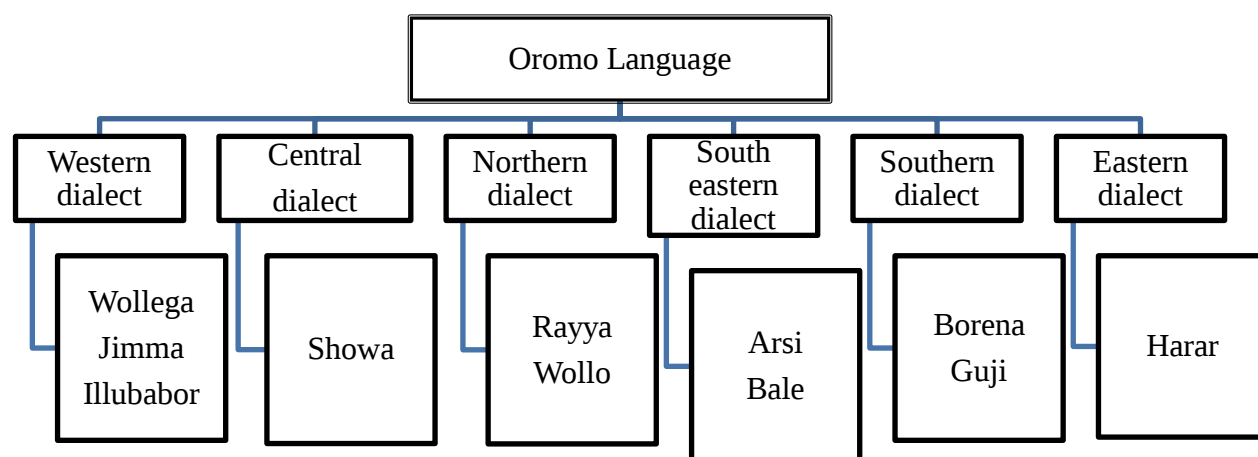
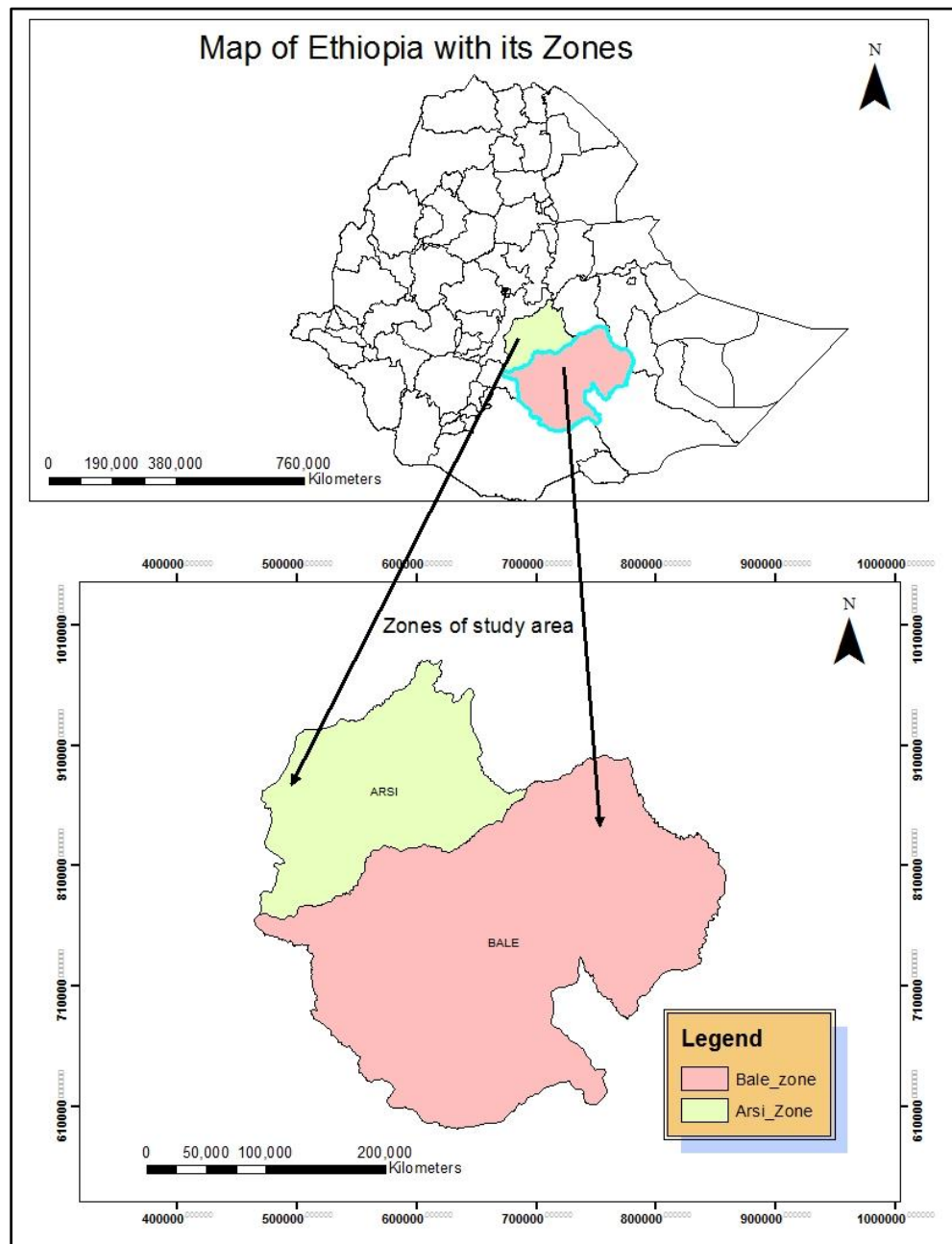


Chart 3: Classification of Afan Oromo dialects (Feda, 2015:7)

Regarding the structural levels at which variation in the language is observed, Crystal (1997) points out that variation in a certain language is significantly observable at three structural levels: phonological, morphological and semantic or lexical levels. Amanuel and Samuel (2012: 32) further state that ‘studies undertaken on Afan Oromodialectology point out that the dialects show variation in terms of vocabulary, grammar and pronunciation.’

As one can perceive the above classification of Afan Oromo into its respective dialect areas, he can recognise that a particular dialect of Afan Oromo is spoken by the people of Arsi who inhabit both in Arsi and Bale Zones of Oromia regional state. Thus, this dialect may differ in structural levels mentioned in the paragraph above.

Regarding the dialect of Afan Oromo and the people that speak it Morkata (2006: 1) says, the people speak the same Afan Oromodialect which is sometimes called Afan Arsi (unique to Arsi people) in particular. Map 3 depicts the area where Arsi-Bale dialect Afan Oromo is typically spoken.



Map 3: Ethiopian Zones that speak Arsi-Bale dialect Afan oromo

1.4 Statement of the Problem

There is, in fact, a notably large number of linguistic studies on *Afan Oromo* by Ethiopians as well as foreigners; however, most of them are descriptive works and they are not fully comprehensive. Moreover, there is limited study on *AfanOromo* phonology and more importantly, the Arsi-Bale Oromo phonology has not been described well. There is also the unsettled issue of the suprasegmental feature; tone. *Afan Oromo* is one of the regional languages of Ethiopia. It is the language used to deal business and it is also used as a lingua franca in Ethiopia, Somalia, and Kenya. *Afan Oromo* is used in regional governmental administration, national commerce, and in mass media (newspaper, television, radio). For *Afan Oromo* achieved the status of literary language of Ethiopia in 1992, it is used as the medium of instruction in grades 1-8 and is taught in both secondary schools and in institutions of higher education in Oromia region. Hence, the study of its grammar deserves great attention. There are aspects of the grammar, such as the sound system that need detailed study in the light of recent developments in theoretical linguistics. Regarding the need and opportunity for research on Arsi-Bale *Afan Oromo* (Abbas, 1991: 50-84), cited in 'The Arsi Oromo people', emphasizes that 'The groups of Arsi, Bale and Karrayyu have been relatively less studied by social scientists and there is a great need for researches on these groups for there are ample opportunities for research among these people.' This seeks the attention of linguists.

There is a controversy over whether Afan oromo is a tone language (Andrzejewski, 1957, 1970; Lloret, 1988; Habte, 2003) or a pitch-accent language (Banti, 1988; Campbell and King, 2013). Furthermore, the studies on the tone of the language so far came up with different results and the domain of their study is limited to descriptive work that didn't consider the theory of phonology or even those studies that counted the phonological theory as significant pillar to describe the dialect they studied were not comprehensive for they were limited to word level. This research attempts to explore some aspects of morphophonemic processes and the pitch-accent system of the ABAO nouns, pronouns, verbs, and adjectives and the role pitch plays in the grammar of the language. Furthermore, it endeavors to exhibit the relation between pitch-accent and stress in the language.

According to the researcher exploring the characteristic feature of the language aforementioned and examining them with the phonological theory may be more comprehensive. Hence, he believes that the study is entirely an exhaustive work because it examines the phonology of the language from a theoretical perspective and it considers Autosegmental and Metrical Phonology of Goldsmith (1976, 1990) and CV phonology of (Clements and Keyser, 1983) as a framework. This is because the theories address analytical issues that the SPE (Sound Pattern of English) couldn't handle.

1.5 Research questions

The following research questions are designed to guide the present research on how the ABAO morphophonemic processes, the pitch-accent and stress are treated in Non-linear phonology.

1. What are the distinctive features which underlie the sounds of Arsi-Bale dialect of *Afan Oromo* with the various syllable types and structures that are important in the language?
2. What are the phonological phenomena found in Arsi-Bale dialect of *Afan Oromo*?
3. How can we handle the phonological phenomena in Arsi-Bale dialect of *Afan Oromo* language using autosegmental and/or metrical Phonology and CV Phonology?
4. What are the properties of tone and stress in ABAO and what is the interaction of them in the language?

1.6 Objectives of the Study

1.6.1 General objective

The general objective of this study is to make a detailed description of the phonological phenomena of Arsi-Bale dialect *Afan Oromo* language in the light of the assumptions in Non-Linear phonology; Autosegmental and Metrical Phonology of Goldsmith (1976, 1990) and CV phonology of (Clements and Keyser, 1983).

1.6.2 Specific objectives

The research specifically attempts to:

- describe the sound system of ABAO.
- discuss the phonological processes manifested in ABAO.
- describe the pitch-accent system of ABAO.

- illustrate the stress pattern of ABAO.

1.7 Significance of the Study

The previous studies almost fail to practice an exhaustive employment of the phonological theory which is adequate in representing all the phonological phenomena in the *Afan Oromo* dialect they described. Hence, the present study tries to account for the morphophonemic processes, pitch-accent system and metrical treatment of pitch-accent in the language in the light of autosegmental, Metrical and CV phonology. The study may provide a further insight into the phonetics and phonology of the language. The study will thus, contribute to what has been achieved regarding the phonology of *Afan Oromo* language. The following bodies may benefit from this study.

- **Linguists interested in Afan Oromo:** they may get some more facts for the study may contribute to other areas of the language for there is the promising nature of linguistic elements in modifying one another.
- **Lexicographers:** it may enhance the development of the *Afan Oromo* writing system by facilitating the standardization.
- **Researchers in phonological study:** it may motivate phonologists to study closely related languages for it gives some details on how to handle those processes that couldn't be managed by linear phonology.

Generally, it may encourage researchers in linguistic field who would like to use the current phonological theories in analyzing the phonology of the language they are interested in.

1.8 Previous Studies

There are a considerable number of previous linguistic analyses in the areas of phonology, morphology and syntax of *Afan Oromo* language. The linguistic studies which are closely related to this study will briefly be revised in this sub-section of the introduction. The segmental phonology of different *Afan Oromo* dialects have been described by Wako (1981), Owens (1985), Kebede (1994), and Dejene (2010). Wako (1981) describes the phonology of *Afan Oromo* of Meccadialect in detail. In addition to segmental phonology, he discusses stress which is one of the suprasegmental features. He identified primary, secondary and weak syllables of the dialect he explored and represented the primary stress with acute and the secondary stress with

grave accent. He left the weak stress unmarked. According to him, there are three stress and or pitch patterns in Afan Oromo of Mecca dialect. These are:

Pattern 1: If a word ends in short vowel, the primary stress and a high pitch fall on the penultimate syllable and the secondary stress and low pitch on preceding syllable if there is any.

Examples: barbá:de ‘I or he wanted’

dé:me ‘I or he went’

galgála ‘evening’

Pattern II: If a word ends in a consonant or long vowel, the primary stress and a high pitch fall on the ultimate syllable and the secondary stress and low pitch on preceding syllable.

Examples: matá: ‘head’

de:mán ‘they went’

Part III: If a word is monosyllabic, the stress and high pitch fall on the syllable itself.

Examples: šán ‘five’

yó:m ‘when?’

Regarding the status of stress and pitch in Mecca dialect Afan Oromo, Wako (1981: 46) suggests that the grammatical meaning is changed when words are uttered with stress shift and pitch form. Thus, according to his argument, verbal adjective is signaled when a word is uttered with a primary stress and a high pitch on the ultimate and penultimate syllable and with a secondary stress and low pitch on any other syllable if any. He further claims that a non-finite verb is signaled if the word is uttered with a secondary stress and a low pitch on the penultimate syllable and a primary stress and high pitch on the ultimate syllable.

The imperative form is the other word group he emphasized. He says that the imperative is signaled if the word is uttered with a primary stress and a high pitch on the penultimate syllable

and a secondary stress and a low pitch on the ultimate syllable. He further notes, with regard to infinitives, that, “ ‘An infinitive verb form has a primary stress and a high pitch on the ultimate and penultimate syllable. If it is uttered with a secondary stress and a low pitch on a penultimate syllable, and a primary stress and a high pitch on ultimate, a question is signaled.’ ” (Waqo, 1981: 48). The following are some of the examples he cited for verbal adjectives, non- finite verbs, imperatives, and infinitives with question forms.

Verbal adjectives:		Non- verbal adjectives:	
dé:má:	‘one who goes’	de:má:	‘while going’
fí:gá:	‘runner’	fí:gá:	‘while running’
ráfá:	‘sleeper’	rafá:	‘while sleeping’
barbá:dá:	‘searcher’	barbá:dá:	‘while searching’
Infinitive:		Question:	
barbá:dú:	‘to look for’	barbadú:	‘shall I look for?’
gátú:	‘to throw’	gatú:	‘shall I throw?’
tá:ʔú:	‘to sit’	ta:ʔú:	‘ Shall I sit?’
káʔú:	‘to get up’	kaʔú:	‘shall I get up?’
Imperative (2p): dé:ma ‘you go’ fí:ga ‘you run’ barbá:da ‘you search’			

Wako (1981:44) claims that stress and pitch are inseparable in Mecca dialect. He suggests that stress and pitch are phonetic in the sense that they are predictable from their pattern of occurrence determined by phonological environment.

Owens (1985) describes the grammar of Harar dialect Afan Oromo. The study describes the grammar of the Harar dialect in detail. It summarizes the grammar of the language emphasizing the noun and noun clauses. The items occur in Afan Oromo noun phrases and the sequences of their inflectional phrases are described in this study. The study also mentions a number of noun phrase structures. Furthermore, the study explains the different case forms and functions.

Kebede (1994) studied the phonology of Baate (Wollo) dialect Afan Oromo. He discussed the process of palatalization in the phonology of Oromo using the theory of Autosegmental Phonology. He suggests that Oromo phonemes n, l, d, t, t' and s are palatalized in the environment of underlying high front vowel /i/ or palatal semi-vowel /y/ that may or may not directly appear on the surface. He used feature geometry model in discussing the palatalization of Oromo phonology.

Another work worth mentioning is Dejene (2010). It deals with the description of the phonology of Kamise dialect. The work gives insight into phonological aspects, such as phoneme inventory, the phonological process, and aspects of suprasegmental features. The phonological processes section overviews assimilation, length dissimilation, deletion, vowel rising, and vowel lowering etc, briefly. The suprasegmental aspect discusses stress, tone and intonation. This research refutes the previous findings which claim that the *Afan Oromo* is tonal.

There are two studies that are based on lengthening. Abera (1988) and Lloret (1988) have dealt with segment lengthening in Oromo. Abera (1988) in his study entitled 'Long Vowels' discusses on the sound system of the language. He emphasized long vowels in the language and provides a systematic account of long vowels in Oromo language. Lloret (1988) is a PhD dissertation that discusses the morphophonology of *Afan Oromo*. It emphasizes the gemination and vowel length in Oromo of Mecca dialect. It also identifies both lexical and grammatical tone. The study appears to be the first to identify lexical tone. Lloret (1988: 27) says '... I have also found a few cases where tone alone distinguishes individual words and morphemes.'

eg. gógáa (adj.) 'cruel'
gogáa (n) 'skin'

hín ('focus verbal prefix') hínráfa 'he sleeps' focus
hin (negative verbal prefix) hinráfu 'he doesn't sleep'

Considering the above examples as the fundamental principle, Lloret (1988: 28) claims that tone in Oromo has phonemic status because it distinguishes different words and morphemes as well as

different grammatical relationships.

Habte (2003) has described and analyzed tonal phenomena in Oromo. He analyzed tone in *Afan Oromo* using Autosegmental Phonology. His study is based on the Mecca dialect particularly the dialect which is spoken in Jimma, Nedjo and Ambo areas. He identified tone as an important phonological phenomenon in *Afan Oromo*. He argues that tone, which functions inseparably from stress in the language, distinguishes the meanings of lexical items and signals some grammatical functions.

There are some works which need further investigation regarding the tone system of *Afan Oromo*. Sasse (1981: 205) claims that almost all Cushitic languages are tone languages and Cushitic tone is determined primarily morpho-syntactically. Even though *Afan Oromo* is a Cushitic language, there is some controversy over whether Oromo is a tone (Andrzejewski 1957, 1970; Lloret 1988; Habte 2003) or a pitch-accent type (Banti 1988; Campbell and King 2013). Tone has been identified to have been part of Oromo phonology since the early work of Andrzejewski (1957, 1970). The studies describe a number of tonal patterns for Borana Oromo. According to these studies, the dialect is a tonal language with grammatical, though not lexical tone. Following these studies, the tone of the language is fairly described by other researchers. The grammatical function of tone in Oromo has been discussed by Gragg (1976), Owens (1980, 1982, 1985), Wako (1981). Gragg (1976) proposes that high tone is limited to only one syllable in a word. Owens (1980, 1985) states that there are no lexical minimal pairs distinguished by tone alone in Harar Oromo. According to him, the Harar Oromo, like Brana Oromo, has a tone system which consists of three main parts. All nominals have a basic tone and this can be identified as basic tone on the penultimate vowel of the word. Wako (1981) describes the stress placement of Mecca dialect *Afan Oromo*. He claims that there are primary, secondary and weak syllables in the dialect he studied. He mentions that high tone is limited to syllables with primary stress. He categorizes the stress and pitch patterns into three and shows the grammatical status of stress and pitch.

Lloret (1988) was the first work that identifies both the lexical and grammatical tone of Oromo of Mecca dialect. It is based on the non-linear approach that emphasizes phonological weight as

presented in Hyman (1985: 432) because, according to the study, it permits the autosegmental expression of significant differences between the segments according to their quantity or weight. The paper presents that phonetically *Afan Oromo* contrasts (H) and Low (L) tones, and different stress levels. Lloret (1988: 23) suggests that words in isolation for example, nouns in the base form, have primary stress on the penultimate syllable. Each root, according to the study, has its own tone specification and verbal stress need not be specified for tone class because they acquire tone by the tense/mode affixes that are added to them. The example cited for this fact is singular affirmative imperative. The singular affirmative imperative has a high tone on the first syllable (eg. ráfi ‘sleep’) while the negative has a high tone on the last two syllables (eg. hin rafíní ‘don’t sleep’).

The tone of nouns and adjectives is predictable to a great extent from grammatical class and segmental shape, for instance, the penultimate syllable of bi syllabic nouns in the basic form generally bears high tone if the final vowel is short, but low tone if the final vowel is long. In any case the final vowel always carries a high tone (Lloret, 1988: 24). Lloret confirms that the generalization about tone assignment on the nominal is a piece of evidence for treating (C) V (C) syllables as light and (C) VV (C) syllables as heavy in *Afan Oromo*. According to her, tone might still be claimed to distinguish different grammatical relationships instead of different individual lexical items and thus functions (more or less) as stress does in languages such as Spanish and English.

eg. kurrúufaa ‘he snores’ kurrúufáa ‘snoring’.

Following the footsteps of Lloret (1988), Habte (2003) analyzed the tone of Oromo of Mecca dialect for, according to his idea, the way tone functions in the language has not been adequately examined and there is also inconsistency in describing the tone of the language. He argues that for Andrzejewski (1970), Owens (1985) and Lloret (1988) tone functions as an independent phonological element in Oromo. But researchers like Wako (1981) say that tone and stress function inseparably in the language and thus should be described in unison. Banti (1988) considers *Afan Oromo* a pitch-accent language in his article entitled “Two Cushitic systems: Somali and Oromo Nouns”. The paper compares a set of tonal behavior of the case morphology

of nouns in Somali and Arsi Oromo. Banti assumes autosegmental theory of the form described in Clements and Goldsmith (1984b). He analyses the tone distinctions as accent feeding tone: the underlying accent is realized in the absolute on the ultimate or penultimate mora, while the genitive is characterized by an accentual pattern of ultimate accent and the nominative has a number of allomorphs involving adding an (empty) mora to the end. According to him, the language has simple tone rules which involve the two tone melodies H* and HL*. He says that tones in the language associate freely rightwards.

Clamons (1988: 16-20) has described tone patterns in Oromo. She has classified the pitch pattern of the basic forms of Arussi dialect Oromo noun into six. The following are the tonal melodies of the nouns in the basic forms she treated with examples.

1. Two syllable nouns with low pitch for both syllables, such as: farsoo [_ _] ‘alcohol’ and buna [_ _] ‘coffee.’
2. Two syllable nouns with low pitch for first syllable and high pitch for second syllable; garbuu [_ –] ‘barely’ and harka [_ –] ‘hand’ .
3. Three syllables nouns with the second high pitched syllable. These are for example, kinniisa [_ – _] ‘honey bee’ and rifeensa [_ – _] ‘hair’.
4. Three syllables nouns where the second syllable is higher than the first, the third syllable is higher than the second; hababoo [_ – ^] ‘flower’, hangasuu [_ – ^] ‘lightening’
5. The four syllable nouns with the high pitch on penultimate syllable, for example, mukukkula [_ _ – _] ‘glow’
6. The four syllable nouns where the final syllable has the highest pitch, the penult is the next highest pitched and the preceding syllables have lower and equal pitches. For example, oboleettii [_ _ – ^] ‘sister’.

Furthermore, she analyzed the tone patterns of Oromo metrically. After she discussed on how tone is treated in metrical approach, she proposed that several issues relevant to an understanding of tone patterning in Oromo and other tone languages is unresolved. She emphasizes the need for the investigation of tone patterning of other areas of the Arussi grammar. She also calls attention to the inadequate investigation of the relationship of stress to tone and other aspects of Oromo

phonology (Clamons, 1988: 51). The researcher uses metrical approach to the theory of pitch-accent (see chapter five) for it better fits the analysis of pitch-accent system in ABAO.

Dejene (2010) highlights that the tonal analysis of the language by Habte (2003) is inappropriate. He argues that his study does not reveal examples to the tonal language because some of the elements compared to indicate the pitch variation that change the meaning are not words, but rather words and sentences. Regarding the reason for researchers to decide that *Afan Oromo* is a tonal language, Dejene (2010) , states that ‘The misleading situation in different studies of the claim that Oromo is a tonal language, stems from the fact that words in the language are pronounced with audible pitch differences which is less subtle to analyze as tone.’ I also agree with his idea. He concludes that Kamise Oromo is not tonal and tone in Oromo should be further experimentally investigated in Oromo in general to properly describe the grammar of the language.

Campbell and King (2013: 1295) argue that Oromo is a pitch-accent language for normal and high pitches that are identified in the language are not phonemic. They further explain that pitch is unpredictable and closely associated with stressed syllables.

This research differs from the earlier studies on Afan Oromo in general and ABAO in particular in that it is based on three main theoretical approaches to non-linear phonology. It covers the segmental and suprasegmental phonology of the language. The phonological processes manifested in the language are discussed in depth and represented with the appropriate phonological theory. Furthermore, the pitch-accent of the language is discussed in a wider domain (nouns, verbs, adjectives and pronouns) than earlier works. The research also presents the metrical analysis of the pitch-accent of the language which, in some circumstances, differs in domain and content from Clamons (1988) MA study on the Arussi Oromo. The difference might have occurred, as she herself suspected (Clamons, 1988: 7) and states Owens (1985) idea that underlines the use of single speaker for investigation has certain strengths and weaknesses. Thus, as the present research is based on the data collected from three native speakers of ABAO dialect, it is claimed that it has better result. The research appears with the contribution of the phonological processes, pitch-accent and stress with representations of non-linear phonology.

1.9 Scope of the Study

The study is based on the ABAO which is spoken in Arsi and Bale zones of Oromia region of Ethiopia. The researcher preferred to limit his study area more preferably to this dialect because it is not well emphasized by linguists so far. The researcher has also limited his focus on the morphophonological descriptions and their representations in phonological theories for the works done so far on the dialect in relation to phonological description are limited in number and they are not comprehensive in their content. In this thesis, the researcher has attempted to provide in-depth descriptions of some morphophonological processes manifested in the ABAO and represent with the appropriate phonological theory. Furthermore, he discusses the pitch-accent system of nouns, verbs, adjectives and pronouns in the language. The researcher also presents the metrical analysis of the pitch-accent of the language.

1.10 Method

A blend of primary data, secondary data and my personal second language speaker intuition were relied on this work. Most of the secondary data are drawn from Lloret (1988) and Owens (1985). The study is basically based on the fieldwork in Arsi. The data were gathered from three native speakers of ABAO who were born in Arsi zone of Oromia regional state in Ethiopia. They were of different ages and sexes. They have good intuitions about their language, and they like talking about it.

The two consultants were males and one was female. Two of them were students in Assela Teachers Training Institute in 2012 while one is working in the information communication office at one of the Woredas (districts) in Arsi zone administration in Ethiopia. The researcher chose the three speakers of ABAO based on their command of the language and exposure to the culture of the people that speak the language. All of them lived and learned in Arsi where the language is spoken well. Their age varies from 25-45. Two of them are in their late 20s while one is in his late 40s.

The data for the study were gathered in two different phases: From December to March 2012 the main corpus data from Bonsa Tujii and Ganno Adam in Arsi, Assela. Intensive field research was also conducted with Ato Mohammad Rabo for one month in Arsi Zone, Huruta town in

2013. The researcher needed two phases for data collection to check the previously collected data during phase I, fill the gap, and collect new information.

For the primary data, I elicited data with some 500 words (see Appendix I) and stories as well (see Appendix II) in Arsi zone through interviews with two male and one female native speaker informants whose age varies from young to late fifties. The research assistants were made to repeat the words and sentences several times in different order and the elicitation were recorded using a Sony cassette audio recorder. Some stories were also recorded for analysis. Furthermore, stories collected from Assassa, Goba town of Bale regional state of Ethiopia, in 1997 by the Oromia Educational Bureau and British Council were also included in the corpus. Then, the previously collected data were checked to fill the gap and add new information to the study with Ato Mohammed Rabo. I then transcribed the recorded data using my second language instinctive knowledge consulting the informants where there was need for clarification and verification. I then extracted the relevant data and used it for the analysis.

1.11 Theoretical Frameworks

This study is geared towards using one of the an eclectic approach in representing the phonology of Arsi-Bale dialect of *Afan Oromo* i.e. Non-Linear phonology, particularly, Autosegmental, Metrical and CV Phonology. Thus, we shall briefly discuss the essence of the theories in the following sub-section.

1.11.1 Autosegmental Theory

In studies earlier than the introduction of the multi - dimensional representation of phonological phenomena, phonological representations that consist of linear strings of segments without any hierarchical organization were put into effect in the studies. But later, the more elaborate and logical way of handling the phenomena; the existence and use of hierarchy for prosodic phenomena was proposed. Regarding the presence and importance of hierarchy of suprasegmentals, Katamba (1989: 164) says, ‘in many languages, higher prosodic phenomena like stress, nasalization, and quantity (length) can only be insight-fully described in terms of the syllable because often, in order to determine whether a given rule is applicable, the number of syllables in a word has to be counted.’

The linear representation of phonological phenomena exhibits inadequacy in handling all the sound system of the language. The assumption of the classical theory and its inadequacy is discussed by Anderson (1985: 4). He explains that the classical theory had assumed that phonological (and phonetic) representations were given in the form of a simple matrix, where each row represented a phonological distinctive feature and the columns represented successive segments. Such a representation is based on the assumption that there is a one-to-one relation between the specifications for any given feature and those for all other features. Tonal phenomena, however, made it clear that features need not be synchronized in this way: a given feature specification might take as its scope either more or less than a single segment.

The inadequacy of handling all phonological phenomena led scholars to search for the development of ‘autosegmental’ representations, in which feature specifications were linked by lines of association (subject to specific constraints) rather than all being aligned into segments. In the early 1970s, attempts to describe the phonology of tonal systems led to important changes in assumptions about representations, and a concurrent shift of attention on the part of phonologists (Anderson 1985: 4). It was Goldsmith (1976) who came up with an alternative method called *Autosegmental Phonology* which solves the inadequacy by putting into effect a multi-dimensional representation of tone. In his PhD dissertation entitled ‘Autosegmental Phonology’, Goldsmith clearly puts the inadequacy of Generative Phonology. He says, ‘It is an interesting realization that the formalism of generative phonology is insufficient, and that a multi-linear geometry is needed to deal with what have traditionally been called “suprasegmentals” (Goldsmith, 1976: 165). He explicitly states that: ‘the only system capable of merging two lexical (Phonological) entries into one simultaneous utterance is autosegmental phonology’ (Ibid: 37).

After it was introduced by Goldsmith, *Autosegmental Phonology* was further practiced by other researchers, such as Clements (1976), McCarthy (1979, 1981), and Harris (1983). In subsequent period, most of the concepts or tools of the *Autosegmental Phonology* have become standard equipment in *Generative Phonology*. The basic premise of *Autosegmental Phonology* is that each natural language consists of a very small number of simultaneous abstract systems, each one comprised of a finite inventory of universal, binary valued variables and constrained by a set of

universal principles. Even though *Autosegmental Phonology* was first developed in order to account for cross-linguistic regularities in the distribution and function of the tone, it has been extended in order to handle a number of other features besides tone. ‘The extension of this insight to other phenomena, and its consolidation, essentially displaced the earlier concerns of rule notation and ordering in phonologists’ attention’ (Anderson, 1985: 4). In this thesis, pitch-accent system of ABAO will be handled by Autosegmental phonology. Assimilation will also be handled by Feature Geometry which is branched from Autosegmental phonology.

The domain difference among suprasegmental features was also discussed by researchers. They did this so that the representation of prosodic features in phonology becomes easy to perceive. For example, researchers in the field of linguistics tried to indicate the difference between tone and stress. Wako (1981) and Raymond (2006) suggest that the function of tone and stress differ. Thus, they should be discussed separately.

1.11.2 Metrical Theory

A similar development to autosegmental phonology, that preaches the hierarchical nature of elements, which took place in the analysis of stress and the study of the syllable, is *Metrical Phonology*. *Metrical theory* arose during the late seventies as part of non-linear phonology, the research program of which autosegmental phonology is the other main branch (Kager, 1995: 368). According to Robert (2005: 128) linguists who attempted to understand phonological processes within the new system of generative grammar asked what the basic unit of sound was. He says that the problem occurred when linguists attempted to account for tone languages, pitch languages, intonational phrases in language, tri-syllabic root languages, and stress patterns. At this time, they began to realize that generative phonology could be characterized by a preoccupation with the rule system and that other kinds of phonological information merited equal discussion (Robert, 2005: 128).

Kahn (1976: 68) broke with the tradition by arguing for the importance of syllable structure in phonology and how syllables were important for an adequate description of English phonology. *Metrical phonology* was introduced as a hierarchical theory of stress because the analysis of stress in Chomsky & Halle (1968) simply treated stress as one more phonological

feature. It can be considered a sort of sister theory to autosegmental theory for it shared with its Autosegmental counterpart the goal of developing alternatives to non-local devices of linear theory, such as rule variables and abbreviatory conventions (Kager, 1995: 368). Metrical phonology passed through certain development in the earlier years of phonological studies. The theory was founded by Liberman (1975), and elaborated on by Liberman and Prince (1977) and Halle and Vergnaud (1978). From the beginning, word stress has been the central empirical domain of metrical phonology, although the theory has also been applied to non-stress phenomena such as vowel harmony and syllable structure. Nowadays the approach covers the whole domain of syllable structure and phonological boundaries.

The theory was primarily developed by Liberman and Prince (1977) to provide a basis for a simpler analysis of English stress. They proposed to account for English stress in terms of a hierarchical structure. Metrical phonology is a phonological theory concerned with organizing segments into groups of relative prominence. Segments are organized into syllables, syllables into metrical feet, feet into phonological words, and words into larger units. Based on the earlier suggestions, Hayes (1980: 85) proposes a set of parameters within which stress systems are to be accounted. These quasi-independent parameters are assumed to determine the stress patterns that appear to exist in natural languages. The choices are:

- Quantity-sensitive vs. quantity-insensitive languages
- Bounded vs. unbounded stress
- Right-dominant-foot vs. left-dominant-foot languages
- Left-to-right vs. right-to-left word-stress assignment

The two most important dichotomies, according to Hayes (1981) and Goldsmith (1990), concern whether a stress system builds quantity sensitive feet or quantity insensitive feet and whether the system builds bounded feet or unbounded feet. They argue that a stress system builds quantity sensitive feet if foot construction has to make reference to the internal structure of syllables or to the segment features of the nucleus. For example, foot construction which proceeds on the basis of the distinction between light and heavy syllables results in the formation of quantity sensitive

feet. In a quantity insensitive stress system, on the other hand, feet are constructed irrespective of the internal structure of the syllable.

Stress systems, in which there is a limited number of syllables, which may be grouped into a foot node, one strong, one weak, are bounded feet while unbounded feet, on the other hand, have no limit to the number of syllables which may be grouped into a foot. Thus, “bounded” vs. “unbounded” is a concept that applies to the number of subordinate units that can be dominated by a higher node. In Hayes’ system a bounded foot consists of a maximum of two syllables, referred to as a binary foot. This implies that bounded-stress languages have binary feet. It also implies that bounded-stress languages have the word stress close to the (left or right) word-boundary.

Sometimes the rules do not lead to the stress pattern that the words have in reality. It was found that the result is arrived at by making the final consonant or final syllable of some words “transparent” to the rules. Goldsmith (1990) suggests that the marginal syllable which is not affected by stress rule is analyzed as an extrametrical syllable and these monosyllabic feet are referred to as degenerate feet.

As it is discussed in previous sections, of this paper, some scholars fairly dealt with the stress in *Afan Oromo* of Mecca dialect using the tenets of the theory of linear phonology. The Arsi-Bale dialect *Afan Oromo* does not attract linguists and the theory of phonology is not employed to thoroughly show how stress is represented even in other *Afan Oromo* dialects. In the present study, thus, the theory of stress which is basically under non-linear phonology, namely: Metrical Phonology will be employed to represent the stress in Arsi-Bale dialect. This is because the researcher believes that stress can best be represented by the assumption of Metrical Phonology.

1.11.2.1 Forms of Metrical Theory

1.11.2.1.1 Metrical Trees

The development of metrical theory, since its emergence, has been on the basis of two distinct formalism, one using metrical trees (arboreal) and the other involving the metrical grids (Goldsmith 1990: 169). The metrical tree involves the establishment of constituent structure

(1)

(2)

In the grid, the lowest layer contains a series of ‘x’ s, one for each Mora in the string (the mora row or row 0) and is frequently called the syllable row. The next layer up, the layer that represents simple, or secondary stress, contains an x only above those syllables that are stressed, and in effect marks the head of feet; we will call this the foot row, or row 1. Finally, on the top level, the word row, or row 2, an x appears only above the syllable that receives the main stress of the word. The following English word from Goldsmith (1990: 191) illustrates the matter well.

(3)

		*		Word Row (Row 2)
*		*		Foot Row (Row 1)
*	*	*	*	Syllable Row (Row 0)
ge	ne	ra	tion	

1.11.2.1.3 Parametres of Grid Theory

There are four parameters of grid theory. The following is the explanation of each parameter by Goldsmith (1990), and Kager (1995). The first one is quantity sensitivity. According to them, Prince (1983) introduces a mora-based approach to quantity-sensitivity. The moraic representation consists also of marks organized in rows. In the grid, a light syllable is represented with one mark at the mora layer, a heavy syllable with two. The characteristic sonority decline between the moras of a heavy syllable, interpreted as falling prominence, is projected on the Foot layer by a rule called quantity sensitivity (QS).

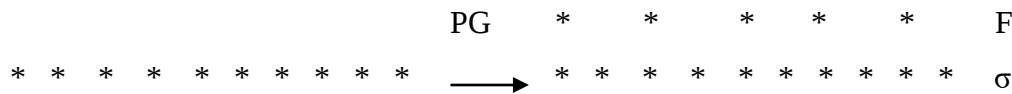
(4)



Grid theory marks heavy syllables as inherently stressed. In contrast, tree theory marks heavy syllables only if they are heads of feet and unfooted heavy syllables are stressless. The other parameter by Goldsmith (1990) and Kager (1995) is Perfect Grid. The best illustration of the rhythm - based nature of grid only is its treatment of iterative bounded systems by the rule of

perfect Grid. Perfect Grid (PG) provides the rhythmic basis of such systems by adding a Foot layer mark on top of every other syllable layer mark.

(5)



They say that Perfect Grid is governed by two parameters. Directionality fixes its starting point at the left or right edge. A starting parameter makes perfect Grid start either with rhythmic peak or with rhythmic trough. This generates the four basic quantity insensitive systems; Right-to Left; trough, Left-to Right; trough, Right-to Left; peak and Left-to Right; peak. Since Perfect Grid only fills out portions of the grid that have been left blank by the rule quantity-sensitivity, quantity and rhythm become separate notions. In contrast, tree theory integrates both into the concept of Foot.

The third parameter, which is proposed by Goldsmith and Kager, is the End Rule. According to them the End Rules place a mark on top of mark that is peripheral on the next layer down. A particular instance of End Rule must be specified for which row of the grid it applies to; we may say it is “parametarized” in that respect. When applying to the foot layer, or row, End Rule produces edge stresses, but its common function is to assign main stress at Word layer by promoting a Foot layer mark to word prominence. Dominance specifies whether to select the rightmost (ER(F)), or leftmost (ER(I)) landing site, which is to say, whether the leftmost or the rightmost stress has the greatest prominence in the word (Kager, 1995: 384).

(6)



The last parameter proposed by the scholars is unbounded systems. The analysis of unbounded systems, which is discussed well by Kager (1995), is based on two devices: Quantity Sensitivity

(7)



1.11.2.1.4 Similarities and differences between metrical tree and metrical grid

According to (Goldsmith 1990: 170), the two versions, metrical trees and metrical grids, share some ideas in common. These are:

1. The study of stress is different in kind from the study of other phonological studies.
2. Stress is fundamentally a study of the relative prominence of syllables and higher level units, such as foot.
3. Most important characteristics determining stress patterns are rhythm and sensitivity to inherent syllable or rhyme weight.
4. Stress representations are hierarchical. Both approaches to metrical theory have explored and utilized the notion of extrametricality as well.

The only difference between the two versions is thus, the precise formal way in which the hierarchical nature of stress is explored. The original insights of metrical phonology were expressed within arboreal (the one using trees) framework.

The notion of metrical grid, according to Goldsmith (1990: 192) differs from the metrical tree notation in at least two ways.

1. There is no notion of constituency involved in these metrical grids
2. It is better to capture a notion of stress-clash (where adjacent vowels are stressed).

Hence, representing stress using metrical grid seems to be more efficient than that of metrical tree. Lacy (2002: 1), citing Prince 1983, Everett and Everett 1984 Everett 1988, Hayes 1995, de Lacy 1997, Kenstowicz 1997, and Gorden 1999 as sources, claims that stress system in languages can be divided into two types: metrical and prominence driven. In metrical system, stress is attracted towards some age of a prosodic word and is only prevented appearing at that edge by foot-form restrictions. In contrast, prominent driven systems allow syllables with certain properties to override edge attraction, with stress attracted to syllables with high sonority nuclei, long vowels, onsets or any of a number of other properties. Tone, according to the researcher can also influence stress placement. Higher - toned syllables attract stress. This is evidenced in ABA0 language where the syllable with high pitch and the stress fall on the same syllable. The discussion is found in chapter five of the thesis.

In world languages, there is interaction between tone and stress. Scholars have discussed the interaction between these prosodic features. Downing (2004: 104), among others, for example, states that there are two main types of tone - stress interaction found in African languages. These are: either the position of High tone realization is conditioned by the position of the stressed syllable, or the position of main stress is conditioned by (High) tone. As one of the world languages, thus, it is possible to represent the tone and stress of *Afan Oromo*, particularly the Arsi-Bale dialect using Autosegmental and Metrical phonology and show the interaction between them.

1.12 CV Phonology

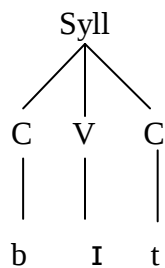
Phonological theory has witnessed a substantial change in the nature of its basic orientation. This change has been marked by the development of several new theoretical frameworks, which, according to some scholars and theorists, fall within the orbit of ‘nonlinear’ model of phonology. CV phonology, among these frameworks, comes into being as a result of refining and above all remodeling some of the ingredients, techniques and aspects for which the generative theory of phonology calls. Since 1968, generative phonology has been dominated by the basic assumptions made in Chomsky and Halle’s ‘The Sound Pattern of English.’; SPE.

A fundamental property of the SPE theory is the assumption that the deepest and the most interesting principles of universal grammar is found in the form and function of phonological rules. An example of this in SPE is the claim that disjunctive ordering relations between two adjacent rules are limited to cases where the structural description of the first rule properly contains that of the second (Anderson, 1985: 92). Against this conception of rule form and function, the CV model (like the other nonlinear ones) presents significant changes in dealing with phonological representations. Generally, CV phonology is viewed as “a model which adds a consonant (C) and vowel (V) tier to the syllabic and segment tier” (Crystal, 1997:101). Once added, the tier will remove the need for the feature [syllabic] at the skeletal tier, and consequently will give rise to the timing slots to be employed melodically.

In their attempt to show the contribution of the CV approach, Clark and Yallop (1995: 407) explicate that whenever the CV tier of C and V slots are postulated to be occupied by segments,

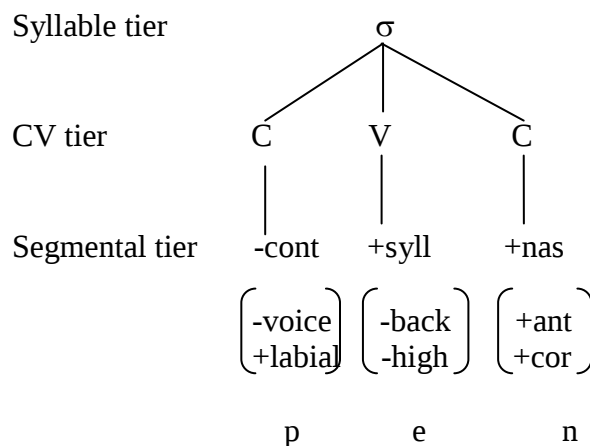
the segments can be mapped straightforwardly on these CV positions. Thus, these segments in question are to be fully articulated on a phonetic ground. Practically speaking, the CV tier is seen as an advantageous pattern according to which its own units have the ability to define a certain functional position (i.e. peak vs. non-peak) within the syllable. For instance, such a word as bit /bIt/ can be said to consist of a single closed syllable with the vowel (marked as V) constituting the peak of that syllable, and two consonants (marked as C) occupying the marginal positions within the syllable (Clements and Keyser, 1983: 10):

(10)



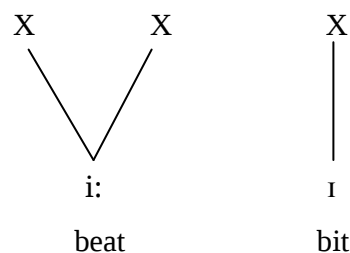
Katamba (1989: 156) argues that the CV theory is required to perform three main tasks: (i) stating universal principles in order to govern syllable structure, (ii) stating syllable structure typology and (iii) stating language-specific rules to map syllable template. On this principle, the syllable is assumed to have three tiered structures that consist of the syllable node (σ), a CV tier and a segmental tier: (the word pen is taken as an example in this connection).

(11)



More importantly, the CV tier is sometimes referred to as the skeleton tier. The rationale behind such an alternative term resides in that it is suggestive of its composition of a string of Cs and Vs. Moreover, it constitutes the baseline of the edifice of sound in language (Roca and Johnson, 1999:687). That the timing tier made up of Xs implies that they are units of phonological and abstract timing, and that they are not intended to represent actual measurements. This can be apparently illustrated via applying the following formalism to the contrast between long and short vowels in such pairs as beat /bi:t/ vs. bit /bɪt/.

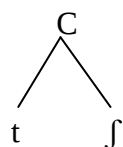
(12)



It has been argued that the timing tier is seemingly designed to uncover segment length. A short segment is usually associated with one timing unit, while a long one with two. On the other hand, there are some occasions in which a single timing unit can be associated with two values of a feature, viz. the case of affricates (Carr, 1993: 212).

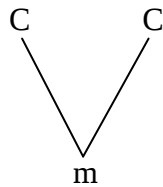
Autosegmental phonology allows one-to-many and many-to-one associations. By virtue of this provision for the two possible types of association, the dualistic behavior of geminates and complex segments can now be represented adequately. Given that affricates, as they start as [-continuant] and end as [+continuant], would be considered complex segments with more than one set of feat, it is possible to characterize them in terms of one-to-many association between a single element of the CV tier and a sequence of two elements on the segmental tier. Hence, the ABAO affricate sound /tʃ/ can be represented as follows:

(13)



The representation of gemination on CV phonology is that of many - to -one association between the CV-tier and the segmental tier, where two C or V slots on the CV tier are linked to a single melody on the segmental tier. This can be schematized as:

(14)



The theory used in the analysis of the ABAO syllable structure is the Generative CV Phonology Model of the syllable as propounded by Clements and Keyser (1983). They have designed the generative CV phonology model to specifically deal with the syllable. This theory is useful because it accomplishes the task of stating universal principles governing syllable structure of ABAO in our case. In this dissertation, compensatory lengthening, epenthesis, vowel harmony, dissimilation and reduplication will be handled by the CV model.

1.13 Summary of chapter one

In this chapter, we have sought to ground the basis of this study. We started by describing the demography, sociology and ethno-linguistic profile of the people under review and the dialect variation the language under the study. Furthermore the motivations for undertaking the research is presented in the unit briefly. The questions that guided the research with the purpose of the study is put in succession alongside the importance. The chapter also discusses relevant previous studies on the language. The methodology that is adopted for the study and the theories that underpin the study: Autosegmental, Metrical and CV Phonology are also explicated in this chapter.

As it is discussed in the theoretical frameworks sections, the progress in Autosegmental, Metrical and CV Phonology owed much to their 'problem-solving efficiency, i.e. their success in finding solutions for previously unsolved representational problems, and integrating them into a consistent, over-all theoretical framework. There are scholars in the field of linguistics who give priority to representation of phonological phenomena rather than the regulation or principle governing the procedure within the phonological processes. For example, McCarthy, cited in

Alemayehu (1991: 5), states that “primary place should be placed on studying phonological representations rather than rules”. Based on McCarthy’s idea forwarded for consideration, Alemayehu (1991: 5) suggests “It is not enough to identify assimilation or any other process or rules exist in a language. The process or the rule must also be adequately described using a certain module or theory.”

Considering the above idea as a point of reference against which the phonology of a language can be assessed, this thesis tries to show the morphophonemic phenomena in Arsi-Bale *Afan Oromo*. It attempts to represent the phonology of the language by adopting the non-linear model of phonology, namely Autosegmental, Metrical phonology and CV phonology, as outlined by Goldsmith (1976 and 1990) for the first two theories and Clements and Keyser (1983) for the third theory. Even though Autosegmental phonology was initially developed in response to the challenge of developing an adequate theory of tone, it further extended to treat other morphophonemic processes, such as vowel, nasal and consonant harmony. It is also addressed that all phonological features can be arrayed on separate autosegmental tiers. Stress is the prosodic feature within the phonological domain that can easily be represented by the metrical grid to account for the stress patterns of certain language. Considering the significance of recent phonological theories, the researcher’s intention is to assess the morphophonemic phenomena of the aforementioned dialect *Afan Oromo* employing Autosegmental, Metrical and CV Phonology for the theories have the potential to handle all the processes in the phonology of a language under question.

CHAPTER TWO

THE ARSI-BALE AFAN OROMO SOUND SYSTEM

2.0 Introduction

This chapter of the study entails a detailed description of the sound systems of ABAO. The description will be carried out within the larger “generative phonological framework” drawing on the distinctive feature theory of Katamba (1989), Durand (1990), and Oyade (2008). Preliminary statements and structures about the structure of syllables in ABAO is also discussed in the chapter.

The significance of knowledge of the sounds is emphasized by Ladefoged (2003: 1). He states “without the knowledge of the sounds, one cannot describe the phonology of a language”. This chapter therefore, deals with the inventory of ABAO consonant and vowel phonemes. It also outlines the distinctive features of the sounds since phonological processes are phonetically motivated based on articulatory and auditory systems; phonemic inventory is treated with the feature specification of each phoneme briefly to provide sufficient background for the presentation of the phonological system.

In discussing the phonemes, some basic ideas related to non-linear phonology are discussed to accomplish the goal of the study. The transcription follows the IPA conventions as revised to 2005. Data in the subsequent sections are given in a phonemic transcription. Length and gemination are written as double letters. Thus, *aa*, *ee*, etc. stand for long vowels and *bb*, *nn*, etc. for geminated consonants. Acute accent (´) represents high tone, grave accent (`) indicates low tone. The accent marker is put above one vowel if the vowel that attracts accent is a long vowel; *áa*, *ée* etc. The chapter then discusses the syllable and syllable types in ABAO as well as their combination in words.

2.1 Consonant phonemes

The Arsi-Bale Afan Oromo dialect has 24 consonant phonemes. The consonant inventory of the dialect is shown in Table 1 below where voiceless segments are shown on the left and voiced segments on the right of each column if there is a voicing variety. /p/, /v/, /z/ and /ʒ/ are marginal in that they appear only in loan words. For example, /p/ is found in the word ‘pasta’ (*paastaa*); /v/

and /z/ are found in the word ‘television’ (teleeviziinii); /z/ is found in the word ‘waziiza’ ‘fire place’ (borrowed from Arabic). Monolingual speakers of ABAO use their own sounds in place of the aforementioned sounds that are found in loan words. They replace /f/ or /b/ in place of /p/; /s/ in place of /z/; /b/ in place of /v/; and /ʃ/ in place of /ʒ/. Examples: police [foolisii] or [boolisii], zebra [seebraa], very good [beerii gud] and treasure [treeʃara]. If known loan words are excluded, the resulting set of contrastive consonantal units is found in the Table 1 below. The consonant inventory shown in the table below lacks the voiceless labial /p/, but has its ejective counterpart /pʰ/. The absence of a voiceless explosive *p* is common in Cushitic and can be observed, among others, in Beja, Agaw, Sidamo, Gedeo, Somali, and Rendille (Mous, 2004a). In addition, ABAO, like other Afan Oromo dialects, has a full range of ejective stops and an alveolar implosive sound.

Consonant phonemes			Labial		Coronal			Dorsal		Laryngeal	
			Voiceless	Voiced	Voiceless	Voiced	Voiced	Voiceless	Voiced	Voiceless	Voiced
Obstruents	Pulmonic	Stops		b	t		d	k	g	ʔ	
		Fricatives	f		s, ʃ					h	
		Affricates			tʃ		dʒ				
	Glottalic	Stops	pʰ		tʰ	dʰ		kʰ			
		Affricate			tʃʰ						
Sonorants	Nasals			m			n, ɲ				
	Liquids	Lateral					l				
		Trill					r				
	Glides			w			j				

Table 1: Consonant phonemes of Arsi-Bale Afan Oromo

The consonant phoneme includes: bilabials b, f, pʰ, m, w; coronals t, d, dʰ, s, ʃ, tʃ, dʒ, dʰ, tʰ, tʃʰ, n, ɲ, l, r, j; dorsals k, g, kʰ and laryngeals ʔ and h. According to Lloret (1988), Oromo is a language known for its common feature of gemination. This is also observed in ABAO. Like

long vowels, ABAO geminates have phonemic value and, minimal pairs are the result of the middle consonant being single in the first and geminate in the second set of words. The following are the examples taken from Teferi (2015: 51) which are identical to ABAO words that differ in the quality of their second consonants.

(15)	[samuu]	‘to rob’	[sammuu]	‘brain’
	[sodaa]	‘fright’	[soddaa]	‘in-law’
	[roobii]	‘Wednesday’	[roobbii]	‘hippopotamus’
	[hatuu]	‘to steal’	[hattuu]	‘thief’
	[badaa]	‘run away’	[baddaa]	‘Highland’

In ABAO, all consonants except the laryngeal sound /h/ occur geminates (length is distinctive and found in all consonants except /h/) and their occurrence is only in medial position. Examples of consonants that occur geminates can be found in (16) below.

(16)

(a)	guddáa	‘big’
(b)	d’íbba	‘hundred’
(c)	k’óttöo	‘axe’
(d)	fakkéena	‘example’
(e)	lagggéen	‘rivers’
(f)	ʔafféellaa	‘cook’
(g)	ʔéessa	‘where?’
(h)	ʔaff’amáa	‘hello!’
(i)	gaatʃfána	‘shield’
(j)	dʒidʒírraa	‘transfer’
(k)	háp’p’ee	‘glue’
(l)	mudd’íi	‘waist’
(m)	k’a’t’t’aamúra	‘cross’
(n)	húʃ’ʃ’uu	‘cloth’
(o)	d’ík’k’oo	‘little’
(p)	k’urt’ummíi	‘fish’
(q)	géenna	‘we reach’
(r)	fupɲáan	‘nose’

(s) hilléensa	‘rabbit’
(t) ?arrii	‘grey hair’
(u) hawwii	‘hope’
(v) hijjéessa	‘poor’
(w) ?ó??a	‘heat’

Citing (Pierrehumbert & Talkin, 1992; Dilley et al., 1996), Garellek (2013) states that most languages tend to ‘insert’ glottal stops before vowel-initial words, at least in strong prosodic positions. He argues that glottal stops are so common word initially because laryngealization occurs on word-initial vowels, to enhance prominence by boosting high-frequency energy. But in especially strong positions, e.g. phrase initially, this laryngealization is strengthened to [ʔ]. Glottal stops before word-initial vowels are often optional in a language, though for some languages they are obligatory (Hayes, 2009). Taking this idea in to account, we suggest that the glottal stop /ʔ/ in ABAO generally occurs as onsets of vowel-initial stressed syllables. The glottal stop in ABAO language also has an important phonological function in separating two consecutive vowels which are either qualitatively different because of length or due to other phonetical features. This particular phonological behavior helps to explain why diphthongs or sequences of qualitatively different short or long vowels, or sequences of two long vowels are not permitted. Teferi (2015: 40) emphasizes that this phonological function of the Oromo glottal stop seems to have been neglected by Bender, et al. in their work ‘Language in Ethiopia’, (1976), when they wrongly stated that sequences of non-identical vowels could occur in Oromo and listed examples which included *fe:u* ‘to saddle’; *mariu* ‘to advise’; and *jia* ‘moon’. (without insertion of glottal top). However, Teferi (ibid) suggests that there is a glottal stop between each of these so called sequences of non-identical vowels and the words would have been written as *fe’u* [feʔu], *mari’u* [mariʔu], and *ji’a* [jiʔa], respectively.

We also accept this idea for practically we found the insertion of glottal stops between two consecutive vowels that differ in quality. The glottal stop is sometimes appears in free variation with the glottal fricative sound /h/ as in [ʔeejjáma] and [heejjáma] ‘permission’ ; [ʔimímse] and [himímse] ‘neighed’ ; [ʔurgúfe] and [hurgúfe] ‘he shook’. The glottal stop is also realised as the free variation of the implosive /d/ when immediately following /l/ as in [faldána]=[falʔana] ‘spoon’ and [waldána]=[walʔaana] ‘look after’. All phonemes, except the ejective [p’], occur

word initially and all phonemes without exception occur word medially. From the 24 consonant phonemes of ABAO, only 8 of them occur in words. final position. These include the plain stops t, d; the fricatives f, s, and the sonorants m, n, l and r where most of them are alveolars. Their distribution is exemplified in Table 2 below.

	Phneme	Initial position	Medial position	Final position
Labials	b	bólʔoo 'well'	subii 'early'	-----
	f	fárda 'horse'	dáfk'a 'sweat'	máaf 'why?'
	p'	-----	háp'p'ee 'glue'	-----
	m	maatii 'family'	lammii 'nationality'	jóom 'when?'
	w	waatii 'calves'	hiwwii 'desire'	-----
Coronals	t	téessoo 'seat'	k'ótuu 'to plough'	sáddéet 'eight'
	d	dúrba 'girl'	mádda 'stream'	gád 'under'
	s	sómba 'lung'	hasáasa 'talk'	ʔás 'here'
	ʃ	ʃakkii 'doubt'	ʔajǎboo 'salt'	-----
	ʧ	ʧaapáa 'stamp'	maʧʧii 'intoxication'	-----
	dʒ	dʒabáa 'strong'	ʔadʒáa 'nasty'	-----
	d'	dára 'evil adj.'	háada 'mother'	-----
	t'	t'ík'k'oo 'small'	k'ut'usuu 'younger'	-----
	ʧ'	ʧ'abáa 'broken'	bóʧ'uu 'to crave'	-----
	n	niitii 'wife'	bóna 'summer'	fóon 'meat'
	ɲ	ɲáata 'food'	sajɲii 'seed'	-----
	l	labóobaa 'wing'	baláa 'danger'	ʔól 'up'
	r	róoba 'rain'	karáa 'way'	bór 'tomorrow'
	j	joosúma 'immediately'	hijjéessa 'poor'	-----
Dorsals	k	kalláʧʧa 'forehead'	fakkii 'example'	-----
	g	gammáʧʧuu 'happiness'	ʔergáa 'message'	-----
	k'	k'ull áa 'bare'	sók'uu 'to search'	-----
Laryngeals	ʔ	ʔamma 'now'	ʔóʔʔa 'heat'	-----
	h	hooláa 'sheep'	d'ihéessuu 'to provide'	-----

Table 2 : Distribution of consonant phonemes in Arsi-Bale Afan Oromo

2.2 Vowel phonemes

The vowel system of ABAO is relatively simple. It has the typical Eastern Cushitic set of five short and five long vowels (cf. Owens, 1985 for Harar, and Lloret, 1997 for Mecca dialects among others). Each vowel can be long, with the same set of features as short vowels. There are no diphthongs.

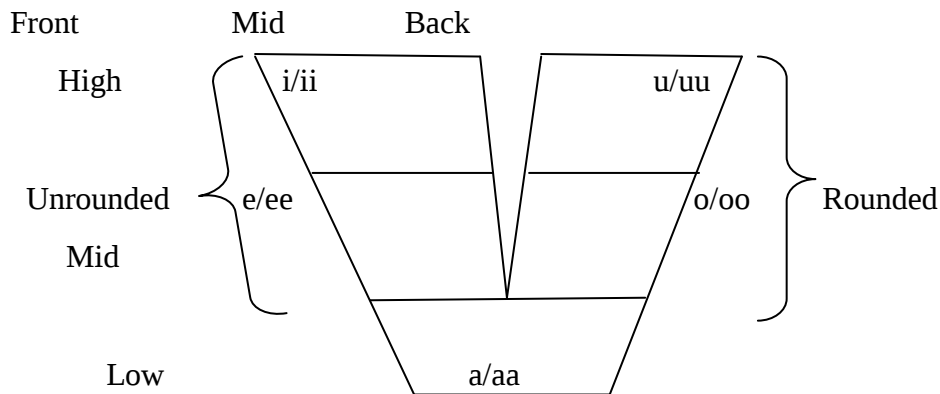


Table 3: Vowel phonemes of Arsi-Bale Afan Oromo

The vowel inventory consists of a high front vowel [i], a high back vowel [u], a mid-front vowel [e], a mid-back rounded vowel [o], and a central low vowel [a]. The vowels show symmetrical pattern; the vowels ii, uu, ee, oo, and aa are phonetically long. On the other hand, the phonemes i, u, e, o, and a are phonetically short. According to Oyebade (2008) long vowels are articulated with a tongue body involving a greater of constriction than that found in their lax counterparts. The key difference between short and long vowel is long vowels are longer than the short vowels of the same height when compared to each other. All vowels in ABAO may appear in either stressed or unstressed syllables.

As stated above, every vowel can be realized as both short and long vowel, which is indicated by two identical vowels. The height and part of the tongue is the main basis to contrast the vowels. The lip rounding is also important to describe the vowels in the language. We show the phonemic status of vowel length by providing minimal pairs for short vowels and their corresponding long vowels in (7) below.

(17)

ḏiibbaa	‘push’	ḏiḥba	‘hundred’
ḏúma	‘end’	ḏúumaa	‘nature’
ʔegáa	‘then’	ʔéegaa	‘watch! pl.’
bóna	‘summer’	bóonaa	‘proud’
láfa	‘ground’	láafaa	‘soft’

No word begins with vowel in ABAO, but all the vowels of the dialect, including their long counterparts, occur in medial and final position of a word.

2.3 Phonetic description of Arsi-Bale Afan Oromo Sounds

This section discusses the inherent properties of ABAO sounds and groups them into natural classes in consonance with the Distinctive feature theory, based on the non-hierarchical binary feature system, outlined in Katamba (1989), and Durand (1990).

An inventory of the sounds of a language alone does not offer enough bases to make general statements about the nature and behavior of sounds for phonological analysis. According to (Katamba, 1989: 35), the knowledge of the basic phonological ingredients called Distinctive Features, which phonemes are made up of, is very crucial for phonological analysis of any language and for that matter, the description of ABAO.

Distinctive features are minimal contrastive units that enter into the composition of sounds. Katamba (1989) views distinctive features as the acoustic and articulatory features that seek to group sounds into natural classes based on their shared features. Distinctive features are the lenses through which the internal structure of a sound can be defined and distinguished from other sounds. Some distinctive features are binary in terms of the presence (+) of the feature or absence (-) of the feature in the sound. Whilst others are unary features because they have a single value and specify only sounds that have them. According to her, sounds whose productions involve only the active articulators are tagged with the unary feature.

The phonemes of ABAO are specified by a set of phonological features. We have generally followed the set of articulatory features outlined by Chomsky and Halle (1968) and favored by Katamba (1989) and Durand (1990). In line with their works, the sounds of ABAO are classified and discussed under major class features, Cavity Features, Tongue Body Features, Manner Features and Laryngeal Features.

2.3.1 Major Class Features

Following the definitions given in Durand (1990), these features define the major classes of sounds that are relevant in phonological analysis. These features sub-divide speech sounds into vowels, consonants, obstruents, sonorants, glides, and liquids. We will classify the sounds in ABAO under the three Major Class Features; Consonantal/non-consonantal, Syllabic/non-syllabic, and Sonorant/non-sonorant.

2.3.1.1 [+/- Consonantal] Sounds

Consonantal sounds are produced with a constriction in the vocal tract at least equal to that found in the fricative consonants; non-consonantal sounds are made without such constriction. Obstruents (plosives, fricatives, and affricates), nasals, and liquids are [+cons]. The [-cons] class includes the vowels, the semi-vowels and the glottal sounds /ʔ/ and /h/ (Durand, 1990: 42). Based on this crucial division, the consonantal classification in ABAO includes: /pʰ, b, t, tʰ, d, dʒ, k, kʰ, g, f, s, ʃ, ʒ, ʒʰ, dʒ, m, n, ɲ, l, r and the [-cons] sounds include all the vowels found in ABAO (i, e, a, u, o with their long counterparts) , the semi-vowels /w/ and /j/.

2.3.1.2 [+/-Syllabic] Sounds

Syllabic sounds are those which constitute peak of syllables, non-syllabic sounds are those which are at the margins of syllables (Ibid: 41). The sounds that constitute peak of syllables in ABAO, i.e., [+syllabic] sounds, include only the vowels of the language while all consonants are [-syllabic] for they occur at the margins of syllables.

2.3.1.3 [+/-Sonorant] Sounds

Sonorant sounds are produced with a vocal tract configuration sufficiently open for the intra-oral air pressure to be approximately equal to the ambient air pressure. By contrast, obstruents are

produced with a constriction sufficient to generate intra-oral pressure much greater than that of the surrounding air (Ibid: 42). The [+son] sounds in ABAO include all the vowels (i, e, a, u, o with their long counterparts), the nasals / m, n, ŋ /, the liquids / l, r /, and the glides / w, j /. The [-son] sounds include the stops, fricatives, affricates and the glottal sounds.

2.3.2 Cavity Features

These features are associated with the places of the articulation of the sounds. They specify where, in the vocal tract, the modifications of the air-stream take place during the production of particular sounds (Katamba, 1989: 43). The features relevant for the description of ABAO sounds are under two broad areas; Primary stricture, which include Coronal/non-coronal, Anterior/non-anterior, Labial/non-labial; /Round/non-round, and Tongue-body features which include High/non-high, Low/non-low, Back/non-back/Dorsal and Advanced/non-advanced Tongue Root (+/-ATR).

2.3.2.1 Primary stricture

2.3.2.1.1 [Coronal] Sounds

All sounds produced with the blade of the tongue raised towards the front teeth, the alveolar ridge and the hard palate are designated with this feature. For non-coronal consonants, the blade of the tongue remains in a neutral position (Ibid: 44). This feature is a unary feature as the active articulator, i.e., the blade of the tongue, is a reference point for its specification. ABAO sounds with this feature specification includes / t, t', d, d', s, ʃ, tʃ, tʃ', dʒ, n, ɲ, l, r, j, i/ii, u/uu. Non-coronal sounds include: /p', b, w, f, k, k', ɣ, m, ŋ, and h / and the rest of the vowels.

2.3.2.1.2 [+/- Anterior] Sounds

The anterior sounds are produced from the alveolar ridge forward. Katamba (1989) distinguishes the production of anterior and non-anterior sounds as follows:

In the production of anterior sounds, the main obstruction of the airstream is at a point no farther back in the mouth than the alveolar ridge; for non-anterior sounds the main obstruction is at a place farther back than the alveolar ridge. Labials, dentals, and alveolar are anterior while all other sounds are not (Katamba, 1989: 44). The [+ant] sounds in ABAO thus, include / p', b, t, t', d, d', f, s, m, n, l, r /, while all other sounds are [-ant].

2.3.2.1.3 [Labial]; [+/- Round] Sounds

These features are attributed to sounds whose productions involve a varying degree of the airstream obstruction at the lips or the protrusion of the lips. These features draw consonants and rounded vowels into one category; the Labial feature is a consonant specification, whereas Round feature is a vowel specification. Katamba (Ibid: 44) points out that, there is a considerable degree of overlapping between sounds covered by these two features. Labial sounds include; Bilabial, Labial-velar and Labio-dental consonants as well as rounded vowels. All other sounds are non-labial/ [-round]. The sounds in ABAO that fall under these features are / p', b, f, m, w / and rounded vowels / u/uu, and o/oo /.

2.3.3 Tongue Body Features

The features discussed in this section relate to the positions of the tongue body and the tongue root relative to their neutral positions. The neutral position of the body of the tongue is said to be the position which it assumes in the production of a mid front vowel (Ibid: 45). The features under consideration are; High/non-high, Low/non-low, Back/non-back and Advanced/non-advanced tongue root.

2.3.3.1 [+/- High] Sounds

High sounds are made with the tongue body raised from neutral position while non-high sounds are made without such raising of the body of the tongue (Ibid: 45). This feature covers consonants and vowels including alveo-palatal, palatal, velar consonants, glides and high vowels. ABAO sounds in this category include / ʃ, tʃ, tʃ', dʒ, j, k', k, g, w,ɲ, i/ii, u/uu/. All other sounds are [-high].

2.3.3.2 [+/- Low] Sounds

Low sounds are produced with the tongue depressed and lying at a level below that which it occupied when at rest in neutral position; non-low sounds are produced without depressing the level of the tongue in this manner (Ibid: 45). This feature specification covers open vowels and pharyngeal consonants. All other sounds are non-low. Guided by the description above, the

sound that is [+low] is the open vowel / a / since there are no pharyngeal consonants in ABAO. All other sounds are [-low].

2.3.3.3 [+/- Back]; [Dorsal] sounds

The features [Back] and [Dorsal] are virtually the same but whereas the feature [Back] is binary and a vowel specification, [Dorsal] is a unary feature for consonant specification. Sounds produced with the body of the tongue retracted from neutral position are [+Back] or [Dorsal]. Sounds produced with the body of the tongue either in neutral position or pushed forward are non-back (Ibid: 46).

The sounds that are described as [+Back] in ABAO include back vowels, / u/uu, , o/oo, / and the consonants that are specified for the feature [Dorsal] are the velar consonants /k', k, g /. The Labio-velar sound / w / also take part of its specification from the feature [Dorsal] and from the feature [Labial]. All other sounds are not specified for the feature [+Back] or [Dorsal].

2.3.3.4 [+/- Long] Sounds

In the production of Long sounds [+Long] vowels: the tongue body involves a greater of constriction than that found in their short counterparts, Oyeade (2008). This feature divides the vowels of ABAO into two distinct sets. The set of [+Long] vowels are / ii, ee, uu, oo /. The set of [-Long] vowels are / i, e, u, o, a /.

2.3.4 Manner Features

The manner features characterize the degree and kinds of modulation that the airstream undergoes in the oral cavity as it comes into contact with the articulators during the production of sounds. These features include Continuant/non-continuant, Lateral/non-lateral, Nasal/non-nasal, Strident/non-strident and Delayed Released/ Instantaneous Release.

2.3.4.1 [+/- Continuant] Sounds

Continuant sounds are produced with a continuous airflow in the oral cavity. Durand (1990: 51) explains that continuant sounds are produced with a primary constriction which allows the air to flow through the mid-sagittal region of the vocal tract, while sounds produced with a sustained

occlusion are non-continuant. According to Katamba (1989: 50), continuants are produced by impeding, but not completely blocking, the flow of air through the glottis, or the pharynx or through the centre of the oral tract; noncontinuant sounds are made by completely blocking the flow of air through the center of the vocal tract.

According to her, affricates, nasals and oral stops and laterals are noncontinuant. All other sounds are continuant. The [+cont] sounds in ABAO include / f, s, h, r, w, j / and all the vowels, while the [-cont] sounds are the stops, affricates and the lateral.

2.3.4.2 [+/-Lateral] Sounds

A lateral sound is produced in the air escapes on one side or both sides of the tongue in the vicinity of the molar teeth. In non-lateral sounds air flows through the center of the mouth (Katamba, 1989 : 50). The [+lateral] sounds in ABAO is / l /. All other sounds are [-lateral].

2.3.4.3 [+/- Nasal] Sounds

In the production of a nasal sound the velum is lowered to allow air to escape through the nasal cavity. Oral sounds are produced with the velum raised so as to block access to the nasal cavity and to allow air to go out only through the mouth (Ibid: 50). Nasal sounds in ABAO include the nasal stops / m, n, ŋ /.

2.3.4.4 [+/- strident] Sounds

Sounds with the feature are acoustically characterized by a more random noise than non-strident sounds. Only fricatives and affricates can be strident. Acoustically, strident sounds are characterized by more random noise than their non strident counterparts (Ibid: 50).

Furthermore, Katamba states that in the SPE system, where features are generally defined in articulatory terms, the feature [strident], which is acoustically-defined is different from the rest - it is a relic retained from the original Jakobsonian system. Fricatives which have high pitched strident noise are referred to as SIBILANTS. The feature strident are referred to as SIBILANTS. The feature strident distinguishes fricatives as follows: (Ibid: 50).

(18)

	[+strident]		[-strident]	
	Voiceless	Voiced	Voiceless	Voiced
Sibilant	s	z	ʃ θ	ʒ ð
Non Sibilant	ts tʃ f pf X	dz dʒ v bv ʁ	ç	j

Thus, strident sounds in ABAO include / f, s, ʃ, tʃ, dʒ/.

2.3.4.5 [+/- Del. rel] Sounds

The feature delayed release is a tag on sounds produced with a complete closure of the vocal tract and a gradual release of the air-stream.

Chomsky and Halle (1968: 318) explain that during the delayed release, turbulence is generated in the vocal tract so that the release phase of the affricate is acoustically quite similar to the cognate fricative. The instantaneous release is normally accompanied by much less or no turbulence. Sounds with this feature in ABAO are the affricates, / tʃ, tʃʰ, dʒ /. The rest of the sounds are instantaneous release.

2.3.5 Laryngeal features

These features specify the glottal state of sounds. They include [+/-voice] (specify whether there is a vocal cord vibration or not in the articulation of a segment) and [+/- spread glottis]; [+/- constricted glottis]. Sounds distinguished by these features in ABAO are showed in 2.3.5.1 and 2.3.5.2 below.

2.3.5.1 [+/- voiced] Sounds

Sounds produced with vibration of the vocal cords are voiced; voiceless sounds are produced with a glottal opening so wide that it will prevent vocal vibration in air flow through it (Durand, 1990: 54).

Voiced sounds in ABAO include the vowels, the glides / w, j /, the liquids / l, r /, the nasals / m, n, ɲ, / and the voiced obstruents / b, d, g, dʒ /.

2.3.5.2 [+/- spread glottis]; [+/- constricted glottis]. Aspirated consonants and the glottal fricative /h/ are [+sg] while all other consonants are [-sg].

There are no aspirated consonants in ABAO, but there are sounds that are distinguished by [+/- constricted glottis]. [+cg] sounds are glottalized consonants and ejectives.

The ABAO sounds that are distinguished by this feature are / ɖ, ʔ, p', t', tʃ', k' /. The underlying consonants of the main lexicon of non-borrowed words in ABAO can be distinguished by the feature set shown below in Table 4.

Note that the affricate segments are not included in the list because they are considered to be complex segments; they are formed by a stop plus a fricative.

Consonant Phoneme	Consonantal	Sonorant	Coronal	Anterior	Distributed	Labial	High	Low	Back	Continuant	Strident	Lateral	Nasal	Voice	Ejection	Constricted gl.
p'	+	-	-	+	-	+	-	-	-	-	-	-	-	-	+	+
b	+	-	-	+	-	+	-	-	-	-	-	-	-	+	-	-
m	+	+	-	+	-	+	-	-	-	-	-	-	+	+	-	-
w	-	+	-	+	-	+	-	-	+	+	-	-	-	+	-	-
t	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
t'	+	-	+	+	-	-	-	-	-	-	-	-	-	-	+	+
ɗ	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	+
d	+	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-
n	+	+	+	+	-	-	-	-	-	-	-	-	+	+	-	-
l	+	+	+	+	-	-	-	-	-	+	-	+	-	+	-	-
r	+	+	+	+	-	-	-	-	-	+	-	-	-	+	-	-
k	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-
k'	+	-	-	-	+	-	+	-	+	-	-	-	-	-	+	+
g	+	-	-	-	+	-	+	-	+	-	-	-	-	+	-	-
ʔ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f	+	-	-	+	-	+	-	-	-	+	+	-	-	+	-	-
s	+	-	+	+	-	-	-	-	-	+	+	-	-	-	-	-
ʃ	+	-	+	+	+	-	+	-	-	+	+	-	-	-	-	-
h	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
j	-	-	+	-	-	-	+	-	-	+	-	-	-	+	-	-
ɲ	+	+	+	-	+	-	+	-	-	-	-	-	+	+	-	-

Table 4: Distinctive feature matrix for Arsi-Bale Afan Oromo consonants.

Underspecification theory claims that predictable properties of feature do not need to be represented underlyingly in the mental lexicon. There are two theories of feature specifications. These are radical underspecification (Archangeli, 1984) and restricted (contrastive) underspecification (Clements, 1987). Both theories agree on the point that some redundant features should be eliminated. Only non-redundant properties of segments must be specified, with redundant properties derivable by rule. For example, the feature coronal is taken to be the underspecified place of articulation because it is observed frequency of occurrence in the languages of the world and general susceptibility as the target of assimilatory phonological rules (Paradis and Prunet, 1991). Other less predictable or more marked places of articulation, such as labial and dorsal are necessarily specified underlyingly. Similarly, for manner of production, continuant is presumably the specified property, where non-continuant is predictably underspecified.

Large literature on phonology of coronals has proposed that labials and velars are marked for place and the respective articulator node but that coronals like /t/ are underspecified for coronal (cf. Paradis and Prunet, 1991a). Thus, /t/ is least specified stop, and /s/, the least specified fricative. The theories of underspecification differ with respect to the degree of redundancy to be left out of underlying specification. Radical underspecification proposes the elimination of all predictable features, redundant values of non-distinctive features and default values of distinctive features from underlying representations. On the other hand, restricted (contrastive) underspecification maintains that contrastive underspecification requires both values of redundant property to be represented underlyingly. For example if fricative and stops produced at the same place, are distinctive in the language, then these segments would be specified as [+continuant] and [-continuant] respectively. By comparison, radical underspecification posits only one value of a feature, typically the universally marked property. In this example, [+continuant] would be specified for fricatives, but stops would have no specification for manner. Lloret (1988: 34) explains the redundant specification of Oromo sounds. She says, the feature is left blank if a redundant feature is predictable from feature co-occurrence restrictions. All sonorants are always voiced in Oromo only redundant (non-contrastive) features are to be left out of underlying representations. Thus the feature voice is redundant for sonorants like other languages. Lloret expounds that a feature is also left blank if the segment does not have any specification for it. Hence, it is underspecified, to the feature that it has no specification for. This is exemplified by the underspecification of voice for the ejective and

implosive segments. Furthermore, laryngeal segments are specified for features: consonantal, syllabic, voicing, and constriction, but underspecified for all other features. Eliminating redundant features, ABAO has the following underspecified features for consonants. Redundant features are not marked. See Redundancy below.

Consonant Phoneme	Consonantal	Sonorant	Coronal	Anterior	Distributed	Labial	High	Low	Back	Continuant	Strident	Lateral	Nasal	Voice	Ejection	Constricted gl.
p	+	-	-	+	-	+					-				+	+
b	+	-	-	+	-	+					-			+	-	-
m	+	+	-	+	-	+					-		+			
w	-	+				+	+	-	+	+			-			
t	+	-	+	+	-						-			-	-	-
t'	+	-	+	+	-						-				+	+
d'	+	-	+	+	-						-				-	+
d	+	-	+	+	-						-				-	-
n	+	+	+	+	-								+			
l	+	+	+	+	-							+	-			
r	+	+	+	+	-					+			-			
k	+	-	-	-	+						-			-	-	-
k'	+	-	-	-	+						-				+	+
g	+	-	-	-	+						-			+	-	-
ʔ	-										-					+
f	+	-	-			+				+	+			-	-	-
s	+	-	+	+						+	+			-	-	-
ʃ	+	-	+	+	+					+	+			-	-	-
h	-															-
j	-	+		+			+	-		+			-			
ɲ	+	+	+	-	+						-		+			

Table 5: Underspecified feature matrix for Arsi-Bale Afan Oromo consonants

Following the phonetic description of ABAO sounds discussed under 2.3; the following table shows the features that are necessary to distinguish between the vowels. As all vowels are sonorant, syllabic, continuant and voice these features are not included in this table. All the features are shown as binary.

Vowel	Round	High	Back	Low	Long
i	-	+	-	-	-
e	-	-	-	-	-
a	-	-	-	+	-
u	+	+	+	-	-
o	+	-	+	-	-
ii	-	+	-	-	+
ee	-	-	-	-	+
aa	-	-	-	+	+
uu	+	+	+	-	+
oo	+	-	-	-	+

Table 6: Distinctive feature matrix for Arsi-Bale Afan Oromo vowels

The matrix contains redundant information, i.e for example, to distinguish /a/ from all other vowels, it is sufficient to specify it as [+low]. Notice also the underlying representation of high vowels. Radical underspecification maintains that high vowels have no specification for [hi] i.e. high is redundant for high vowels both underlyingly and in lexical representation.

The same point can be made regarding [low] and [back] as well. Given the feature values [low] and [back], [-low] and [+back] can be introduced by the redundancy rule below.

[] → [-high]

[] → [-low]

[] → [+back]

Such redundancy is encoded in redundancy rules format $A \rightarrow B$ Read “A implies B”. Redundancy rules are not phonological rules. They express true statements about the feature make-up, for example, of segments in Table 6 above. Leaving out the redundant features from the vowel features of ABAO, one can remain with the following underspecified features.

Vowel	Round	High	Back	Low	Long
i					
e		-	-		
a				+	
u	+				
o	+	-			
ii					+
ee		-	-		+
aa				+	+
uu	+				+
oo	+	-			+

Table 7: Underspecified feature matrix for Arsi-Bale Afan Oromo vowels

2.4 The Syllable

There have been various approaches over the years concerning the definition and nature of the syllable. Various linguists have given various definitions from their individual perspectives, one of which we will review to enable us attempt establishing the syllable structure in ABAO.

Roach (1991: 67) defines a syllable as: “a center which has little or no obstruction to airflow and which sounds comparatively loud; before and after that center will be greater obstruction to the airflow and/or less sound.” Taking his idea into consideration, in ABAO the center of the syllable is a vowel, while the peripheries of the syllable are consonants. For instance, in the ABAO word *ʔás* ‘here’ /a/ is produced with little or no obstruction of airflow in the center; whilst /ʔ/ and /s/, are produced with relatively greater obstruction of airflow. From the phonological perspective, several definitions have been assumed.

Laver (1994: 114) gives a phonological definition of the syllable as “a complex unit made up of nuclear and marginal elements.” The nuclear elements by his assessment are vowels and syllabic consonants such as nasals and liquids and the marginal elements are consonants. In the case of ABAO, the nuclear position is exclusively for vowels since there are no syllabic consonants in the language. The word *jóom* ‘when?’ is mono-syllabic which consists of the vowel /oo/ as its nuclear element and /j/ and /m/ as its marginal elements.

Blevins (1995:20) also considers the syllable as being “the phonological unit which organizes segmental melodies in terms of sonority”, with explanation that the sonority of a sound is its loudness relative to other sounds produced with the same input energy. In Katamba (1989: 153), the syllable is described as “the unit in terms of which phonological systems are organized”, while Kenstowicz (1994: 250) says that it is “an abstract unit of prosodic organization through which a language expresses much of its phonology.”

Goldsmith (1990: 108) however reveals a vivid picture of what the syllable is by categorically stating that the syllable is a phonological constituent composed of zero or more consonants, followed by a vowel, and ending with a shorter string of zero or more consonants. There is however a consensus that the internal structure of the syllable is made up of an obligatory nucleus (N), an optional consonantal onset (O), and coda (C), where the onset and the coda are the marginal elements and are filled by non-syllabic sounds, whilst the nucleus is occupied solely by syllabic sounds.

There are equally different views concerning the structural representation of the internal structure of the syllable in the literature. Some of the competing models of representation of the internal structure of the syllable in phonological analysis are the Onset Rhyme structural model, the Moraic structural model and the CV structural model. The Onset and Rhyme structural model proponents, (Pike and Pike 1947; Halle and Vergnaud 1978; Fudge 1969 etc.), posit that syllable is composed of a binary intermediary branching with; Onset and Rhyme, with the Rhyme further branching into Nucleus and Coda. The structure adapted from Blevins (1995) illustrates this model.

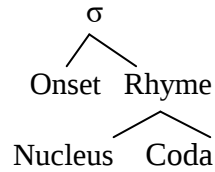


Figure 2: Onset and Rhyme Model Structure.

Proponents of the Moraic structural model (Hyman 1985; Hayes 1989 etc.), relate the syllable-internal structure to syllable weight; monomoraic (light) and bimoraic syllable, and suggest that initial consonants do not contribute to the syllable weight, thus they are attached directly to the syllable node, whilst vowel and final consonants are moraic since they contribute to syllable weight. The ABAO word *gárba* ‘sea’ can be illustrated by this model as in Figure 3 below.



Figure 3: Moraic Structural Model

The proponents of the CV structural model (Anderson 1969; Khan 1976; Clements and Keyser 1983 etc.) posit that the syllable is a flat structure without sub-constituent but the segments themselves.

Katamba (1989: 156) explains that the CV-model assumes that the syllable is supposed to be a three-tier structure consisting of a syllable node (σ); a-tier whose C and V elements dominate consonantal and vowel segments and a segmental tier consisting of a bundle of distinctive feature matrices, which represent consonant and vowel segments.

The V element of the CV-model represents a syllable nucleus while the C element represents a syllable onset or margin. In this work, the CV-model expounded in Clements and Keyser (1983) is adapted in representing the various syllable structures in ABAO because it is more convenient model for the representation of double sounds than the other models.

There are several reasons why the syllable has been considered important construct of phonological theory. Firstly, through the syllable, it has been argued, one can give an adequate characterization of the domain of application of a wide range of phonological rules. Secondly, it has been noted that the most general and explanatory statement of phonotactic constraints of a language can be made only by reference to the syllable. Thirdly, an adequate treatment of suprasegmental phenomena like stress requires that segment be viewed as grouped into units the size of a syllable.

2.4.1. Syllable types in Arsi-Bale Afan Oromo

Speakers generally pattern their languages along lines that will make the phonological items in these languages specific to them while at the same time facilitating communication. As origin of all their linguistic systems, speakers are often aware, either consciously or unconsciously, of points in their conversations when they have to take a pause and then continue.

This inherent knowledge is also responsible for the underlying patterning of sound segments in such languages and so it is the case that the sounds in any language are structured by the speakers who decide on what forms constitute separate syllables and how these forms play out. The following are some preliminary statements about the structure of syllables in ABAO.

There are four types of syllable structures in ABAO. These are CV, CVC, CVV and CVVC, where the VV stands for identical vowels rather than diphthongs. We cannot have two different vowels coming together in the language.

Onset position is always occupied by a consonant because neither word nor syllable begins by a vowel in ABAO. The syllable structure of the language can be schematized as: C V (V) (C), where C is a variable for ‘consonant’, V is a variable for ‘vowel’, VV represents a long vowel, and items in parentheses are optional.

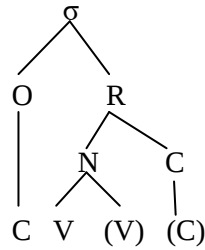


Figure 4: Syllable structure template for Arsi-Bale Afan Oromo

Each syllable type is provided by examples and the structural representation is displayed in autosegmental approach` as in the following sections.

2.4.1.1 The CV syllable type

It is often stated as fact that the most basic syllable is CV (cf. Hyman 1975, Lass 1984), where C is the onset and V the nucleus. This is called the 'universal' or 'optimal syllable' and it is the syllable that children 'learn' first (Ouden and Bart, 1995). Blevins (1995: 220) states that all languages have CV syllables. A majority of ABAO words are of this shape. All consonants and vowels can fill the positions of the CV slots in this syllable type. Examples of words containing these syllable types are given below.

(18)

ká.na	‘this’	má.na	‘house’	k’á.b a	‘I/he own (s)’
bá.ra	‘year’	bí.fa	‘color’	dí.k’a	‘wash’
dáf.k’a	‘sweat’	gá.ra	‘to’	lá.ma	‘two’
ʔé.da	‘night’	ʔá.la	‘out’	gá.ma	‘across’

The syllable can be represented as in the Figure 5 below.

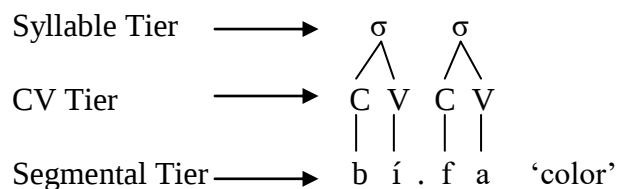


Figure 5: Structural Representation of CV Syllable type

2.4.1.2 The CVV syllable type

This syllable type is the next preferred after the CV type. The vowels in this sequence that occupy the V-slot belong to the set of [+tense] for it represents long vowels. Some examples of words composed of this syllable shape include the following and the illustration of the structural representation include the ones in example 19

(19)

daa.ráa	‘ash’	gaa.ríi	‘well’	dʒaa.máa	‘blind’
suu.p’áa	‘maintenance’	gaa.fíi	‘question’	buu.síi	‘comtribution’
koo.ráa	‘saddle’	dii.máa	‘red’	d’íi.buu	‘to push’
boo.náa	‘proud’	gúu.tuu	‘full’	bee.káa	‘scholar’

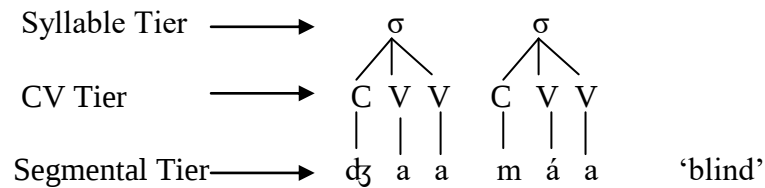


Figure 6: Structural Representation of CVV Syllable type

2.4.1.3 The CVC syllable type

This syllable type manifests in many words in ABAO. Any consonant except /p’/ can fill the onset slot. The V-Slot may be occupied by any vowel, but the coda C-Slot is exclusively reserved for word final consonants which comprise of / f, s, m, n, l, r /.

(20)

gar.búu	‘barley.’	dʒíl.ba	‘knee’	ʃ’áam.sa	‘May’
k’ar.ʃíi	‘hall’	gál.ma	‘hall’	dãam.sa	‘message’
ʔil.káan	‘teeth’	bi.ʃáan	‘water’	ʔif.táan	‘after tomorrow’
dáf.k’a	‘sweat’	kées.sa	‘inside’	ʔás	‘here’

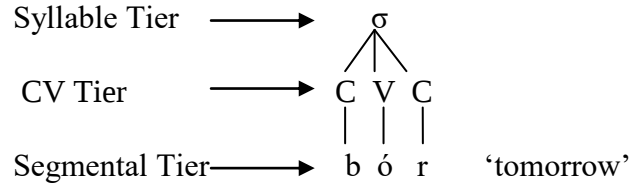


Figure 7: Structural Representation of CVC Syllable type

2.4.1.4 The CVVC syllable type

The vowels in sequence CVVC syllable shape are also the set of [+ long] ; the V-slot belong to this feature for there are no diphthongs in the language and the slot is filled by long vowels. Consider the following examples with structural representation in Figure 8 below.

(21)

jóom	'when?'	dʒáar.sa	'old man'	díim.tuu	'red'
máaf	'why?'	faal.láa	'against'	daan.díi	'road'
gáan.gee	'mule'	náan.noo	'around'	daan.gáa	'territory'
séen.sa	'introduction'	k'uub.sáa	'satisfactory'	dʒéek'.t'a	'you disturb'

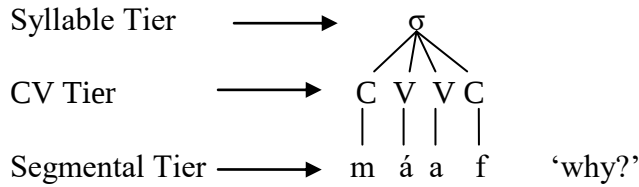


Figure 8: Structural Representation of CVVC Syllable type

2.5 Arsi-Bale Afan Oromo word structure

A word is composed of one or more syllables and the structure of the syllable and that of the word are basically related. This relationship is best described by Hyman (1975). He says the sequential constraints which operate at the beginning of a word should be operative at the syllable, even if this syllable is word-initial. Similarly, the same sequential constraints which operate at the end of a word should be operative at the end of a syllable.

In consonance with Hyman’s clarification, there is a direct correlation between the syllable shape and word structure in ABAO since the sequential constraints that operate at the beginning and end of the syllable are also in the word. The words in ABAO range from one syllable to five syllable forms which correspond directly to the different shapes of the syllable discussed above. In this thesis we shall discuss words containing one, two and three syllables to show the complementary relationship between the shapes of the syllable and word structures.

2.5.1 Mono-syllabic words

There are only few mono-syllabic structures in the ABAO. Mono-syllabic words reflect directly the basic syllable shapes discussed under 2.4. Examples of mono-syllabic words taking the forms of the syllable shapes are demonstrated in the following examples under (22).

(22)

CVV	ʔóo	‘yes’	kóo	‘mine’
CVC	ǰán	‘five’	bór	‘tomorrow’
CVVC	fóon	‘meat’	jóom	‘when?’

2.5.2 Disyllabic words

Words in this category consist of different syllable shapes in various arrangements. Some examples of disyllabic words in different combination of the basic syllable shapes are found in (23) below.

(23)

CV.CV	náma	‘person’	láma	‘two’
CVV.CVV	buusíi	‘contribution’	láagaa	‘palate’
CVC.CV	hánga	‘until’	ďǎk’na	‘body’
CVC.CVV	gowwáa	‘foolish’	duwwáa	‘empty’
CVV.CV	díina	‘enemy’	dúula	‘campaign’
CVVC.CV	séensa	‘introduction’	k’éensa	‘nail’
CV.CVVC	biǰáan	‘water’	ʔudáan	‘feces’

2.5.3 Trisyllabic words

Words in this category consist of three syllable shapes in different arrangements. Some examples of trisyllabic words in different combinations of the basic syllable shapes are in (24) below.

(24)

CV.CV.CV	galáta	‘thanks’
CVC.CV.CVV	d’immísuu	‘to leak’
CVC.CVV.CV	handúura	‘navel’
CV.CV.CVV	gatamáa	‘lost’
CV.CVC.CVV	fit’áǵǵuu	‘to finish’
CVV.CV.CVV	boodǵíʔuu	‘to rob’

Quadrisyllabic words and words having more than four syllables have similar patterns with the trisyllabic words. Hence, leaving them aside from explanation, we shall prolong our demonstration to the changes that take place in sounds of ABAO when segments are put adjacent to the other segments.

2.5.4 Summary of chapter two

An inventory of the number and nature of ABAO sounds is the major goal of this chapter of the study. We began by establishing twenty four (24) consonants that can be categorized in to the following set:

- a) Labials (b, f, p’, m, w)
- b) Coronals (t, d, d̥, s, ʃ, tʃ, dʒ, , t’, tʃ’, n, ɲ, l, r and j)
- c) Dorsals (k, g, k’) and
- d) Laryngeals (ʔ, h)

The language has also typical Eastern Cushitic set of five short and five long (10) phonemic vowels (i/ii, u/uu, e/ee, o/oo and a/aa) where no different sequences of vowels prevail.

The chapter also establishes the various distinct groups or classes into which the sounds of the language are found and proceeds to make some predictable statements about the various feature specifications; major class features, cavity features, tongue body features, manner features, and

laryngeal features. It concludes with a description of the syllable structures of ABAO. The minimal ABAO syllable identified consists of a consonant and a vowel. The maximal syllable structure is CVVC, in which VV is a long vowel.

The following chapter of the study is concerned with establishing some of the recurring morphophonemic processes in the ABAO language. It first examines the processes whereby one sound copies or behaves like another within a word or phrase; assimilation. Thereafter it discusses some of the processes that are evident in the structuring of syllables in the language and represents them with Non-linear Phonology.

CHAPTER THREE

PHONOLOGICAL PROCESSES IN ARSI-BALE AFAN OROMO

3.0 Introduction

This chapter of the study is concerned with establishing some of the regular phonological processes in the ABAO language. It first examines assimilation. Thereafter it discusses some of the processes that are apparent in the structuring of syllables in the ABAO language. It is essential primarily to define the term phonological processes as it is a supreme term in the study of the sound combination and sound alternation of the language.

Phonological processes refer to the changes that take place in sounds when segments are juxtaposed. They serve the communicative function of language by serving their proper functions of pronouncement and perceptibility.

Phonological processes are phonetically motivated phenomena that are based on articulatory and auditory systems which are universal to languages of the world. Though these universal processes may apply in all languages, each linguistic community selects a set of processes. The phonological systems of different languages are obviously different. No two languages have exactly the same inventory of phonemes which are realized by the same set of allophones; no two languages have exactly the same phonological rules regulating the deployment of their sounds (Katamba 1989: 79). This chapter, thus, discusses the phonological processes that are specific to ABAO, a dialect of the Afan Oromo language. It discusses the assimilatory processes and formalizes the variety of them within Autosegmental representation.

3.1 Definition and essence of assimilation

Assimilation is quite common in languages all over the world and most of the rules are shared by a lot of different languages. They all follow certain rules but they are also affected by particular phonotactic constraints of the language under study. Although the phonological rules vary from language to language, it is nevertheless true that there are striking and simple regularities in what many phonological rules do.

In assimilation, there is a rule that makes two or more neighboring segments more similar by making the segments share some feature. When two consonants occur in a sequence one may be assimilated to the other. That is, one may adopt certain features of the other. In other words, it assimilates one segment to another by spreading a feature of a sequential phoneme on to its neighboring segment, thus making the two phones more similar (Crystal 1997: 30).

This section of the thesis describes the type of assimilation found in ABAO with the representation of each by theory of Feature Geometry that branched from Autosegmental phonology. Before we proceed to the description of the individual types of assimilation, it is necessary to determine the type of assimilation and how it can be defined. In partial assimilation, the targeted segment takes on some, but not all of the characteristics of the source segment. In total assimilation, the target becomes identical to the source (McCarthy & Smith, 2003: 320). Assimilation can also be characterized as an adjustment of speech sounds to their environment (Odden, 2005: 57). The term assimilation usually refers to contextual variability of speech sounds, which is said to be caused by the influence of one sound upon another. It is often defined as a process of replacing one sound, or changing some properties of a sound, under the influence of another sound which occurs near to it.

According to Crystal (1991), assimilation favors the speaker in his speech. The advantage of having assimilation is that it results in smoother, more effortless, more economical transitions from one sound to another. It also facilitates the task of speaking. The speaker usually tries to conserve energy by using no more effort than is necessary to produce an utterance.

The process of assimilation can actually be distinguished by the distance between the targeted segment and the source of assimilating feature(s). The target and the source segment can strictly be adjacent as for local assimilation or they can be far apart as in harmony which refers to long distance assimilation, though they usually appear in the same word. The vast majority of languages assimilation processes obtain between strictly adjacent segments, but some languages display long distance assimilatory effects. Phonetically, local assimilation may be attributed to the minimization of articulatory effort i.e. to avoid unnecessary shifts in stricture or place of articulation within a sequence of segments (Youssef, 2013: 23).

McCarthy and Smith (2003: 320) explain local assimilation giving clear examples that attest the phenomenon well cross-linguistically. They emphasize that in place assimilation, a nasal consonant takes on the place of articulation of a following consonant, usually a stop. They support their idea by giving examples from English; in + possible → impossible, in + credible → i[n]credible. They further explain how voice assimilation and palatalization take place. According to them, an obstruent takes on the voicing of a following obstruent: *Fowlis Scots* great + boy grea[db]oy. In palatalization, they say, consonants followed by [i], [j] or other vowels take on their palatal quality: did + you [diddʒu]. Depending on the type of feature that spreads from one segment to another we can observe several major types of assimilation such as assimilative processes involving manner of articulation, place of articulation and voicing (Roach 2000: 139).

Assimilation also includes partial assimilation in which one consonant becomes more similar, but not identical to a neighboring consonant and total assimilation in which the adjacent sounds become identical forming false geminates. An example of partial assimilation can be found in sequences such as *ten boys* in English, where the /n/ of ‘ten’ tends to assimilate to the place of articulation of the following bilabial stop: [t^hembɔɪz]. Assimilation for voicing is also common, as in the case of the voiceless obstruents of Hungarian, which become voiced when followed by another voiced obstruent, as seen in the root /kalap/ ‘hat’ which is realized with a voiced stop in [kalabban], where the suffix [ban] is added (Carr, 2008: 16).

3.2 Phonological features

According to Booij (1995: 9), a fundamental insight of present day generative phonology is that the sounds of a language are not atomic, but should be decomposed into sets of phonological features.

In Chomsky and Halle (1968), each segment is represented as a single set of concurrent binary phonological features such as [-voice], [+nasal], etc. However, in Clements (1985) and subsequent work, it has been argued that the set of phonological features should be internally structured and recent research in phonology reveals that a segment is not just an unorganized

bundle of features, but that features have their own internal organization. This is well reflected in Feature Geometry theory proposed by many researchers.

Feature geometry (Clements , 1985; Sagey, 1986/1990; Hume, 1992/1994; Halle, 1995; Clements and Hume, 1995) is supported by Autosegmental Phonology of Goldsmith (1990), where the independence of some features within a segment is represented by locating the independently acting feature on a separate tier. As assimilation is a phonological process in which a segment changes to resemble its neighbors more closely, it can be handled through various phonological theories.

One standard analysis of assimilation is autosegmental spreading. In Autosegmental Phonology, (Clements, 1985; Goldsmith, 1990), features are represented as autosegments that may be associated with nodes. The representations are non-linear in which the highest mother-node establishes linearity across segments.

The fact that partial assimilation treats certain groups of features as a sub-matrix is captured by the Feature Geometry framework in which the features are grouped into larger tiers called class tiers. These class tiers are in turn organized under the root node. The root node represents the phonological unity of the features that form together a phonological segment. It is annotated with the binary feature [consonant] and [sonorant], the so called Major Class Features that divide the segments of a language into three classes; [+cons, -son.] *obstruents*; [+cons, +son.]; *sonorant* consonants and [-cons, +son.] *vowels*. It is generally thought that the major class features [consonant] and [sonorant] do not participate in partial assimilation (Booij, 1995: 9).

Pullyblank (1988) and Paradis and Prunet (1991) explain that distinctive features are organized into natural classes that make up sets. These sets of features are represented by means of hierarchical trees called Feature Geometry. Each feature and each node of the feature in the tree constituents is a possible locus for a phonological rule. In this study, the model we use is based largely on Clements (1985), as shown in Figure 9.

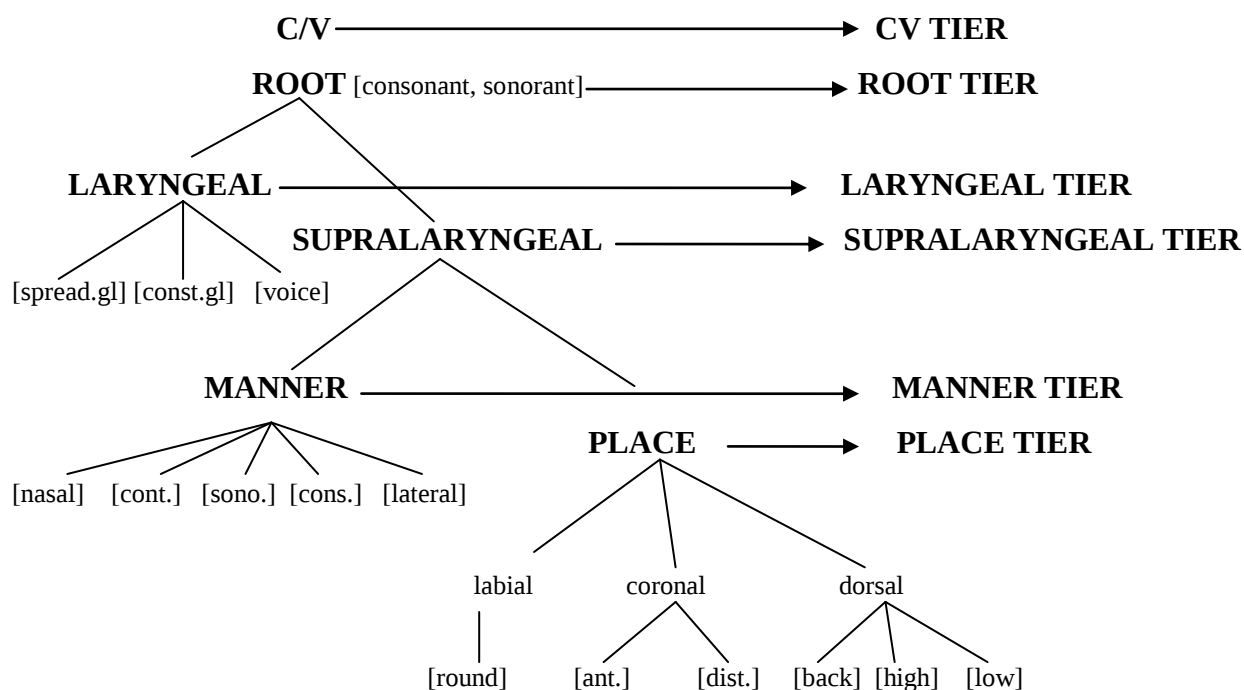


Figure 9: Feature Geometry adopted from Clements (1985: 229)

In the model under Figure 9, the topmost tier in feature geometry is a ‘skeletal tier’, which contains two types of nodes: first Cs, which represent non-syllabic segments, and second, Vs, which represent syllabic segments. Each C or V dominates a ‘root node’, which is the structural representation of a phoneme. Each root node dominates two class nodes, [laryngeal] and [supralaryngeal]. The laryngeal node dominates features that define, for instance, the difference between ‘voiced’ sounds and ‘voiceless’ ones. The supralaryngeal node dominates two further class nodes: first, the manner node which dominates the manners [nasal], [continuant], [sonorant], [consonantal], [lateral] and second, the [place] node, which dominates the articulator nodes [labial], [coronal], and [dorsal]. Finally, the articulator class nodes dominate binary-valued features that specify how each articulator is used.

Many revisions have been made to the set of place features since SPE (Sagey, 1986/1990; Clements, 1991; Hume, 1992/1994; Halle, 1995; Clements and Hume 1995, Kam, 2005). For Clements (1991), [labial], [coronal] and [dorsal] can each be associated with either a consonant

place (C-place) or vowel place (V-place) class node, and the V-place node is dependent on the C-place node. Figure 10 illustrates this relationship.

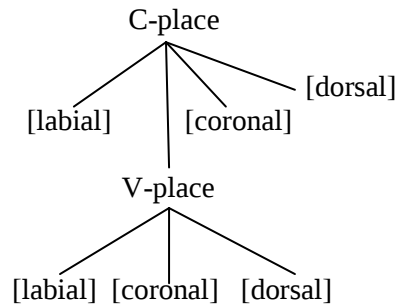


Figure 10: The relationship between C-place and V-place in Feature Geometry

This model, according to (Morén , 2003: 198) is important to:

- 1) capture the articulatory similarity between consonant and vowel. Consonants and vowels made with an active lip articulation have the feature [labial]. Consonants and vowels made with the front half of the tongue have the feature [coronal], and consonants and vowels made with the tongue dorsum have the feature [dorsal]
- 2) straightforwardly account the contrast between primary and secondary place articulations. Primary place have only a C-place node with a terminal feature. Vowels have both a C-place and a place node, but only a terminal feature on the V-place node.

In Autosegmental Phonology, assimilation is associating or linking a spreading feature with a target root node. This process is termed feature spreading: a feature spreads from a trigger to a target. Features are structured into feature classes which combine in various ways to form higher-level units. It is crucial to analyze assimilation in Autosegmental model for it has advantage over linear model. The advantage of the Autosegmental model in analyzing assimilation is the fact that features can associate independently to the skeletal tier. In this model of analysis, assimilation rules can be represented as spreading of some feature over skeletal slots. Based on the framework of Feature Geometry model by Clements (1985), the delinking line goes from the place of articulation node (PL) on the right side backwards. Clements recognizes that there are three major feature groups, laryngeal features, manner features and place features, which he calls Class Nodes. He also assumes that the Manner Node and Place Node are combined together to make another internal hierarchical group under the Supralaryngeal Node.

Clements uses the term tier to refer to the internal structural unit. Two tiers constitute a plane and phonological rules can be expressed as changes in association lines on specified planes.

The rule of assimilation in which labial sounds spread the distinctive features from the Place of articulation node (PL) on the right side backwards to the supralaryngeal (SL) node on the left side can be represented by Feature Geometry model proposed by Clements (1985). For example, in the ABAO word /hanba/ → [hámba] ‘left over’ the /b/ sound spreads its labial feature to the coronal /n/ sound. This can be represented by aforementioned model as follows in figure 11:

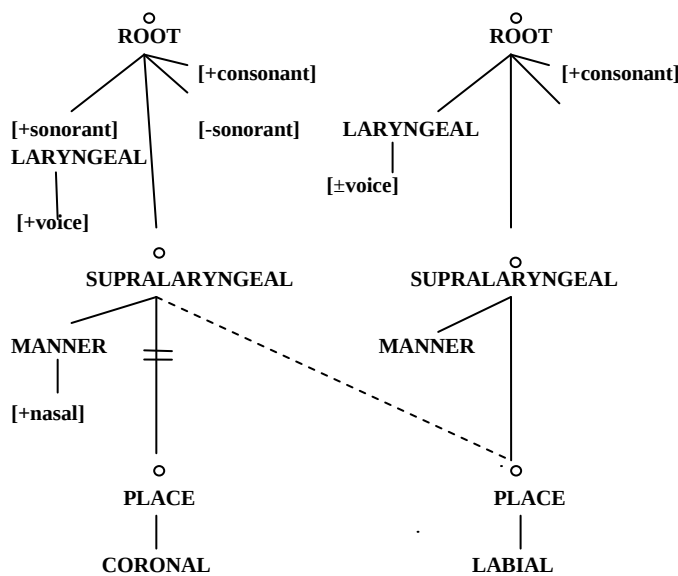


Figure 11: Representation of assimilation of labial sound leftwards to supralaryngeal node.

Waqo (1981), Beneyam (1988), and Dejene (2010) describe the assimilation processes of the dialects of *Mecha*, *Rayyaa*, and *Kamise Oromo*, respectively. All these studies, according to Dejene and Devardhi (2013), lack descriptive adequacy. Thus, in their article, they describe the language giving considerable attention to the process of assimilation based on the major dialects that has better descriptive adequacy. They emphasize that assimilation in Oromo is more of morphophonemic process and takes place mainly at word boundaries. Kebede (1994) analyzes the *Baatee* dialect Oromo theoretically. The study represents palatalization of the dialect using the theory of Feature Geometry that branches from Autosegmental Phonology. It emphasizes that consonants *n*, *l*, *d*, *t*, *t'* and *s* are palatalized in the environment of an underlying high front vowel *i* or palatal semi-vowel *y* that may or may not directly appear with universal assumptions about

palatalization process across languages. In Baate dialect *Afan Oromo* a root verb may end in a voiced alveo-dental obstruent as in *yaad* ‘worry’ followed by the causative suffix *-isiis* – palatalizes to *j* in *yaajisiis* ‘he makes find/it will make’. In representing the assimilation process, Kebede has omitted features that are not relevant for the representation of the palatalization process from the tree features he adopted for representation of the process. He, for example, represents *d* to *j* palatalization as in *fid- is- is- ∅- a* → *fijisiisa* (bring - caus₁ - caus₂ - 3sgm - imperf ‘he makes bring / it will make bring,’) as follows:

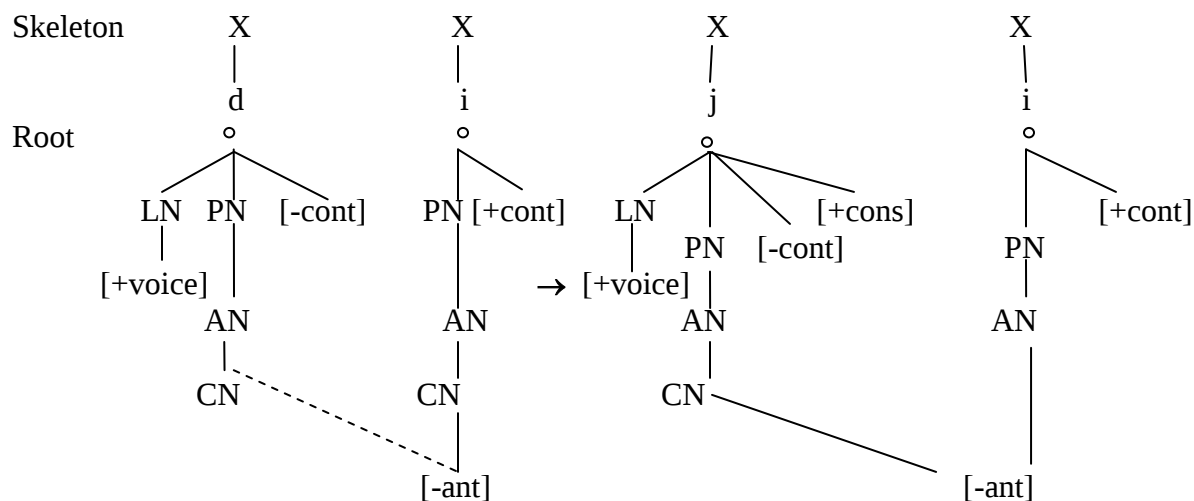


Figure 12: Representation of *d* to *j* palatalization (Kebede, 1994: 26)

For all palatalization processes he identified in the dialect, Kebede (1994) uses features that are only relevant to the palatalization process. He doesn't use other features that help one to represent other phonological assimilation processes. Alemayehu (1991) identifies some assimilatory processes in Amharic namely: voice assimilation, palatalization, labialization, nasalization and nasal assimilation in his article entitled “Assimilation in Amharic”. It is one of the studies that represent assimilation as spreading of feature as a process which adds an association line in feature hierarchy. Alemayehu assumes McCarthy's (1988) model of Feature Geometry in his representation. He for example, represents devoicing as in the following figure.

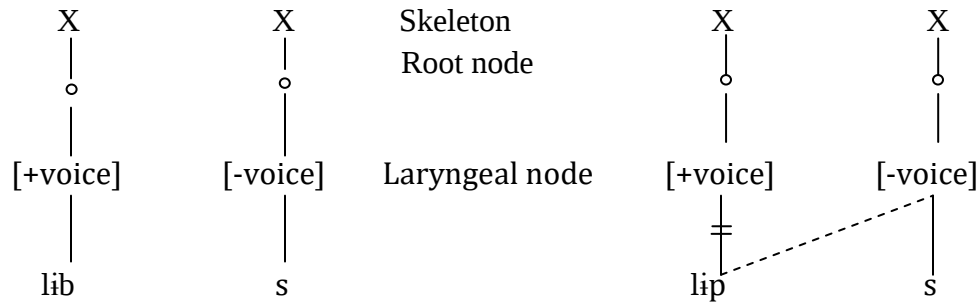


Figure 13: Representation of devoicing of *b* to *p*. Alemayehu (1991)

None of the studies on *Afan Oromo* dialects on assimilation is on ABAO dialect and only one work, i.e. Kebede (1994) is based on Autosegmental Phonology. Even this study is only on one aspect of assimilation; palatalization. This unit of the study, thus, tries to describe the assimilation process of the dialect in general and represent each process using Feature Geometry model that branched from Autosegmental Phonology.

In ABAO, consonant assimilation occurs where a segment becomes phonetically more similar to an influencing segment. This Dialect of *Afan Oromo* exhibits two types of assimilations. They may be referred to as place and manner assimilation that can be partial or total. These processes are discussed and represented by Feature Geometry model given in 9 after brief description of each process.

3.2.1 Place assimilation

Under place assimilation, we discuss the assimilation of alveolar stops /t/ and the velars /k, g/. In ABAO, /t, d, k, g/ are subject to regressive assimilation for place of articulation before the following plosives. The phoneme /t/ changes into voiceless velar stop and voiced bilabial stop and the nasal /n/ in the dialect. This can be formalized as in (25), (26) and (37) below.

(25)

/t/ → [k] / ____ /k/. The following are the examples:

- a) / gama-tti-koot-u/ → [gamákkootu]
 other side-Loc-come-2sg 'come to the other side'

b) /fardda-tti- kor-i/ → [farddákkori]
 horse-Loc- mount-2sg ‘mount the horse’

In both (25) a. and b, the voiceless alveolar /t/ has changed into voiceless velar stop [k] under the influence of the following voiceless velar stop /k/ after the elision of the vowel followed by it. Apart from assimilation, there is vowel deletion. The voiceless alveolar /t/ also changes into voiced bilabial stop in ABAO. This process can be shown as in (26) below.

(26)

/t/ → [b] /___ /b/

a) /koott-u-baj-i/ → [koobbáji]
 come-you- out-2sg ‘you go out’
 b) /ʔala-tti-buus-i/ → [ʔalábbuusi]
 out-to-throw-2sg ‘throw out’

Similar to /t/, phonemes /k/ and /g/ are subject to regressive assimilation. This process is evidenced through the following examples.

(27)

/k/ → [n] /___ /n/

a) beek-n-a → [béenna]
 know-1pl- Imp. ‘we shall knew’
 b) daak-n-a → [dáanna]
 swim-1pl-Imp. ‘we shall swim’

(28)

/g/ → [n] /___ /n/

a) fig-n-a → [fínna]
 run-1pl-Imp. ‘we shall run’

b) diig-n-a → [dínna]
 destroy-1pl-Imp. ‘we shall destroy’

As exemplified above under (25) and (26) the phoneme /t/ assimilates to [k] and [b] respectively. If the phoneme at word boundary is a vowel sound, elision of the vowel takes place before assimilation. This is evidenced through the examples under (25) and (26) above. For the sake of clarity let us see one of the examples again.

In /gama-tti # koott-u/, which is actually pronounced as [gamákkooɬtu] ‘come to the other side’, first the vowel /i/ is elided and then, the coronal sound /t/ assimilates to the dorsal sound /k/ as the dorsal feature spreads leftwards to the preceding sound. Considering the Feature Geometry proposed by Clements (1985) as a rational model, the assimilation of the dorsal sound /k/ to the coronal sound /t/ can be represented as follows.

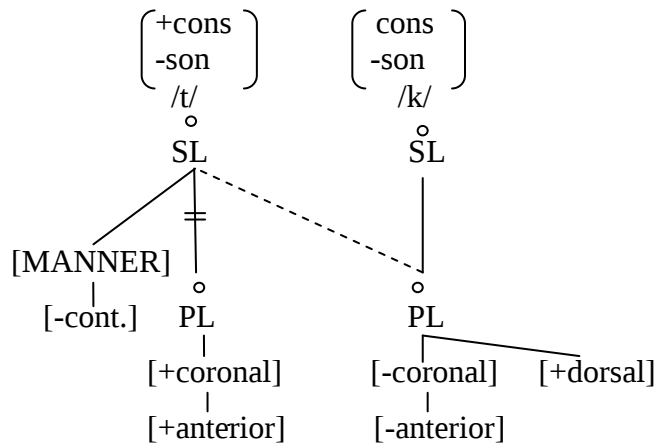


Figure 14: The process of delinking of the coronal sound /t/.

After the coronal sound /t/ is delinked from its coronal feature, it acquires the distinctive feature of the dorsal /k/ as in Figure 15 below shows. In such cases, the voiceless alveolar stop sound assimilates to the voiceless velar stop sound; the sound changes only in place of articulation and thus, the assimilation figures out as partial for both /t/ and /k/ are identical in manner i.e. they are [-continuant], but they differ in place of articulation; /t/ is a [coronal] while /k/ is a [dorsal] consonant.

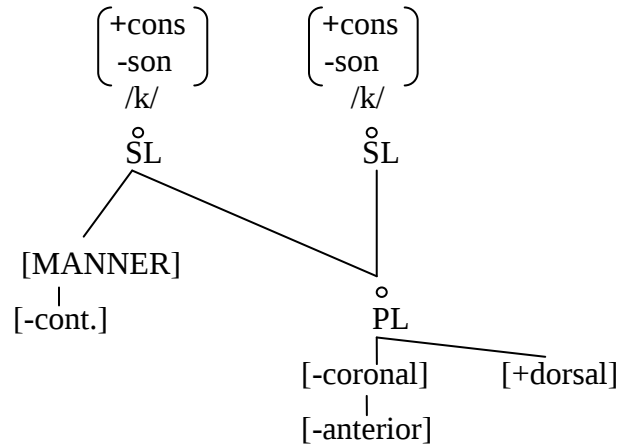


Figure 15: The output of the assimilation of the coronal /t/ to the dorsal /k/.

Similar to the spreading of the dorsal feature leftwards, spreading of the labial feature takes place for the assimilation process we discussed under (25) a and b above, where for example, /koott-ubaj-ɪ/ pronounced as [koobbáji]. The spreading of the feature can be represented by Feature Geometry model as follows.

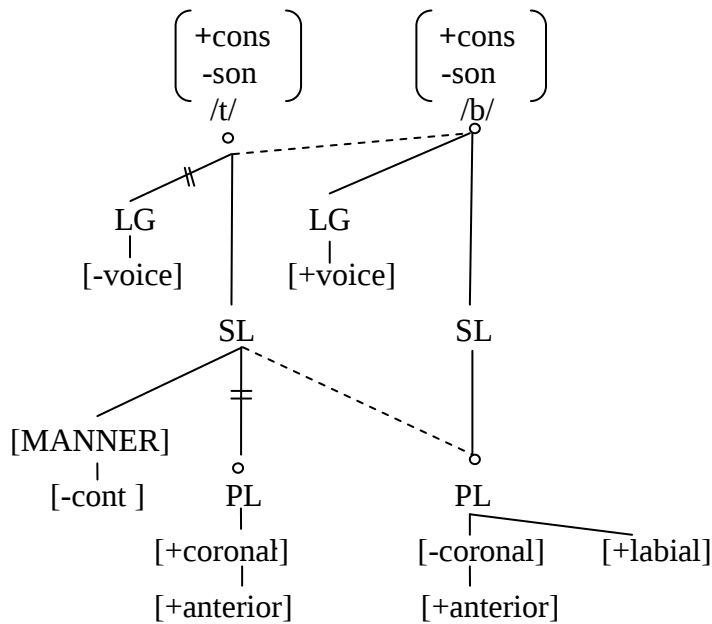
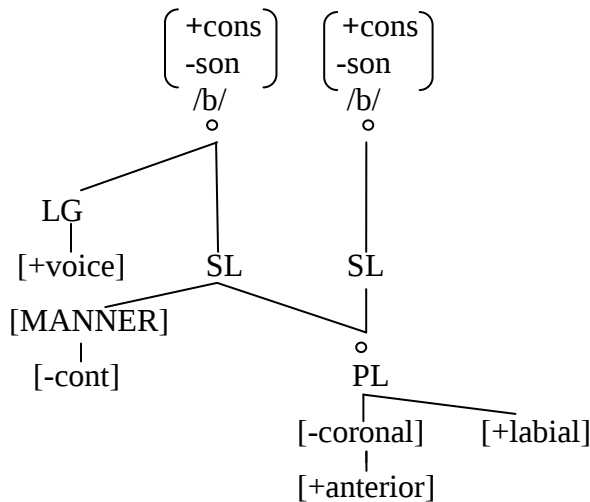


Figure 16: The process of delinking of the coronal sound /t/.

Hence, after the delinking process, the sound will have a different realization in pronunciation. In such cases, the voiceless alveolar stop sound is totally delinked. After spreading of voicing and labial feature the sounds become totally identical. Consider the representation of the process.



3.2.2 Homorganic nasal assimilation

Homorganic nasal assimilation takes place in different environments in ABAO. It occurs after /n/ within the morpheme or when the emphatic marker prefix /hin/ is followed by stop sounds /b, m, k, g/ ejective sound /k'/ fricative /f/, liquids /l, r/ and semi-vowels /w, i/.

77

(29) - (36) comprise of words with partial and total assimilation of the nasal phone /n/ to their respective phones.

(29) Prefix boundary + word with initial /b/

Underlying form	Output	Meaning
/hɪn + beeka/	[hímbeeka]	‘he knows’
/hɪn + barbaada /	[hímbarbaada]	‘he wants’
/hɪn + booja/	[hímbooja]	‘he cries’
/hɪn + bara/	[hímbara]	‘he learns’
/hɪn + barooda/	[hímbarooda]	‘It bellows’

(30) Prefix boundary + word with initial / m

Underlying form	Output	Meaning
/hɪn + morma/	[hímmorma]	‘he protests’
/hɪn + marɪʔata/	[hímmarɪʔata]	‘he discusses’
/hɪn + mooja/	[hímmooja]	‘he wins’
/hɪn + mura/	[hímmura]	‘he cuts’
/hɪn + mɪʔawa/	[hímmiʔawa]	‘it tastes good’

(31) Prefix boundary + word with initial /k/

Underlying form	Output	Meaning
/hɪn + kaasa/	[hínkaasa]	‘he picks’
/hɪn + kuusa/	[hínkuusa]	‘he stores’
/hɪn + kabala/	[hínkabala]	‘he slaps’
/hɪn + kolfā/	[hínkolfā]	‘he laughs’
/hɪn + kunnuunsa/	[hínkunuunsa]	‘he treats’

(32) Prefix boundary + word with initial /g/

Underlying form	Output	Meaning
/hɪn + guba/	[hɪŋguba]	‘he burns’
/hɪn + guddata/	[hɪŋggudata]	‘he grows’
/hɪn + gala/	[hɪŋgala]	‘he enters’
/hɪn + goga/	[hɪŋgoga]	‘it dries’
/hɪn + gurgura/	[hɪŋgugura]	‘he sells’

(33) Prefix boundary + word with initial /k’/

Underlying form	Output	Meaning
/hɪn + k’aba/	[hɪŋk’aba]	‘he owns’
/hɪn + k’aak’a/	[hɪŋk’aak’a]	‘he talks’
/hɪn + k’ooda/	[hɪŋk’ooda]	‘he divides’
/hɪn + k’ala/	[hɪŋk’ala]	‘he slaughters’
/hɪn + k’ara/	[hɪŋk’ara]	‘he sharpens’

(34) Prefix boundary + word with initial /f /

Underlying form	Output	Meaning
/hɪn + fajja/	[hɪmfajja]	‘he will be healed’
/hɪn + foojjaʔa/	[hɪmfɒɔjjaʔa]	‘he will be better’
/hɪn + faallessa/	[hɪmfaallessa]	‘he disorders’
/hɪn + feʔa/	[hɪmfɛʔa]	‘he wishes’
/hɪn + funaana/	[hɪmfunaana]	‘he gathers’

(35) Prefix boundary + word with initial /l/

Underlying form	Output	Meaning
/hɪn + /laala/	[hɪllaala]	‘he looks’
/hɪn + /lalaafa/	[hɪllalaafa]	‘it softens’
/hɪn + lola/	[hɪllola]	‘he quarrels’
/hɪn + lit’a/	[hɪllit’a]	‘he goes’

(36) Prefix boundary + word with initial /r/

Underlying form	Output	Meaning
/hin + rafa/	[hírrafa]	‘he sleeps’
/hin + raasa/	[hírraasa]	‘he jerks’
/hin + rip’a/	[hírrip’a]	‘he weakens’
/hin + rooba/	[hírrooba]	‘it rains’
/hin + rarraasa/	[hírrarraasa]	‘he hangs’

In line with Clement’s proposal, homorganic nasal assimilation in ABAO spreads from the place of articulation node (PL) on the right side leftwards to the supralaryngeal (SL) node on the left side and simultaneously spreads its distinctive features.

This phonological process occurs at the prefix boundary, as in the examples under (29) - (36) above and within the domain of morpheme as in {hanba} [hámba] ‘left over’. {dangaa} [dángaa] ‘territory’, {sink’ee} [sínk’ee] ‘stick’ {hanfala} [hámfala] ‘sash’. Based on the generalizations and the illustrative examples of the phonological process of homorganic nasal assimilation in ABAO, the situations of this process are as follows:

- (i) / nb / → [mb]
- (ii) / nm / → [mm]
- (iii) / nk / → [ŋk]
- (iv) / ng / → [ŋg]
- (v) / nk’ / → [ŋk’]
- (vi) / nf / → [ɲf]
- (vii) / nl / → [ll]
- (viii) / nr / → [rr]

As can be observed from the examples above, the coronal /n/ undergoes the process of assimilation when it combines with phonemes: /b/, /m/, /g/, /k/, /k’/, /f/, /l/, and /r/. In other words, when the coronal /n/ in the prefix boundary or within morpheme is followed by a word

with initial stops /b/, /g/, /k/ ejective /k'/, and fricative /f/, the partial homorganic nasal assimilation takes place and total homorganic nasal assimilation takes place when the nasal /m/ and the liquids /l/, /r/, are preceded by the coronal sound /n/ in ABAO as clearly shown in the examples presented above in (29) - (36).

Taking the Feature Geometry model into account, the assimilation of the nasal phone into the following sound, in ABAO, like in the word /hɪn + beeka/ → [hímbeeka] 'he knows' can be depicted in diagrams. The figures show the process of delinking of the nasality and spreading of certain feature back to the nasal phone.

The following are the diagrams that indicate the representations of nasals into their respective phones. The figure below illustrates the process of delinking the nasal coronal /n/ from its distinctive feature.

As the figure shows, the assimilation process consists in spreading the labial feature linked to the labial /b/ leftwards to the nasal coronal /n/, and simultaneously delinking the coronal feature of the nasal coronal /n/ from its own place of articulation.

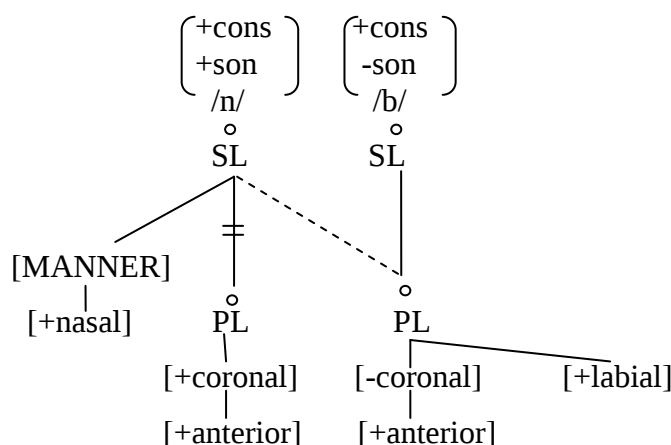


Figure 18: The process of delinking the coronal feature /n/

After the delinking of the nasal coronal /n/ from its distinctive feature, the nasal coronal /n/ acquires the distinctive features of the labial /b/ after the process of spreading and articulated as a nasal labial /m/ as in Figure 19 below shows.

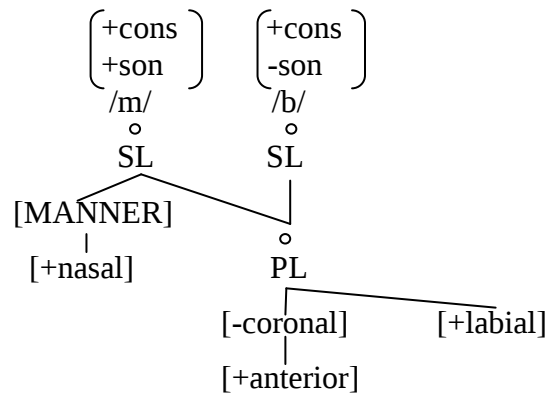


Figure 19: The output of the nasal assimilation of /nb/

Similar to the spreading of the place feature of /b/ to the /n/ leftwards, the feature of /m/ spreads to the /n/ phone to be pronounced as /m/ as in the example, /hɪn + mura/ [hímmura] ‘he cuts’ as shown in the following Figure 20.

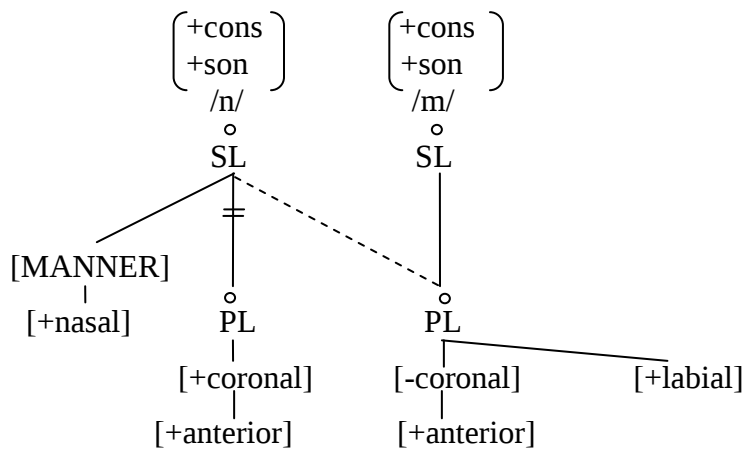


Figure 20: The process of delinking the coronal feature /n/

As Figure 20 shows, the alveolar nasal /n/ changes its place feature to the bilabial and thus, pronounced as /m/ due to the spreading of the labial feature to the left.

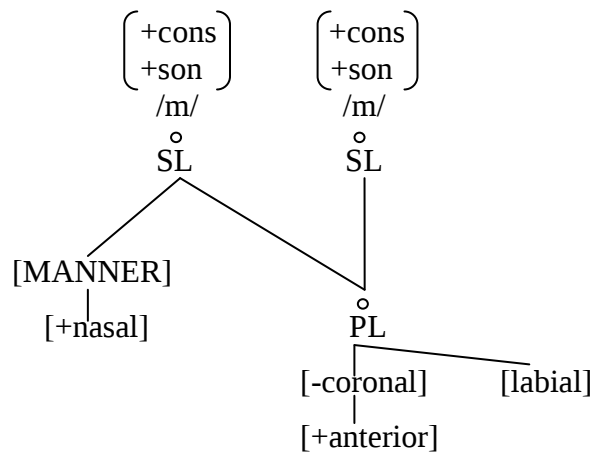


Figure 21: The output of the nasal assimilation of /nm/

In the word /hm + kuusa/ [hínkuusa] ‘he stores’ the coronal nasal /n/ assimilates to dorsal phone. The figure below illustrates the process of delinking of the nasal coronal /n/ and spreading of the dorsal feature from /k/ to the left.

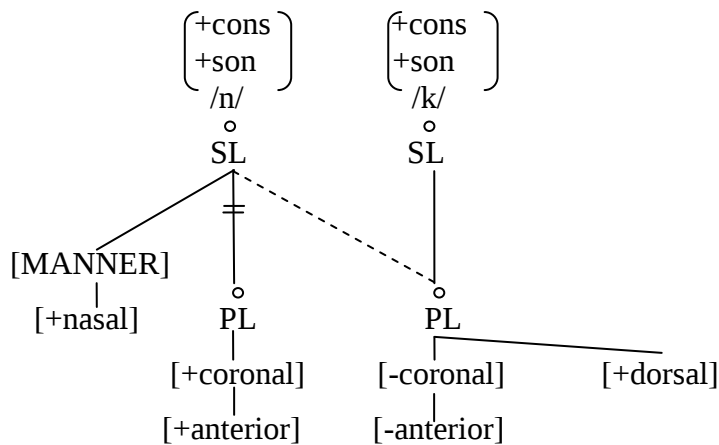


Figure 22: The process of delinking the coronal feature /n/

After gaining the dorsal feature from the following dorsal sound /k/, the nasal coronal /n/ is articulated as the nasal velar /ŋ/ which has the same place of articulation as the phoneme /k/.

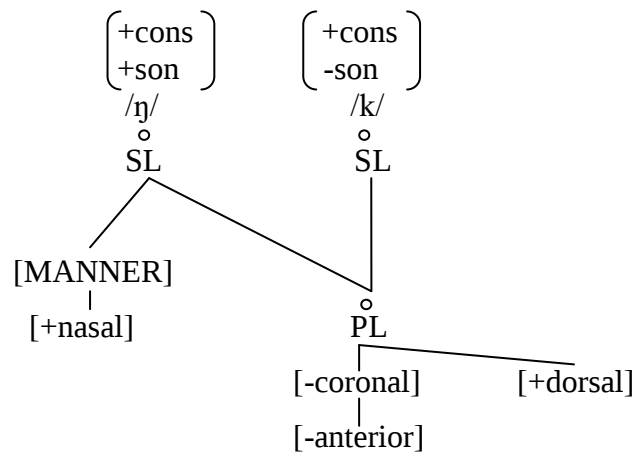


Figure 23: The output of the nasal assimilation of /nk/

Figure 24 below illustrates the process of delinking the coronal /n/ from its distinctive feature. As the diagram shows, it consists of spreading the dorsal feature linked to the velar /g/ leftwards to the nasal coronal /n/ as it is shown in the word /hɪn + gala/ [hɪŋgala] ‘he enters’ and simultaneously delinks the labial feature of the nasal /n/ from its own place feature.

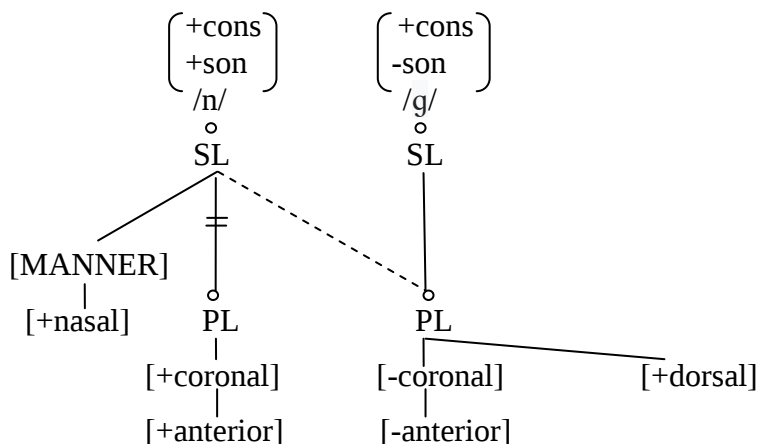


Figure 24: The process of delinking the coronal feature /n/

Figure 25 below shows that the nasal coronal /n/ acquired the distinctive features of the dorsal /g/ after the process of spreading. Therefore, the nasal coronal /n/ comes to be articulated as the nasal dorsal /ŋ/ which has the same place of articulation as the dorsal /g/.

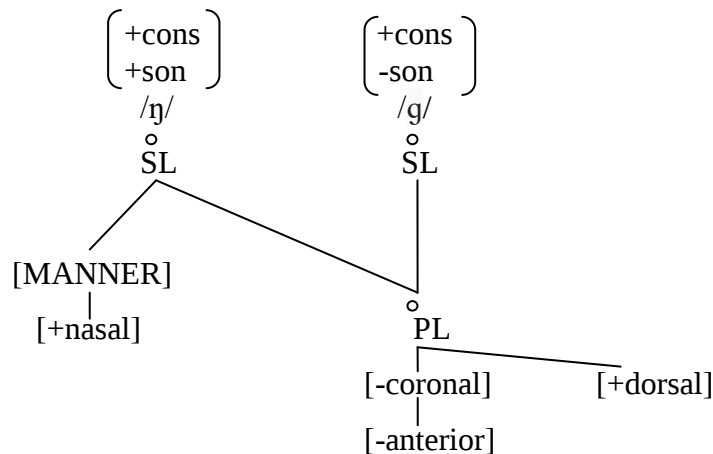


Figure 25: The output of the nasal assimilation of /ŋg/

Figure 26 below illustrates the process of delinking of the coronal feature. As the diagram shows, the assimilation process consists of spreading the dorsal feature linked to the dorsal /k'/ leftwards to the nasal coronal /n/, and simultaneously delinking the coronal /n/ from its own place of articulation as given in the example word /hɪn + k'ara/ [hɪŋk'ara] 'he sharpens'

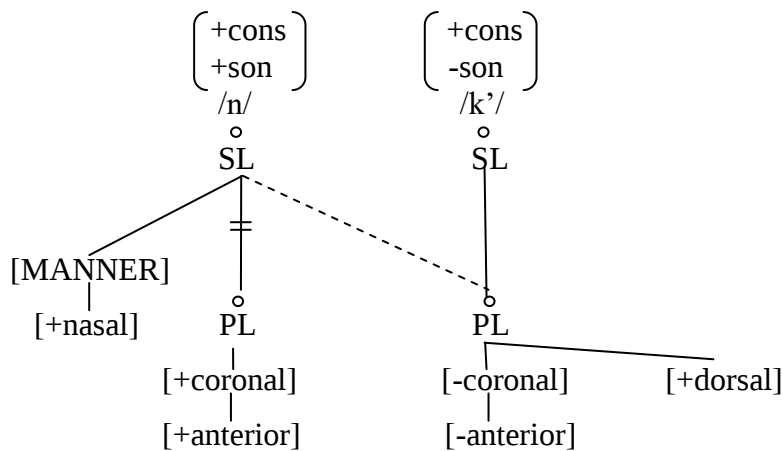


Figure 26: The process of delinking the coronal feature /n/

Figure 27 below shows that the nasal coronal /n/ comes to be realized as the nasal dorsal /ŋ/ due to the /k'/ influence which has the same place of articulation as the dorsal /k'/.

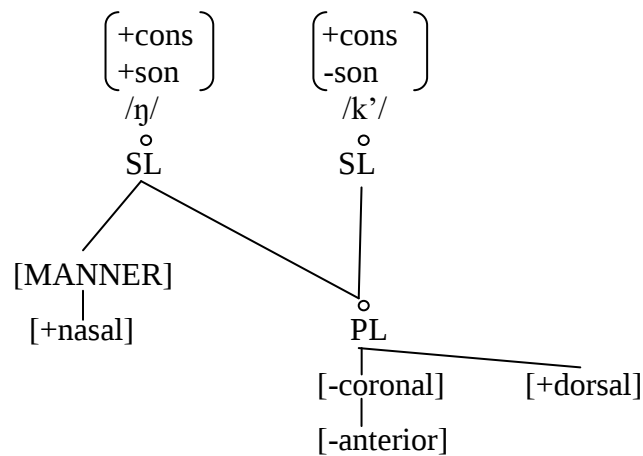


Figure 27: The output of the nasal assimilation of /nk'/

3.2.3 Assimilation of manner of articulation

So far we discussed the assimilation of the place feature to the nasal /n/. The assimilation can also be of manner features. This is evidenced through the example words under (35) and (36) above.

We raised homorganic nasal assimilation of the lateral and the trill sounds once more because the assimilation is limited to manner and differs in representation from that of place assimilation. The process can be represented in Feature Geometry model as follows. The following Figure 28 shows that the assimilation is only of manner. It shows that the lateral sound /l/ spreads its manner feature to the nasal sound /n/ as in /hm + lola/ [híllola] ‘he quarrels’.

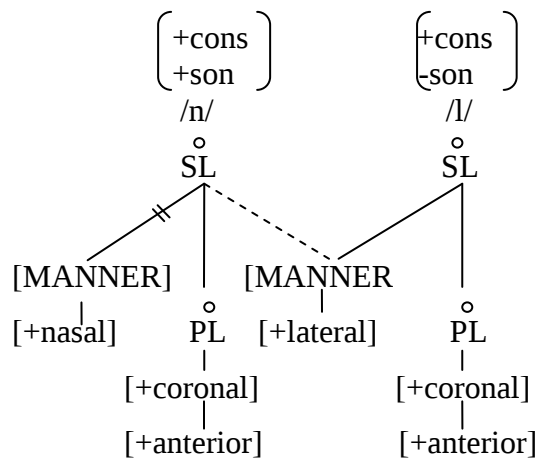


Figure 28: The process of delinking the nasal feature from /n/

After the nasal feature is delinked from the sound /n/, the sound gains the manner feature from the coronal sound /l/ and pronounced the same way because both are identical in place feature.

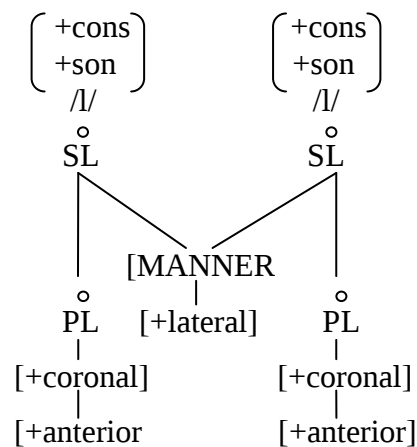


Figure 29: The output of the nasal assimilation of /nl/

The other homorganic nasal assimilation which is not affecting the place node is found in example like /hɪn + raasa/ [hírraasa] ‘he jerks’. In this case, the /r/ spreads its continuant feature to the preceding nasal sound. This process is represented by the following figure.

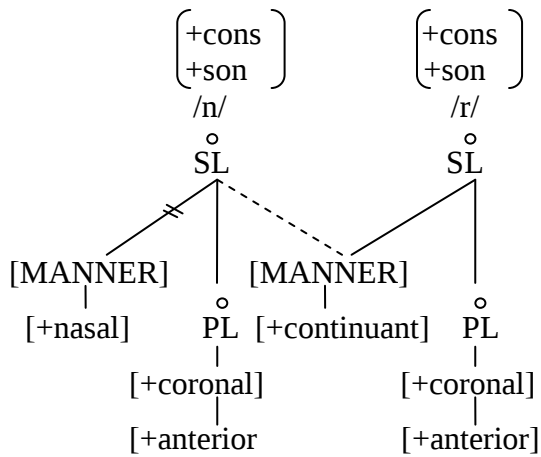


Figure 30: The process of delinking the nasal feature from /n/

After spreading of /r/ sound leftwards to the nasal sound, the nasality of a sound disappears and is replaced by a continuant feature for the realization differs in manner of articulation.

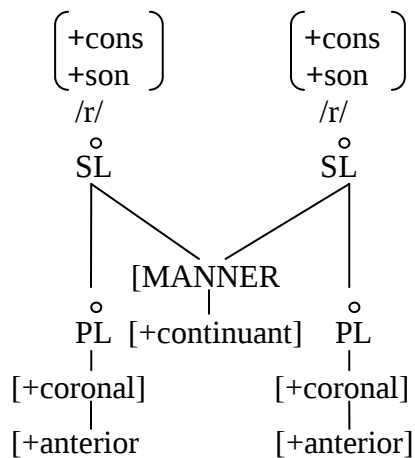


Figure 31: The output of the nasal assimilation of /nr /

In ABAO the manner spreads also as in the following processes where the phoneme /t, d, k, g/ are assimilated to /n/ as in (37), (38), (27) and (28), respectively.

It would appear that the sonorants have more strength or influence than the plosives in the language. Certainly the nasals carry the load here, and later the w and j.

- (37) /t/ → [n] / ____ /n/
- a) bat-na → [bánnna]
 carry-1Imp.pl ‘we shall carry’
- b) bit-na → [bínna]
 buy -1Imp.pl ‘we shall buy’
- c) kat-na → [kánnna]
 run-1Imp.pl ‘we shall run’

- (38) /d/ → [n] / ____ /n/
- a) bad-na → [bánnna]
 flee-1Imp.pl ‘we shall flee’
- b) fid-na → [fínna]
 bring-1Imp.pl ‘we shall bring’

As one can see from the example given under (37) above, the voiceless alveolar /t/ has changed into voiced nasal stop /n/ under the influence of the following voiceless nasal stop /n/. This can be represented in the Feature Geometry model as in Figure 32.

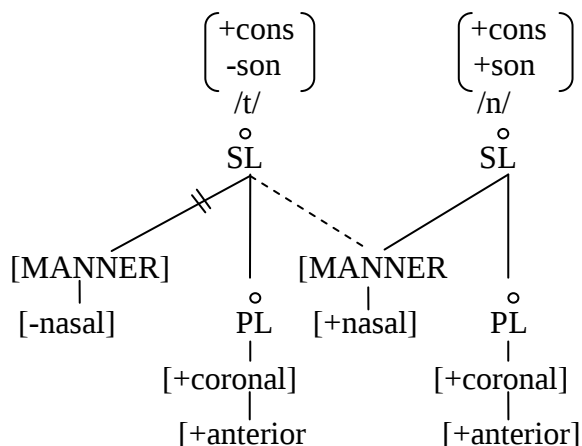


Figure 32: The process of delinking the nasal feature from /n/

After delinking of the /t/ sound from the word, the sound is realized as the nasal /n/. Thus, the sound is changed to nasal due to the acquisition of manner feature that took place.

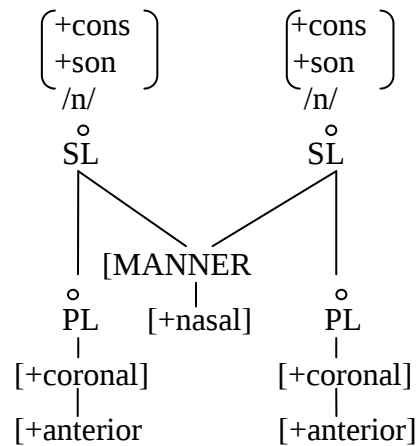


Figure 33: The output of the nasal assimilation of /tn /

In addition to the partial homorganic assimilation exemplified so far, the coronal /n/ undergoes the total assimilation that involves the change of both place and manner of articulation in ABAO. This happens when /n/ is followed by semi vowels. The words grouped under (39) below are example words for assimilation of /n/ to semi vowels.

(39) Prefix boundary + word with initial /w/

Underlying form	Output	Meaning
/hɪn + waada/	[híwwaada]	‘he roasts’
/hɪn + waraaba/	[híwwaraaba]	‘he fetches’
/hɪn + wakeefata/	[híwwak’eefata]	‘he worships’
/hɪn + waama/	[híwwaama]	‘he calls’
/hɪn + warana/	[híwwarana]	‘he stabs’

(40) Prefix boundary + word with initial /j/

Underlying form	Output	Meaning
/hɪn + jaasa/	[híjjaasa]	‘he drives out’
/hɪn + juusa/	[híjjuusa]	‘it laughs (hyena)’
/hɪn + jaada/	[híjjaada]	‘he thinks’
/hɪn + jaala/	[híjjaala]	‘he tries’
/hɪn+jaap’p’ata/	[híjjaap’p’ata]	‘he mounts’

The generalizations, and the illustrative examples of the phonological process of homorganic nasal assimilation in ABAO were indicated under (i) - (viii). There is also other circumstance of the assimilation process which is based on total assimilation that can be put as follows.

(ix) /nw/ → [ww]

(x) /nj/ → [jj]

The total assimilation of /n/ shown under (ix) and (x) above depict the delinking of the nasal /n/ and assimilation of it to the glides. This process can be represented in Feature Geometry model as in the following figure.

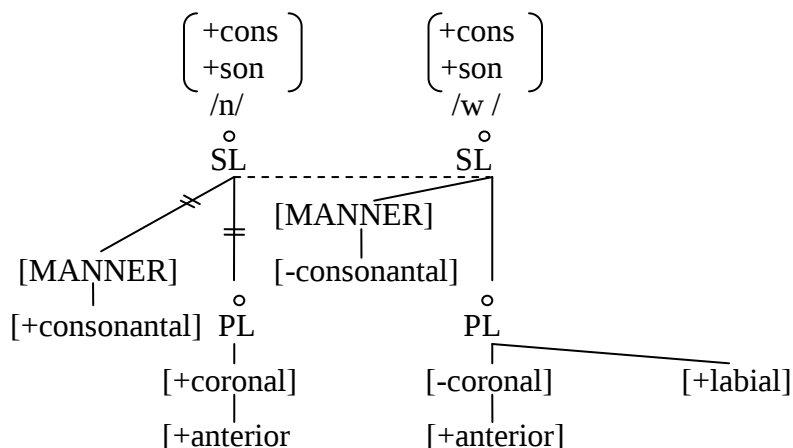


Figure 34: The process of delinking of the nasal and coronal features from /n/

As the figure shows both the manner and place features are delinked from the nasal sound /n/. Due to the total assimilation of the /n/ phone to the glide /w/ the representational figure will comprise of identical structures for the sound, after spreading of the place and manner feature to the left as the following figure shows.

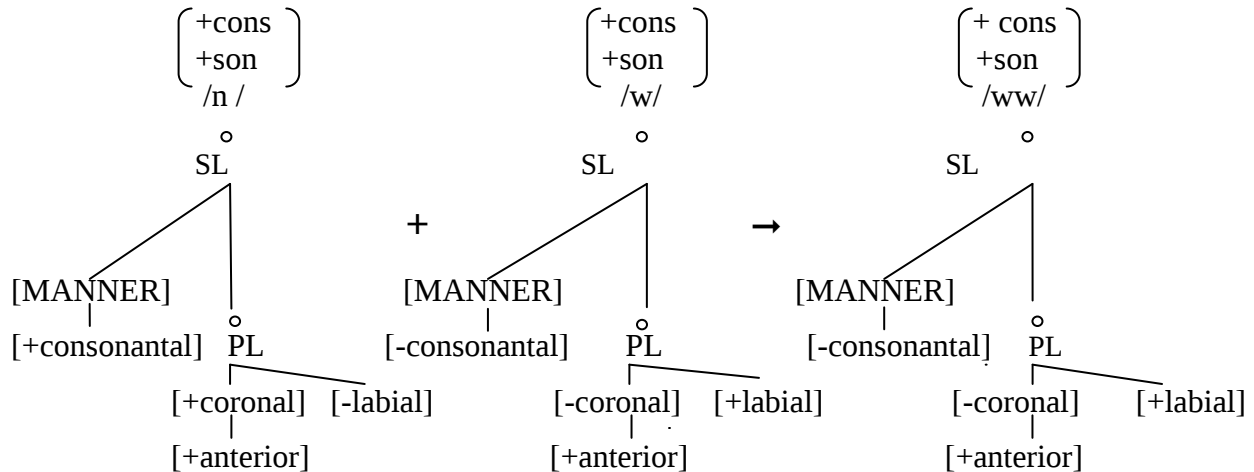


Figure 35: The output of the delinking of the nasal and coronal features from /n/.

3.2.4. Laryngeal assimilation

Research in Afan Oromo (Stroemer, 1987; Owens, 1985, and Lloret, 1995) reveals that Harar, Wollega, Borana and Orma dialects of the language involve a rightward spread of the whole laryngeal node in their phonology. According to Heine and Stroemer (1981) one dialect of Afan Oromo which appears to permit the spread of voice, but which doesn't have active ejection spread in the Oromo dialect is the Waata dialect. In ABAO, like in most of the dialects of Afan Oromo, the whole laryngeal assimilation is observed. The dialect has laryngeal contrasts in stops/affricates that vary from a two-way contrast for bilabials /p', b/, a three-way contrast for post-alveolars /tʃ, tʃ', dʒ/ and velars /k, k', g/, to a four-way contrast for alveolars /t, t', d, d'/. In Feature Geometry model, the laryngeal node dominates the feature [spread glottis], [constricted glottis] and [voice] (see figure 9). In ABAO, there are conditions in which [voice] and [constricted glottis] spread to the following segment. This condition will be discussed in the following two sub-sections of the thesis.

3.2.4.1 Voice assimilation

Voice assimilation is a cross linguistically well-attested process whereby one of two adjacent obstruent loses its original specification for voice and assumes that of other one. When the second one changes the voicing of the first one it is called regressive voicing assimilation; when the first one changes the voicing of the second one it is called progressive assimilation.

The two rules of voice assimilation can be formulated as in the following Figures 36 and 37. Citing (Kiparsky, 1982), Booij (1995: 59) states that since progressive assimilation is a more specific rule than regressive assimilation, progressive voice assimilation will apply first in accordance with the elsewhere principle which states when two rules compete, the more specific one gets priority, and blocks application of the other one once progressive voice assimilation has applied. He supported the idea by an example from Dutch word *zoutvat* ‘salt tub’, there by devoicing the /v/, the application of regressive voice assimilation is no longer possible anyway, since the second obstruent no longer bears the feature [+voice]. The following are the diagrams for progressive and regressive assimilation used by Booij respectively.

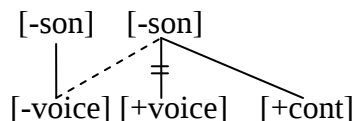


Figure 36: Representation of progressive voice assimilation. (Taken rom Booij, 1995: 60)

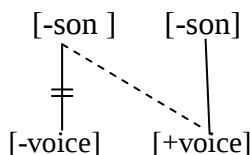


Figure 37: Representation of regressive voice assimilation. (Taken rom Booij, 1995: 60)

As we discussed so far, Booij (1995: 60) represented vowel assimilation of Dutch. Similarly, such kinds of voice assimilation are observed in ABAO. In ABAO, like other dialects of Afan Oromo, (cf. Lloret , 1995: 258 , Dejene and Devardhi,2013: 335) exhibits voice assimilation. In this dialect, the alveolar stop /t/ assimilates to the adjacent voiced obstruents: namely /b, d, g/. The following examples illustrate the voice assimilation in the dialect.

(41)	/k'ab-t-e/	→	[k'ábde]
	catch-3sf/2s-pf		'she/you caught'
	/tʃ'ab-t-e/	→	[tʃ'ábde]
	break-3sf/2s-pf		'she/you broke'
	/dId-t-e/	→	[dídde]
	refuse-3sf/2s-pf		'she/you refused'
	/fId-t-e/	→	[fídde]
	bring-3sf/2s-pf		'she/you brought'
	/diig-t-e/	→	[díigde]
	destroy-3sf/2s-pf		'she/you destroyed'
	/fiig-t-e/	→	[fíigde]
	run-3sf/2s-pf		'she/you ran'

In all the examples above, the alveolar sound /t/ changes to the voiced obstruent. It agrees in voicing with the following sound. Hence, it undergoes voice assimilation. Taking only one of the examples above, we can write the rule as follows, where the double cross-off shows that a connection is cut, and the dotted lines shows that a new connection is formed.

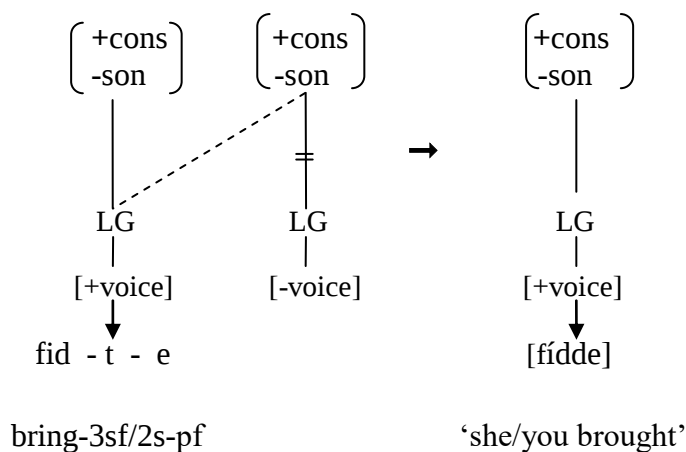


Figure 38: Representation of voice assimilation in Arsi-Bale Afan Oromo

3.2.4.2 Ejection assimilation

According to Lloret (1988: 16) the glottalized consonants in Afan Oromo are grouped into two for the morphophonemic behavior of each group differs. Segments /p', t', tʃ', k'/, the ejectives series, undergo common morphological rules thus form the first group and segments /d/ and /ʔ/; the implosive and the glottal stop, undergo different morphological rules and form the second group. In ABAO we find four ejective sounds namely: /p', t', tʃ', k'/. Ejective sounds differ from plain stops and affricates for they are made with a different air-stream. The feature [ejection] in ABAO assimilates to the following obstruent sound /t/. In fact, progressive laryngeal assimilation appears to be quite general in Oromo, since voicing also spreads in this way as shown in (41) above. Assimilation of [constricted glottis] in the language of Afan Oromo is discussed in the works of Owens (1985: 22) and Fallon (2002: 44). According to them, glottalization spreads from a stem-final consonant to a suffix-initial consonant as shown below.

- (42)
- | | | |
|-------------|-------------|------------------|
| /tʃ'ap'-ti/ | [tʃ'ap't'i] | 'it (f.) breaks' |
| /me:k'-te/ | [me:t't'e] | 'you turned' |
| /me:k'-ta/ | [me:t't'a] | 'you turn' |

Lloret (1988: 30) emphasizes the prevalence of the feature ejection to make a better characterization of the phonological processes of Afan Oromo in addition to articulatory features proposed by Halle and Clements (1983). [+ejection] is only assigned to sounds with two closures, one the glottal cavity and the other in the vocal tract (Lloret, 1995: 262), and the distinction is captured solely via laryngeal features; ejectives are [+constricted glottis; +ejection] the glottal stop and the implosive are [+constricted glottis; -ejection].

We also accept this idea for ABAO has ejective sounds that are basically differ from the implosive sound /d/ and the glottal stop /ʔ/ which share some feature with ejectives. Assimilation of the feature ejection to the following segment /t/ is evidenced through the examples in (43) below.

- (43)
- | | | |
|------------------|---|--------------------|
| /rip'-t-e/ | → | [ríp't'e] |
| hide-3sf/2s-pf | | 'she/you hid' |
|
/sup'-t-e/ | → |
[súp't'e] |
| mend-3sf/2s-pf | | 'she/you mended' |
|
/lit'-t-e / | → |
[lít't'e] |
| enter-3sf/2s-pf | | 'she/you entered' |
|
/fit'-t-e / | → |
[fít't'e] |
| finish-3sf/2s-pf | | 'she/you finished' |
|
/bo ʃ'-t-e/ | → |
[bóʃ' t'e] |
| carve-3sf/2s-pf | | 'she/you carved' |
|
/k'i ʃ'-t-e/ | → |
[k'í ʃ' t'e] |
| pick-3sf/2s-pf | | 'she/you picked' |
|
/d'ik'-t-e/ | → |
[d'ít't'e] |
| wash-3sf/2sg-pf | | 'she/you washed' |
|
/milik'-t-e/ | → |
[milít't'e] |
| escape-3sf/2s-pf | | 'she/you escaped' |

McCarthy (1989), cited in Lloret (1995: 264), treats ejective sounds as complex segments. He for example, represented the ejective sound /t'/ as in Figure 39 below.

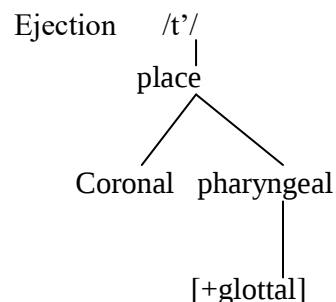


Figure 39: Representation of the ejective sound /t'/

Lloret (1995: 269) develops this idea and represented /p'/, /t'/ and /k'/ with two place of articulation (constriction); an oral place (labial, coronal, dorsal) and pharyngeal place, which in Oromo is redundantly [+glottal], because the language does not have true pharyngeals which are [-glottal]. She assumes the laryngeal feature [constricted glottis] is not present in the underlying representation of

a) /p'/

ROOT

Laryngeal Place

[const.gl]

Labial Pharyngeal

b) /t'/

ROOT

Laryngeal Place

[const.gl]

Coronal Pharyngeal

c) /k'/

ROOT

Laryngeal Place

[const.gl]

Dorsal Pharyngeal

59) representation of ejective sounds into cons

a)

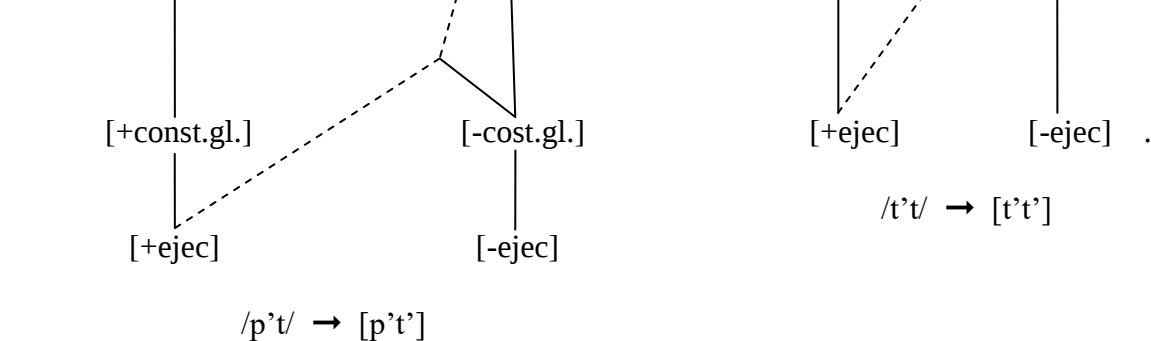
$\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}$
/p'/
LG SL
PL PL

$\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}$
/t'/
SL LG
PL PL

b)

$\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}$
/t'/
LG

$\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}$
/t'/
LG



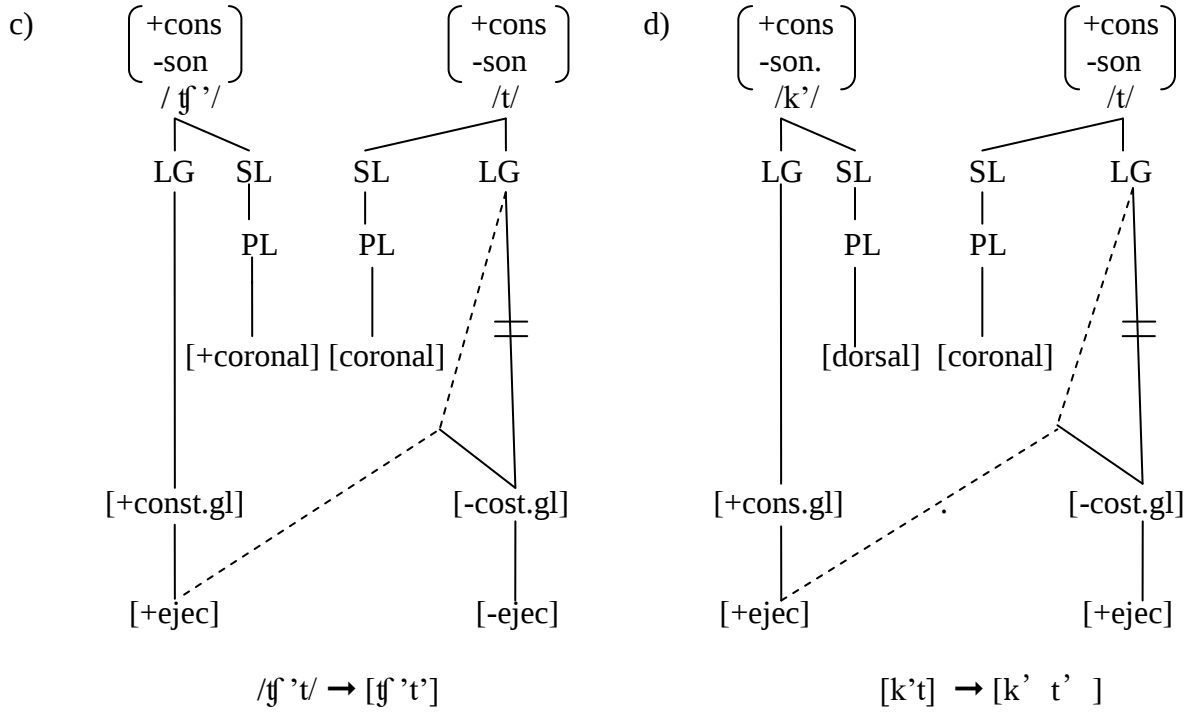


Figure 41: Representations of assimilations of ejectives to the following obstruent /t/.

As one can observe from Figure 41 above, the feature ejection which is dominated by constricted glottis under laryngeal node spreads to the following segment /t/ irrespective of the place of articulation (labial, coronal, dorsal). The coronal sound /t/ is also subject to regressive assimilation when it occurs before the implosive sound /d/. The following are some examples that are extracted from the gathered data.

- (44)
- | | | |
|--------------------|---|--------------|
| /baat- dʰ- e/ | → | [báádʰe] |
| carry- 1s- pf | | ‘I carried’ |
|
/ɲaat - dʰ- e/ | → | [ɲáádʰe] |
| eat-1s-pf | | ‘I ate’ |
|
/laat- dʰ- e/ | → | [láádʰe] |
| provide- 1s- pf | | ‘I provided’ |
|
/barat- dʰ- e/ | → | [baráádʰe] |
| learn-1s-pf | | ‘I learnt’ |
|
/fudat- dʰ- e/ | → | [fudáádʰe] |
| take-1s-pf | | ‘I took’ |

McCarthy (1989, 1991) argues that in languages without true pharyngeals, laryngeals should be represented as placeless segments with the laryngeal feature [+constricted glottis] only. The following Figure 42 a and b display the representations for languages with true pharyngeals and without true pharyngeals, respectively.

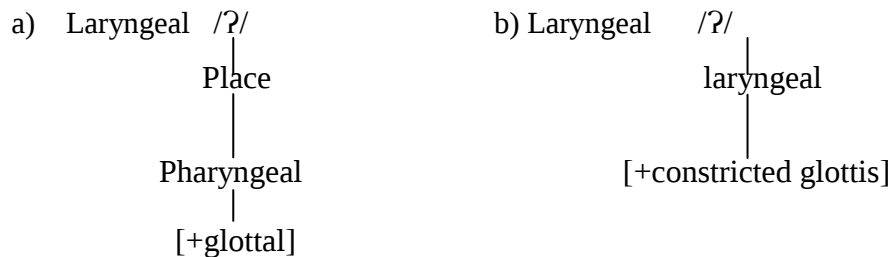


Figure 42: Representation of laryngeals for languages with and without true pharyngeals.

In addition to the representation of the glottal stop /ʔ/ which is similar to the representation of McCarthy (1989, 1991) shown in Figure 42 b above, Lloret (1995: 267) explains how the implosive sound /ɗ/ is represented. She represents the implosive as a simple segment as in Figure 43 below.

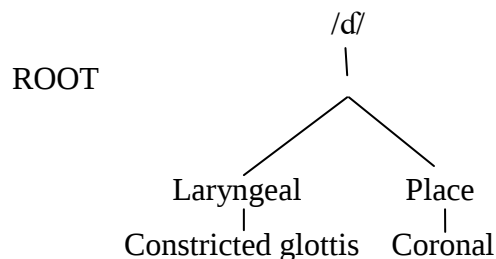


Figure 43: Representation of the implosive sound

Taking the representation of the implosive sound in Figure 43 above, the assimilation of the implosive sound /ɗ/ to the preceding sound /t/ in ABAO can be represented as in the following Figure 44 below.

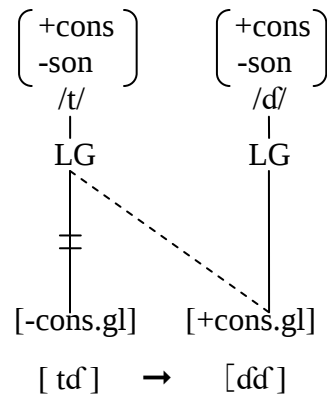


Figure 44: Representation of the assimilation of the coronal /d/ to the coronal /t/.

In contrast to the assimilation of ejectives discussed under 3.2.4.2, the coronal ejective does not assimilate to the nasal, but rather undergoes a special change of metathesis and implosionization. The metathesis that occurs due to the co-occurrence of the coronal ejective and nasal and other metatheses observed in the language will be discussed in the next sub-section of the thesis.

3.2.5 Metathesis

Metathesis is a Greek term for ‘transposition’, which refers to re-arranging or re-ordering of segments, mainly of sounds or syllables in a word; sometimes it involves re-ordering of words in a sentence (Crystal, 2003: 291; Buckley 2011: 1). Metathesis, according to Chomsky and Halle (1968: 36), “is a perfect common phonological process” by which the linear ordering of segments switches; in which case the original order is considered the input while the other is considered as the result of metathesis (output).

Lloret (1988: 65) asserts that in Oromo an ejective alveolar stop /tʰ/ and alveolar nasal /n/ undergo special metathesis. She supported her claim with the examples in (45) below.

- (45)
- | | | |
|------------------|---|-------------------|
| fitʰ-n-a | → | [fɪnd̪a] |
| finish -1pl-impf | | ‘we shall finish’ |
| | | |
| litʰ-n-a | → | [lɪnd̪a] |
| enter-1pl-impf | | ‘we shall enter’ |

This phonological process is related to the coronal obstruent assimilation to a nasal. In both cases the rules take place to avoid sequence of coronal obstruent followed by a nasal because the language prefers sonority decreasing sequence. What is being avoided is the bad sonority sequence (obstruent + nasal). The phonological process involves implosion of the plosive sound /t'/; (t' → d') in addition to the transposition of the sounds. We assume that this special metathesis is not limited to the coexistence of segments /t'/ and /n/ in ABAO. It is rather applicable to co-occurrence of the ejective velar stop sound /k'/ and /n/. We can take the following examples in (46) that can be used as proof.

- (46)
- | | | |
|-----------------|-------|-------------------|
| hak'-n-a | → | [hánda] |
| erase-1pl-Imp. | | 'we shall erase' |
|
lak'-n-a |
→ |
[lánda] |
| daub -1pl-Imp. | | 'we shall daub' |
|
milik'-n-a |
→ |
[milínda] |
| escape-1pl-Imp. | | 'we shall escape' |

ABAO disallows sequences of coronal and dorsal obstruents followed by a nasal. When such a sequence arise, the language gets rid of them by means of different processes according to the phonological environment of the sounds. In the language, coronal and dorsal non constricted obstruents assimilate to /n/, like in *laatna* [laanna] 'we feed' ; *fidna* [finna] 'we bring'; *fiigna* [fiinna] 'we run' , and *diigna* [diinna] 'we destroy' , while coronal and dorsal ejective obstruents dissimilate via metathesis like in the examples under (45) and (46) above.

It is also perceived that there is a common type of metathesis in ABAO. In this language, the ordering of two proximate and usually adjacent segments is reversed where the change is usually motivated by an attempt to preserve more acceptable phonotactics. Liquid and sibilant sounds undergo metathesis with stops /k, b/ and fricative /f/. The motivation for metathesis is maintaining sonority sequence principle. According to Clements (1990), Plosives are the least sonorant sounds followed by fricatives, nasal, liquids and semi vowels, respectively. Low vowels on the other hand tend to be more sonorous than high vowels. In ABAO, if we have the cluster of C₁ C₂

there is the tendency of C₁ to be more sonorant. According to Parker (2008: 55-90), the Sonority Sequencing Principle can be defined in three analogous ways:

1. Within any given syllable, there can be one, and only one, peak of sonority.
2. Every peak of sonority must correspond to a distinct syllable.
3. Within the onsets of syllables, sonority must rise, and within the codas of syllables, sonority must fall or descend.

He proposed the universal hierarchy of relative sonority that considers all groups of sounds beginning from the most sonorous sounds to the least sonorous sounds as low vowels, mid peripheral vowels, high peripheral vowels, mid interior vowels, high interior vowels, glides, rhotic approximants, flaps, laterals, trills, nasals, voiced fricatives, voiced affricates, voiced stops, voiceless fricatives, voiceless affricates and voiceless stops. The following are the examples that display the metathesis of consonants that obey the sonority sequencing principle.

(47)

/dubra/	[dúrba]	‘girl’
/gabra/	[gárba]	‘slave’
/kibriitii/	[kirbíitii]	‘match’
/ʔablee/	[ʔálbee]	‘knife’
/booksii/	[bóoskii]	‘box’
/taaksii/	[táaskii]	‘taxi’
/kofluu/	[kólfuu]	‘to laugh’

There exists also another type of metathesis in ABAO. Liquid sounds /r/ and /l/ and a preceding obstruent /g or b/ or fricative /f/ reverse in order after they become adjacent upon deletion of the intervening vowel.

(48)

[ʔagárte]	‘she saw’	[ʔáрге]	‘he saw’
[magárte]	‘she sprouted’	[máрге]	‘he sprouted’
[dabárte]	‘he passed’	[dárbe]	‘he passed’
[kofálte]	‘she laughed’	[kólfe]	‘he laughed’
[ʔáfur]	‘four’	[ʔarfáffaa]	‘fourth’

In non-linear phonology metathesis has failed to receive a good characterization. For example, Hume (1998), cited in Hume (2001: 4), says that some instances of CC metathesis are particularly difficult to analyze given the recognized principles of non-linear phonology, such as the ‘No Line Crossing convention’.

The analysis of the occurrence of consonants and vowels on distinct tier was first proposed by McCarthy (1981) to account for the binyan system of Arabic. In Arabic consonant segments are linked to the CV- tier independently of vocalic segments, A similar autonomy between vowels and consonants is precisely the motivation for separating the vocalic melody in Rotuman (Besnier, 1987: 214). Hulst (1983) and Smith (1984), cited in the article entitled “The Framework of Nonlinear Generative Phonology” by Hulst and Smith (no date: 28), suggest that several cases of metathesis are handled by exploiting the possibility that vowels and consonants are represented on different tiers as in the following representation for consonant and vowel segments.

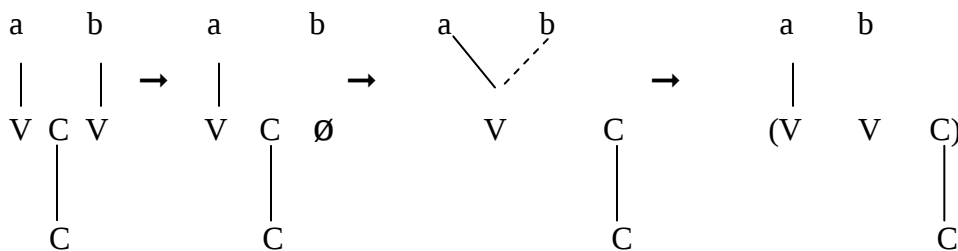


Figure 45: Representation of consonant and vowel (Hulst, 1983 and Smith, 1984).

Besnier (1987) asserts that if the separate tier analysis is esposed, and if the Universal Association Convention (MacCarthy, 1982: 194) of Autosegmental phonology are assumed to be valid, Rotuman Metathesis can simply be viewed as a rule by which the final V-slot of the CV-tier is deleted, thus leaving the feature matrix of the final vowel floating. Besnier's work was only on vowel metathesis. What we discussed for ABAO is consonant metathesis. Thus, we should have a different representation. Hence, We propose that the ABAO metathesis can be handled by Autosegmental phonology to preserve the syllable structure preference where the sonorants should be in relationship to the non-sonorants, and then the sounds could change around to meet the syllable criteria. The ABAO word /ʔalbee/ 'knife' can be represented autosegmentally as Figure 46 below.

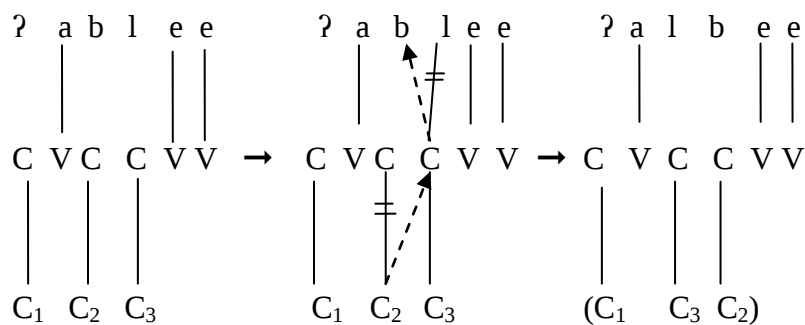


Figure 46: Representation of the ABAO word /ʔalbee/.

As one can perceive from Figure 46, the rule that states association lines do not cross is preserved for we modified the representation into a better account.

The figure demonstrates that the lateral sound /l/ changes its position in order to preserve the acceptable phonotactics of the language. The syllable structure of ABAO prefers the sonorants to occur before non-sonorants. The sounds /b/ and /l/ then, change around to meet the syllable criteria of the language.

The other phonological process which is materialized in ABAO is the lengthening of a vowel due to the loss of duration that is caused by the loss of adjacent consonant. The next section of the thesis portrays this aspect concisely.

3.2.6 Compensatory lengthening

We explained under 3.2.4.2 that glottalized consonants are grouped into two, leaving the ejectives from the glottal stop and the implosive aside for their morphophonemic behavior differs. Thus, this part of the thesis focuses on the phenomenon of compensatory lengthening which is the characteristic feature of the second group (/ʔ/ and /dʔ/) in ABAO.

Hayes (1989: 260) defines compensatory lengthening as the lengthening of a segment triggered by the deletion or shortening of another nearby segment. Later, Kavitskaya (2001: 1) explains that this kind of lengthening is characterized by the disappearance of an element accompanied by the lengthening of another segment. The common idea to the definitions of this phenomenon is that the lengthening is compensatory in so far as it is conditioned by the deletion of another segment in which the lengthened segment is usually a short vowel. When a segment within a syllable is deleted, the sound duration of the short vowel is extended to compensate for the loss of duration that is caused by the loss of adjacent element. Thus, the term compensatory lengthening (henceforth, CL) refers to a set of phonological phenomena wherein the disappearance of one element of a representation is accompanied by a corresponding lengthening of another element. Descriptively, CL of vowels represents the situation in which the lengthening of a segment is correlated with the deletion of a neighboring consonant. The consonant loss is followed by lengthening of a vowel which is correlated with the deletion of an adjacent consonant. This process is shown schematically as: $C_1VC_2 \rightarrow CVV$; which can be read as a closed syllable with a short vowel becomes an open syllable with a long vowel. Lloret (1991: 156) states that CL in Oromo exists. She explains that CL in Oromo occurs when the segments /ʔ/ and /dʔ/ delete in a coda position and lengthening of the preceding vowel automatically follows. Following the footsteps of Lloret, I suggest that CL in ABAO is often triggered by the deletion of a weight-bearing coda. It occurs when a one syllable root word that ends with glottal segments /ʔ/, /dʔ/ and /h/ as in (48) below are followed by another consonant.

(48)

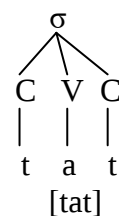
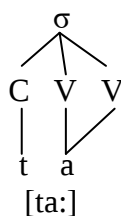
a)	/taʔ-t-e/	→	[táate]
	ok-2/3f-pf		‘It became ok’

- | | | | |
|----|--------------------------|---|---------------------|
| b) | /taʔ- sis-e/ | → | [taasíse] |
| | happen-CAUS-pf | | ‘I/He made happen.’ |
| c) | /fed- n-a/ | → | [féena] |
| | wish-1pl-impf | | ‘we wish’ |
| d) | /hod-t-an/ | → | [hóotan] |
| | suck-2pl-pf ‘you sucked’ | | |
| e) | /hid- na/ | → | [hína] |
| | tie-1pl-impf | | ‘we shall tie’ |
| f) | /bah-t-e/ | → | [báate] |
| | leave-2/3f-pf | | ‘you/she left’ |
| g) | /bah-s-e/ | → | [báase] |
| | leave- CAUS-pf | | ‘he put out’ |
| h) | /doh-s-e/ | → | [dóose] |
| | burst- CAUS-pf | | ‘he burst’ |

Since the early autosegmental models provided satisfactory solutions to prosodic properties of strings, such as tone and stress, they were extended to account for other phonological processes including CL. The central insight of CV phonology which was accepted by all later autosegmental approaches to CL is that the deletion of a segment happens only on the segmental tier, which leaves an empty slot on the prosodic skeletal tier.

The melody from the preceding vowel subsequently spreads to the following empty position, resulting in long vowel. Here is the organization of the syllable CV theory which is adapted from Hayes (1989) by (Kavitskaya, 2001: 17).

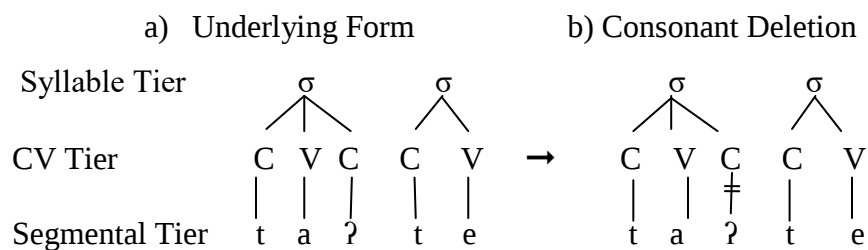
(49)



Elements of each tier called autosegments are not paired originally, but are independently ordered throughout the process of derivation. In the process, every vowel segment is associated with a V-slot and every consonant with a C-slot on the skeletal tier.

Although the rule is a one-to-one linking of vowels and the V- slots on the skeletal tier, it is possible to find one vowel segment linked into two V-slots.

The phenomenon where a single vowel is doubly linked with two V-slots is called compensatory lengthening (Goldsmith, 1990: 73). Figure (47 a-d) illustrates the representation of compensatory lengthening in the Autosegmental Phonology framework using the ABAO word [táate] ‘It/she became ok.’



The Figure 47 b) displays that the segment /ʔ/ deletes from a coda position and lengthening of the preceding vowel /a/ automatically follows as in Figure 47 d). Hence, compensatory lengthening occurs.

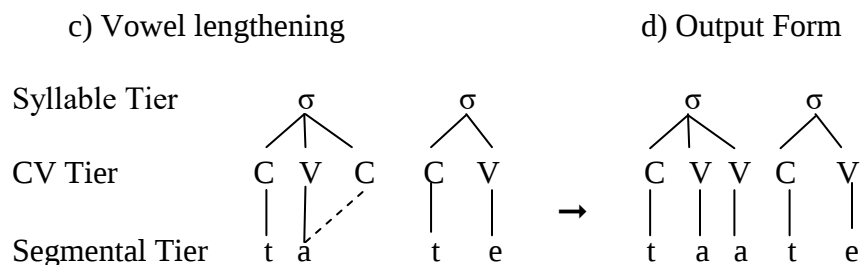


Figure 47: Representation of compensatory lengthening of ABAO word / taʔte /.

As can be depicted from the figure, the loss of the glottal stop sound /ʔ/ is followed by the lengthening of the vowel /a/. It is verifiable that the deletion of the consonant is compensated by

the vowel insertion. There is another phonological process that targets mainly vowels; Epenthesis. It is the insertion of a segment to break up the impermissible sequence of sounds. It will be discussed in section 3.2.7 below with its correspondent consonant in brief.

3.2.7 Epenthesis

Epenthesis (insertion) is the appearance of a new segment in a word. It is a phonological process whereby an element not present originally is introduced into the utterance usually to break up unwanted sequences.

Epenthesis may be divided into two types: excrescence, for the addition of a consonant, and anaptyxis for the addition of a vowel; consonant epenthesis is not common in languages, but vowel epenthesis is a common occurrence (Oyebade, 1998: 65). In phonology, epenthesis is the addition of one or more sounds to a word, especially to the interior of a word. In ABAO, excrescence exists at the initial position of words and syllables and vowel epenthesis occurs in the interior of the word and at word final positions. These phonological processes are characterized in the following subsection of the study.

3.2.7.1 Consonant Epenthesis

Most languages tend to insert glottal stops before vowel-initial words, at least in strong prosodic positions. Glottal stops are so common word initially because laryngealization occurs on word-initial vowels, to enhance prominence by boosting high-frequency energy (Garellek, 2013: 81). Hence, it is not surprising to see the glottal stop as the epenthetic consonant in word-initial position. Cross-linguistically it is common to see the glottal stop, due to its unmarked place, satisfying purely phonological requirements, such as onset (Lombardi, 2002: 224).

Glottal stop insertion will be analyzed as emergence of the unmarked value. Based on typological studies of consonant insertion, we argue that the glottal stop is the pure phonological, syllabification-driven epenthetic consonant in ABAO. Phonologically, glottal stop insertion can be motivated by the cross-linguistic tendency for a syllable to begin with an onset. In ABAO when a vowel occurs in word initial position, a glottal stop [ʔ] is inserted before it. Generally, word-initial glottal stop insertion is based on the property of ABAO syllable structure since no

word may begin with a vowel in phonetic form. So, if a word begins with a vowel in phonological form, a glottal stop consonant will fill the onset position. Like the examples below:

(50)

/abdʒuu/	[ʔábdʒuu]	‘dream’
/udaan/	[ʔudáan]	‘feces’
/eebba/	[ʔéebba]	‘blessings’
/ollaa/	[ʔóllaa]	‘neighbor’
/utubaa/	[ʔutúbaa]	‘pillar’

Another function of the glottal stop in the phonology of ABAO language is separating two consecutive vowels which are qualitatively different. If two different vowels come one after the other the glottal stop is inserted to break unallowed sequence for there are no diphthongs occurring in the language as in [dʒia] → [dʒiʔa] ‘month’ and [baessa] → [baʔessa] ‘better’.

Katamba (1989: 156) argues that the CV theory is required to perform three main tasks: stating universal principles in order to govern syllable structure, stating syllable structure typology and stating language-specific rules to syllable template. On this principle, the syllable is assumed to have three tiered structures that consist of the syllable tier, a CV tier and a segmental tier. More importantly, the CV tier is sometimes referred to as the skeleton tier. The epenthesis of a segment /ʔ/ can be represented using the CV Phonology with the addition of an insertion tier in between the syllable and CV tiers as in Figure 48 below.

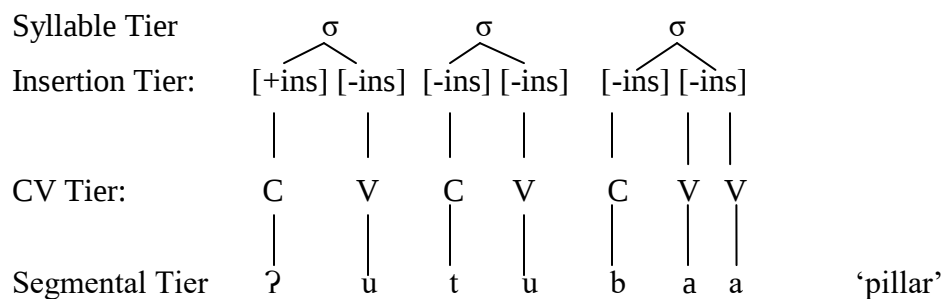


Figure 48: Representation of the epenthesis of a segment /ʔ/

3.2.7.2 Vowel Epenthesis

The term vowel epenthesis refers to the process in which a vowel is added to an utterance. There is a purpose for the adjunct of the vowel in words. In most cases, the function of vowel epenthesis is to repair an input that does not meet a language's structural requirements. In particular, vowel epenthesis allows the surfacing of consonants that underlyingly appear in phonotactically prohibited contexts.

Different languages have different qualities for their epenthetic vowels, and some qualities are found more commonly than others. Lombardi (2003: 1) tries to prove that the differences in epenthetic vowels are not arbitrary and she provides an account for the variation among languages by using ranked markedness constraints. She suggests that the choice of the epenthetic vowel depends on the vowel system of a certain language where it is going to be the least marked one. In terms of markedness, she states that the vowels [i] and [ə] are the least marked because they are both back and unrounded. As a result, if [i] is present in one language, it will be epenthetic. If [i] is not present and the schwa is, then the schwa is going to be epenthetic. If neither [i] nor [ə] is present, the vowel [ɪ] is going to be the epenthetic vowel. So in five vowel system [i, a, e, o, u], she suggests that the epenthetic vowel will be either [i] or [a] depending on the particular ranking of features of a given language.

ABAO has five vowel system that do not include vowel sounds [i] and [ə] and the least marked vowel in the language is [ɪ], thus, an epenthetic vowel in ABAO is the high front unrounded vowel [ɪ]. As a grammatical rule, epenthesis often breaks up a consonant cluster or vowel sequence that is not permitted by the phonotactics of a language. ABAO vowel epenthesis appears to be morphologically conditioned. The language does not allow clusters of three consonants. When such clusters would arise through affixation, vowel [ɪ] is inserted between the second and third consonants. When the certain morphemes are affixed to the root, three clusters of consonants emerge, consequently the need for the insertion of the epenthetic vowel instigates. Take the following examples in to account.

(51)

ʔarg-na	→ ʔargna →	[ʔárgina]	‘we see’
gogs-ta	→ gogsta →	[gógsita]	‘you dried’
gudd-sa	→ guddsa →	[gúddisa]	‘he raises’
kolf-siis-a	→ kolfsiisa →	[kolfsíisa]	‘he makes laugh’
ʔobs-tuu	→ ʔobstuu →	[ʔobsítuu]	‘patient’
furd-na	→ furdna →	[furdína]	‘fattness’

Like the insertion of the glottal stop at initial position of a syllable for ABAO word cannot begin with a vowel, the insertion of the epenthetic vowel is manifested for the three consonants cannot come together and therefore, must be separated by an epenthetic vowel [i]. The insertion of epenthetic vowel can be represented autosegmentally as in the following Figure 49.

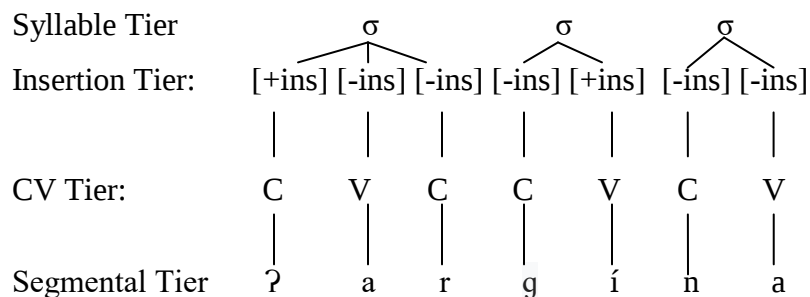


Figure 49: Representation of ABAO epenthetic vowel [i].

The Phonotactics of ABAO does not allow three clusters of consonants at any position of a word, but as we can see from the figure above, due to the affixation of the first plural and present indicative morpheme, /r/, /g/ and /n/ occur one after the other. When such clusters exists the epenthetic vowel [i] inserted between the second consonant of the stem and the initial consonant of the affixed morpheme to conform to the arrangement of ABAO sounds.

Vowel epenthesis is also a common phonological process in dealing with loan words in many Languages, especially where the syllable structure of borrowed words do not obey the syllable structure requirement of the borrowing language.

According to Uffmann (2001: 1), vowel epenthesis is a process in loan word adaptation in order to satisfy the constraints on phonotactics and syllable structure in the borrowing language. Languages with a preference for CV syllable structure often epenthesize vowels in positions where they serve to break up consonant clusters or re-syllabify coda consonants.

ABAO, like most African languages, borrow a lot of lexical items from other languages. Some of the source languages of ABAO loan words include English, Amharic, and Arabic. However, in this thesis the discussion on vowel epenthesis is limited to English and Amharic loan words in ABAO. The constraints on phonotactics and syllable structure of English and ABAO are not the same. For instance, whereas it is permissible in English to have Onset and Coda consonants cluster, Onset and Coda consonant cluster is highly constrained in ABAO. Consonant cluster is only permissible at word medial position, where they serve as syllable boundaries, and even then there is still a constraint on the consonant sequencing.

Due to this Morpho-phonological constraint that ABAO poses, vowels are epenthesized in English loan words to generate valid output in conformity with the ABAO syllable structure requirements and also preventing the metathesis of consonants that might otherwise occur. ABAO insert a vowel [i] in between consonants and add a vowel at the end of every word to conform to the preferred syllable structure of ABAO. For example the following are loan words from English.

(52)

/kollɪdʒ/	→ [kollédʒi]	‘college’
/frɪdʒ/	→ [firíɪdʒi]	‘fridge’
/dɑns/	→ [dánsi]	‘dance’
/ɡriɪs/	→ [ɡiríisi]	‘grease’
/spɔort/	→ [ʔispóorti]	‘sport’

Similar to English loan words, Amharic loan words are also target to the insertion of the vowel [i] to conform to the syllable structure of ABAO. Examples under (53) illustrate the subject of concern well.

(53)

/kibirit/	→ [kibríiti]	‘match box’
/zäjít/	→ [sajíti]	‘oil’
/mäk’äs/	→ [mak’ási]	‘scissors’
/fook’/	→ [fóok’i]	‘story’
/kornis/	→ [kornísi]	‘ceiling’

As indicated in (53) above, final vowel epenthesis takes place in ABAO dialect. Almost all lexical items must end in vowels and this condition does not exclude loan words. Since ABAO is an open syllable dialect, a final vowel is inserted at the word final position of a loan word to conform to the open syllable structure of ABAO.

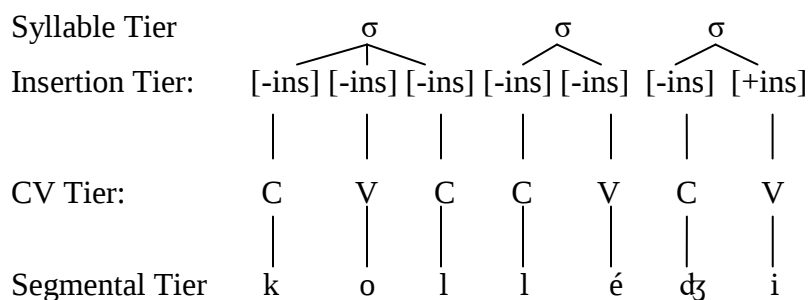


Figure 50: Representation of the insertion vowel [i] to conform the syllable structure of ABAO

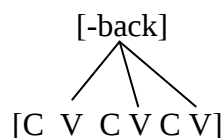
3.2.8 Vowel harmony

Vowel harmony is a phonological pattern in which vowels within the same domain - typically the word-share one or more phonological features, like lip rounding or tongue position (Katamba, 1989: 211; Casali, 2008: 496). It is a fascinating and fairly widespread phenomenon in world languages (Knowles, 2012: 4).

Vowel harmony can be approached from the viewpoint of Autosegmental Phonology (Goldsmith, 1976, 1990), which has played a role in shaping Non-linear Phonology approaches to vowel harmony. This brief overview of the autosegmental analysis serves to provide a basic background of theoretically-based support for the simplifying assumptions made in modeling vowel harmony. In the Autosegmental analysis, a set of harmonizing features should be identified and placed on a separate tier. The class of vowels with the harmonizing feature is identified, as is the set of any existing opaque vowels. The harmonizing features in the system should be associated with vowels, but they must do so following the Well-formedness Condition. This condition requires that every vowel be associated with a harmonizing feature, each harmonizing feature on its tier must be associated with a vowel, and lines of association are not allowed to cross one another (Katamba, 1989: 203-212).

Goldsmith (1976, 1990) discusses vowel harmony, which refers to the phenomenon that vowels in a certain domain (usually the phonological word) must agree for a specific feature, i.e., all bear the same value for roundness, height, backness, or a combination of features. According to him, Vowel harmony occurs in many African languages. To describe vowel harmony, the idea that distinctive features are not necessarily part of individual segments is also extremely useful: rather in such languages, distinctive features such as [round] or [back] are properties of larger domains than individual segments, such as the word, and are therefore allowed to link to all available positions in the word. This is exemplified for front/back harmony in (54):

(54)



Cases of harmony therefore provided evidence for which features could display autosegmental behavior, and the extent to which different types of vowel harmony are found (cf. van der Hulst and van de Weijer, 1995: 530). These provide evidence for the existence and autosegmental activity of different distinctive features.

ABAO does not have vowel harmony as a regular phenomenon, but there are cases where this phonological process appears. When the ABAO root verb with final consonants /j/ and /ʔ/ are followed by the first or third person perfective morpheme marker *-te* or first person plural perfective morpheme marker *-ne*, the root and the suffix vowel belongs to the same harmonic (vowel raising) set as the suffix vowel. If a suffix vowel belongs to a particular set, then any root to which the suffix is attached to will also be from the same set; this is demonstrated below in the examples under (55) a and b.

(55)

- a) /gaaj-t-e / → [géette] ‘you/she reached’
 reach -2/3sg-pf
- /kaaj-t-e / → [kéette] ‘you/she put’
 put -2/3sg-pf
- /daaj-t-e / → [déette] ‘you/she bore’
 bear -2/3sg-pf
- /taaʔ-t-e/ → [téette] ‘you/she sat’
 sit -2/3sg-pf
- /dandaʔ-t-e/ → [dendéette] ‘you/she could’
 can-2/3sg-pf
- b) /gaaj-n-e / → [géenne] ‘we reached’
 reach -1pl-pf
- /kaaj-n-e / → [kéenne] ‘we put’
 put -1pl-pf
- /daaj-n-e / → [déenne] ‘we bore’
 bear -1pl-pf
- /taaʔ-n-e/ → [téenne] ‘we sat’
 sit-1pl-pf
- /dandaʔ-n-e/ → [dendéenne] ‘we could’
 can-1pl-pf

The above examples under (55 a and b) state that a vowel that is [+low] becomes [-low] in the environment of a following vowel that is [-low]. The following autosegmental representations in Figure 51 a-d, illustrate vowel harmony in ABAO.

An autosegmental account can be given since the second segment of each of the words is [- low] tier, there is a tendency for this tier to make an automatic spreading across all the vowel segments of each word and affect all segments generally.

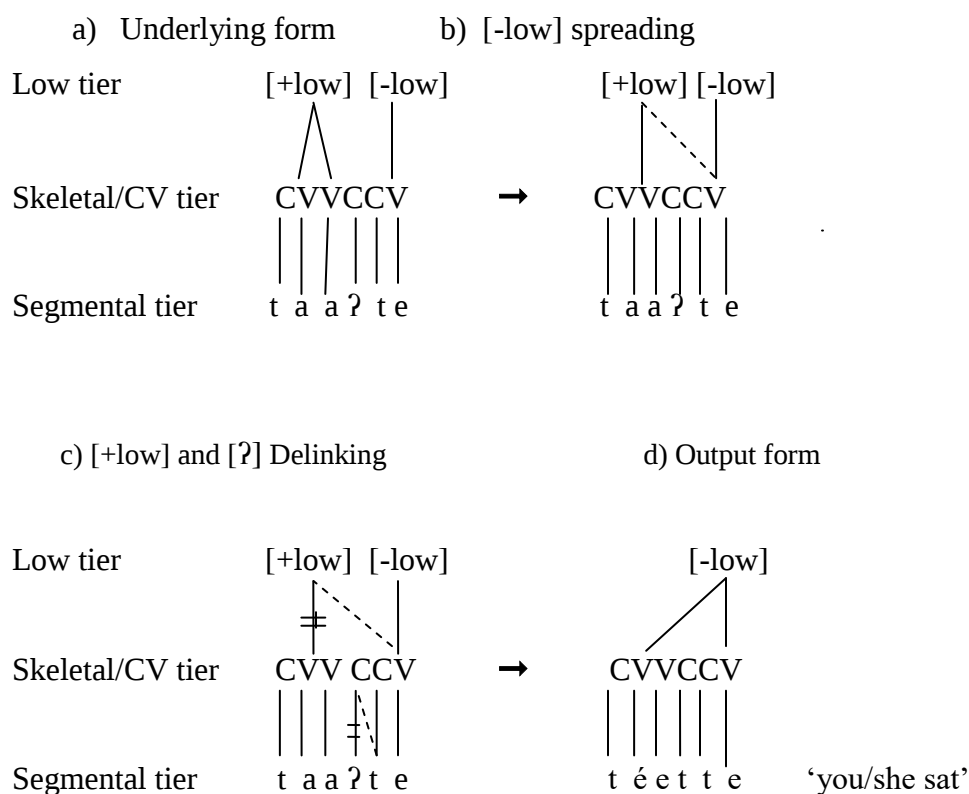


Figure 51: Representation of vowel harmony in ABAO.

The vowel harmony in ABAO is governed by the [low] parameter as shown in Figure 51. The ABAO vowel harmony can be described as a phonological process of regressive assimilation. The vowels in the segmental core of the word [tétette] are underspecified since they do not contain specification for the feature [low].

3.2.9 Dissimilation

Dissimilation refers to processes in which sounds become more auditorily distinct from other sounds in their environment. This allows for easier speech perception (Katamba, 1996: 94). For example, if $r \rightarrow l$ happens in a form containing another r , this is a dissimilation, e.g. $arbor \rightarrow arbol$ (Lass, 1988: 171). While dissimilation processes are in principle possible with any phonological feature (Suzuki, 1998), the most common cases involve dissimilation of tone, place, and laryngeal features. Alderete (1997: 7) states that it is a common observation in languages with vowel length that long vowels dissimilate when in adjacent syllables. This is also witnessed in ABAO and other dialects of Afan Oromo.

Dissimilation in Oromo vowel length is discussed by (Gragg, 1976; Lloret 1988; Alderete 1997; Fikadu, 2014). The examples in the first three scholars work fits within ABAO dissimilatory process while Fikadu's work differs from it for it is based on General Oromo language. Thus, we paid no attention to those dissimilatory processes discussed in Fikadu's work that are not in line with ABAO language.

The basic observation in Arsi-Bale dialect Afan Oromo is that, given a sequence of two consecutive syllables, only one syllable can have a long vowel. Focusing our attention on length dissimilation in this dialect, this pattern is exemplified with the morphophonemic alternations in (56 a - d) and (57 a and b). As shown in (56 a- d), the allomorphic variation of the plural suffix $-(o)ota$ / $-t(o)ota$ is predictable from the stem it attaches to. Hence, the vowel of the suffix lengthens just when it attaches to a base that ends with a short vowel, as in the example $nám-óota$ 'men'; $hódzǝt-tóota$ 'workers' and the vowel of the suffix shortens when it attaches to the base that ends with a long vowel, as in example $gáang-óta$; $béek- tóta$ 'scholars'. The allomorphy of the causative suffix $-(s)i$ si/ $-(e)$ essi shown in (57 a and b) also supports this observation. Consider the examples in each classification.

(56)

a)

náma	‘man’	nám- óota	[namóota]	‘men’
fárdda	‘horse’	fárdd-óota	[farddóota]	‘horses’
k’otíjjoo	‘ox’	k’otíjj-óota	[k’otíjjóota]	‘oxen’
háree	‘donkey’	hárr- óota	[harróota]	‘donkeys’
mána	‘house’	mán-óota	[manóota]	‘houses’

In (56 a) above , all the stems comprise of short vowels immediately before the plural suffix. Thus, they dissimilate in length with the plural morpheme -oota which has a long vowel.

b)

barátaa	‘student’	barát-tóota	[barattóota]	‘students’
bik’íla	‘plant’	bik’íl-tóota	[bik’iltóota]	‘plants’
ʔamánaa	‘believer’	ʔamán-tóota	[ʔamantóota]	‘believers’
kidʒíbáa	‘liar’	kidʒíb-tóota	[kidʒib-dóota]	‘liars’
kabadʒámaa	‘respectd’	kabadʒám-tóota	[kabadʒamtóota]	‘respected’

Similar to that of the examples under (56 a), the examples under (56 b) have short vowels in the base. Hence, the language rule selects the morpheme with the long vowel, i.e. -toota, which is another form of the plural marker in the language.

c)

gáala	‘camel’	gáal-óta	[gaalóta]	‘camels’
gaangée	‘mule’	gáang-óta	[gaangóta]	‘mules’
hóolaa	‘sheep’	hóol-óta	[hoolóta]	‘sheep’
ʔadáadaa	‘aunt’	ʔadáad-óta	[ʔadaadóta]	‘aunts’
ɖjáarsa	‘old man’	ɖjáars-óta	[ɖʒaarsóta]	‘old men’

When the base ends with a long vowel as in (56 c) above, the vowel in the plural morpheme shortens i.e. it dissimilates in length with the last vowel in the base.

d)

barsíisaa	‘teacher’	barsiis-tóta	[barsiistóta]	‘teachers’
gargáaraa	‘helper’	gargáar-tóta	[gargaartóta]	‘helpers’
daldáala	‘merchant’	daldáal-tóta	[daldaaltóta]	‘mrchants’
gargáaraa	‘suuporter’	gargáar-tóta	[gargaartóta]	‘supporters’

The plural morpheme -tota follows the same pattern with the plural morpheme -ota as displayed in (56 d) above. It is preceded by the base that has long vowel which reveals dissimilarity of the length of vowels in the base and the suffix. Dissimilation of vowel length also appears when the causative suffix is added to the base of ABAO word. Examples under (57 a-d) below reveal this fact.

(57)

a)

ʔárguu	‘to see’	ʔárgi-siisi → ʔagar-síisi	[ʔagarsíisi]	‘show’
márguu	‘to sprout’	márgi-siisi → magari-síisi	[magarsíisi]	‘make sprout’
dárbuu	‘to pass’	dárbi-siisi → dabar-síisi	[dabarsíisi]	‘make pass’
kólfuu	‘to laugh’	kólfi-siisi → kofal-síisi	[kofalsíisi]	‘make laugh’

Several phonological processes take place in all the examples under (57a); formation of imperative from the infinitive verb, e.g. (márg-uu → márg-i), formation of the causative from the imperative, e.g. (márg-i → márgi-siisi), metathesis e.g. (márgi-siisi → magari-síisi). In the formation of the imperative, there is delinking of rounding feature of the final vowel and maintaining of the high feature of the infinitive form. In forming the causative, the final root vowel is completely deleted before metathesis takes place. Finally, metathesis of the stop or fricative with the sonorant sound /r/ (that requires the insertion of the low vowel /a/ in between the two metathazied consonants) arises.

b)

déemi	‘go’	déem-sísi → [deemsísi]	‘make go’
táaʔi	‘sit’	táaʔ-sísi → [teesísi]	‘make sit’
bóoji	‘cry’	bóoj-sísi → [boosísi]	‘make cry’
ʔidʒáari	‘build’	ʔidʒaar-sísi → [ʔidʒaarsísi]	‘make build’
ʔobáasi	‘water’	ʔobáas-sísi → [ʔobaassísi]	‘make drink’

The imperative morpheme -i is completely deleted when the causative -sísi is suffixed as shown in the examples in (57 b) above.

c)

dʒábaa	‘strong’	dʒáb-éessi → [dʒabéessi]	‘make strong’
míʔaa	‘sweet’	míʔ-éessi → [miʔéessi]	‘make sweet’
ʔúrgaa	‘smell’	ʔurg-éessi → [ʔurgéessi]	‘make smelly’
k’ulk’úllu	‘neat’	k’ulk’úll-éessi → [k’ulk’ulléessi]	‘make clean’
fágoo	‘far’	fág-éessi → [fagéessi]	‘make far’

Each base, in the examples (57 c) above, has a short vowel whereas the causative suffix has a long vowel. The two morphemes dissimilate in vowel length.

d)

dēeráa	‘long’	dēer-éessi → [dēeréssi]	‘make long’
bóoruu	‘dirty’	bóor-éessi → [booréssi]	‘make muddy’
díimaa	‘red’	díim-éessi → [diiméssi]	‘make red’
gurráatʃʃa	‘black’	gurráatʃʃ-éessi → [gurratʃʃéssi]	‘make black’
dáaŋga	‘territory’	dáaŋ-éessi → [daaŋgéssi]	‘make territory’

Dissimilation of vowel length in ABAO can be represented autosegmentally as in the following diagrams that begin with the underlying form of the word which is formed from two morphemes and end with the output form.

Length Tier		[-long]	[-long]	[+long]	[-long]					
				^						
CV Tier		C	V	C	V	V	C	V		
Segmental Tier		n	á	m	a	-	ó	o	t	a

Length Tier		[-long]	[-long]	[+long]	[-long]					
			≠	∧						
CV Tier		C	V	V	V	C	V			
			≠							
Segmental Tier		n	á	m	a	-	ó	o	t	a

Length Tier		[-long]		[+long]		[-long]		
				^				
CV Tier		C	V	C		V	V	
Segmental Tier		n	a	m		-	o	t

d) Output form

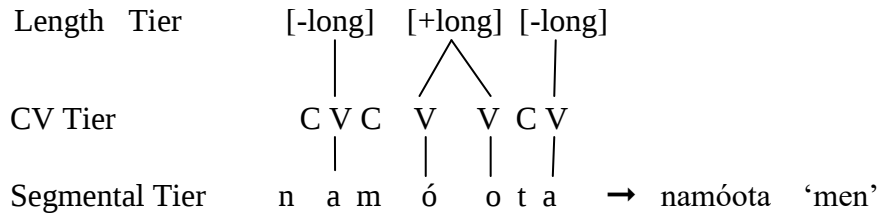


Figure 52: Representation of vowel length dissimilation in ABAO

3.2.10 Reduplication

Reduplication is a word formation process in which some part of a base (a segment, syllable, morpheme) is repeated, either to the left, or to the right of the word or, occasionally, within the middle of the word. While reduplication is found in a wide range of languages and language groups, its level of linguistic productivity varies and it is sometimes used interchangeably with repetition.

According to Nadarajan (nd.) phonologically, reduplication is described as reduplicated segments (sequences of consonants/vowels) or reduplicated prosodic units (syllables or moras). In addition to phonological description, reduplication is also described morphologically as the reduplication of linguistic constituents (i.e. words, stems, roots). Thus, reduplication is interesting theoretically because it involves the interface between phonology and morphology. In reduplication, the base is a word (or part of the word) that is often copied.

Lloret (1988:168) states that the initial consonant and vowel of the stem of verbal and adjectival form in Oromo reduplicate in addition to the gemination of the initial consonant of the verbal and adjectival form stem in the language. She assumes that reduplication is a morphological process namely, the affixation of a skeleton to a stem. Like in other Oromo languages (cf. Owens, 1985; Lloret, 1988; Stroemer, 2004), reduplication is one of the morphophonemic processes that occur in ABAO. Within the corpus of data under study, reduplication serves to mark plurality. The reduplication of verbs in ABAO is used to denote plurality of the verbal or the adjectival forms. The initial consonant of the basic verb is geminated and the reduplicant, thus, can be described as having a C₁V₁C₁ structure as in (58) below.

(58)	ʃʌb + ʃʌbs-e	→	ʃʌa ʃʌ + ʃʌabse	‘I/he broke into pieces’
	kut+kute	→	kuk + kute	‘I/he cut into pieces’
	dem+deemuu	→	ded + deemuu	‘to wander about’
	baas+baase	→	bab + baase	‘I/he took out often’
	dʊf + dʊfe	→	dʊd + dʊfe	‘I/he has come many times.’

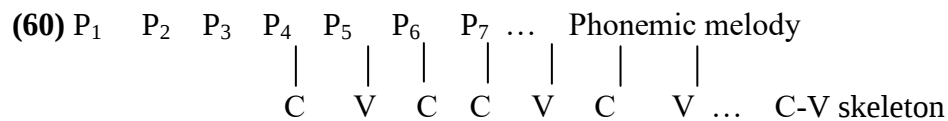
The reduplication of adjectives in ABAO, generally serves the function of plurality (as agreement with the noun), sometimes with the notion of distribution. Reduplicated adjectives in the language look quite similar to the reduplicated verbs. They undergo a prefixing type of Partial reduplication. Consider examples under (59) below.

(59)	dim + diimaa	→	did + diimaa	‘the red ones’
	dēer + dēeraa	→	dēd + dēeraa	‘the long ones’
	dʒab + dʒabaa	→	dʒadʒ + dʒabaa	‘the brave ones’
	t’iraaw + t’iraawaa	→	t’it’ + t’iraawaa	‘the nasty ones’
	gabaab + gabaabaa	→	gag+gabaabaas	‘the short ones’

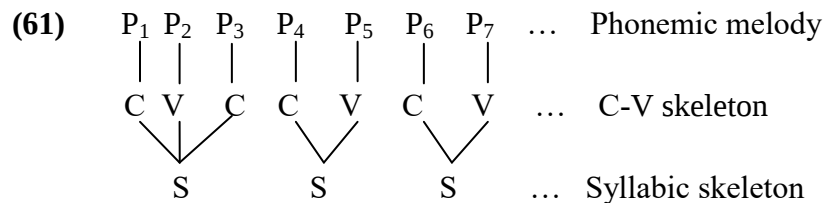
As we tried to discuss so far, reduplication is as common as simple affixation in Afan Oromo. Scholars in the field of linguistics treated reduplication in wide variety of approaches. Schachter and Otnes (1972: 97) considered reduplication as an intermixture of morphological and phonological process. Allen (1977: 280) treated it as a morphological process related to morphophonemics. Hohulin and Kenstowicz (1979: 247) contemplated reduplication as a simple morphophonemic process.

In addition to the problem of disagreement among linguists in their view of reduplication, Marantz (1982: 435) note a theoretical problem in the traditional treatment of reduplication; the proposed formalization has been too powerful, i.e. it allows rule that are not instantiated in natural language. He, therefore, proposes that an assumption be made, namely that reduplication is simply an affixation process. Based on this assumption, he proposes formalism or analyzing reduplication that makes use of the principle of autosegmental phonology.

The following part of the thesis discusses the validity of the assumption set forth by Marantz (1982: 436) and the adequacy of the formalism he proposed. The formalism require that words should be represented as C-V (Consonant - Vowel) skeleton on one tier, associated to phonemic melodies on a separate tier in accordance with the principle of autosegmental theory Marantz (1982: 437), as shown in (60).



The representation in (60) may be expanded into a multitier representation as in (61)



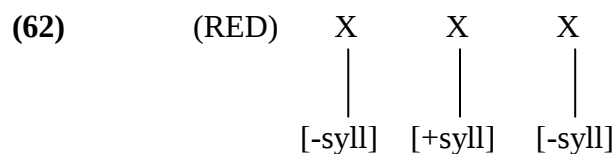
Reduplication differs from the common type of affixation in that the affixed material is limited to C-V skeleton, which depends on the base to which it is attached or its phonemic shape. This, then, calls for a mechanism by which the C-V affix derives its phonemic shape from the base. Taking Marantz's proposal into consideration, it is possible to think that the phonemic melody of the stem is copied over the reduplicating C-V affix on the same tier as the melody, as in the plural morpheme $C_1V_1C_1$ prefixed to the ABAO stem $C_1V_1C_2$ for example, *kut* 'cut' to obtain the form $C_1V_1C_1C_1V_1C_2kukkute$ 'I/he cut into pieces'

Lloret (1988:168) states that the initial consonant and vowel of the stem of verbal and adjectival form in Oromo reduplicate in addition to the gemination of the initial consonant of the verbal and adjectival form stem in the language. She assumes that reduplication is a morphological process namely, the affixation of a skeleton to a stem. She follows Newman (1986a) in arguing that reduplicating is not just another affixation process as Marantz claims, but a distinct process because Oromo reduplicated forms undergo phonological changes that are a property only of reduplication rather than being general phonological rules. Thus, she suggested that the morphologically reduplicated forms undergo a morphologically restricted change where the last

consonant of the morpheme “hardens” a term that she borrows from Newman 1986a and forms a geminate with the first consonant of the base.

3.2.10.1 Representation of ABAO reduplication

The purpose of this section of the thesis is to demonstrate with ABAO data the validity of the assumption by Newman 1986a. The diversity of treatments that reduplication has received is the result of varying assumptions on what reduplication is. As mentioned earlier, Mrantaz (1982) claims making the assumption that reduplication is a normal affixation process will provide the best account. But later Lloret (1988) proved that this may not fit to Afan Oromo for there are phonological processes in addition to duplication of the C-V skeleton which are only of the property of reduplication in the language. According to her, Neman's 1986a assumption will deliver the best description. We, as a researcher conducting a research on one of Afan Oromo dialects, also advocate this idea and represent the process in (62) as follows.



In (62), we represented what is to be reduplicated in ABAO. The [-syll] ones are standing for the consonants (C's), and the [+syll] is standing for the vowel (V). In the language, the last consonant of the morpheme hardens and forms a geminate with the first consonant of the base. This process can be shown as in Figure 53 below.

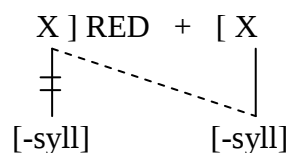


Figure 53 Representation of consonant total assimilation to form a geminate.

It is possible to represent the complete derivations of the morphological reduplicated forms and the whole process is provided in Figure 54 a and b.

(RED) + deemuu → dem + deemuu → deddeemuu ‘to wander about’

In ABAO, the initial consonant of the stem totally assimilates to the reduplicant’s final consonant. The process of total assimilation for ‘a’ can be displayed as follows.



Figure 54 Representation of the process of /m/ to /d/ assimilation to form a geminate.

After the assimilation of /m/ to /d/, the final consonant of the reduplicant and the initial consonant of the stem remain identical /d/. The result, then can be represented autosegmentally, where ‘σ’ stands for a syllable and the two association lines joined to the same phoneme segment shows lengthening of the phoneme. Take the following representation into account.

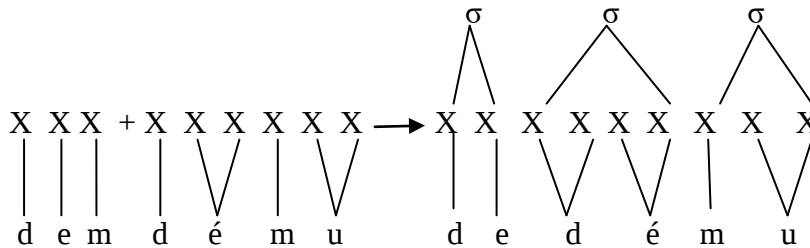


Figure 55 Representation of the result of total assimilation of /m/ to /d/.

(RED) + dʒabaa → dʒadʒ + dʒabaa ‘the brave ones’

Similar to that of verbal reduplication, adjectival reduplication can be represented as in the following Figure 56.

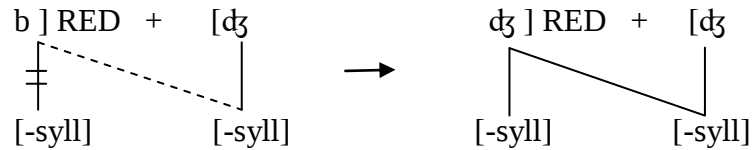


Figure 56: Representation of the result of total assimilation of /m/ to /d/.

After total assimilation of the initial stem consonant /dʒ/ to the reduplicant final consonant /b/, the result can be represented autosegmentally as in Figure 57 below.

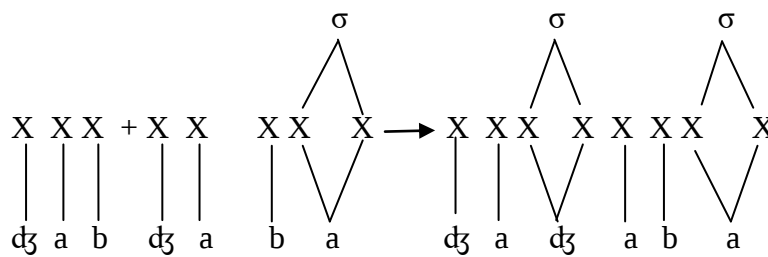


Figure 57: Representation of the result of total assimilation of /b/ to /dʒ/.

3.2.11 Summary of chapter three

In this chapter, we discussed some of the morphophonological processes in the ABAO. We began by describing some of the means by which segments and/or words assimilate each other in the language through processes such as, homorganic nasal assimilation and laryngeal assimilation.

We proceeded to describe in detail, some of the processes that are on-going in the structuring of syllables in the language. Of particular interest in this section were discussions on processes such as metathesis, compensatory lengthening, epenthesis, vowel harmony and dissimilation, and reduplication.

We discussed on morphophonemic processes and their representation in non-linear phonology; namely autosegmental phonology, feature geometry and CV phonology. Assimilation was represented with Feature Geometry model and the other morphophonemic processes;

compensatory lengthening , epenthesis, vowel harmony, dissimilation and reduplication were represented with the CV model. We realized that it is possible to represent all phonological In the next chapter, we shall discuss on the pitch-accent system of ABAO representing it with similar theory.

CHAPTER FOUR

ASPECTS OF PITCH-ACCENT IN ARSI-BALE AFANOROMO

4.0 Introduction

In this chapter, we explore the nature and types of pitch-accent of ABAO within an autosegmental phonological perspective. We begin by the description of the language under tone or non-tone and discussing previous studies that have advocated for tone. We then continue to show the ways in which pitches are combined in the language together with their distribution. We also go on to discuss the nature of pitch-accent in the nominal, verbal, and adjectival morphology of the language. We further describe and analyze the role of pitch-accent in the syntax.

Phonologists have traditionally recognized three basic types of lexical prosodic systems in spoken languages: stress, tone, and pitch accent (Hargus & Beavert, 2016: 1). Tonal languages utilize pitch to distinguish lexical and grammatical items, whereas non-tonal languages do not use pitch to distinguish words, but at a higher level to indicate syntactic or pragmatic information and is a sentence level phenomenon. Tonal languages are further divided into tone languages and pitch-accent languages. A prototypical tone language has lexical tone on every syllable and several contrasting tones (Hualde, 2006: 157). A language with tone is one in which an indication of pitch enters into the lexical realization of at least some morphemes (Hyman, 2006: 229). In tone languages, the tone of each syllable is unpredictable and, therefore, must be specified in the lexicon. No syllable in tone languages is considered more prominent (i.e. accented) than any other (s). In pitch-accent languages, by contrast, the specification of some accent location (s) is sufficient to predict the tonal configuration, or melody, of the entire word. A pitch accent system is one in which pitch is the primary correlate of prominence and there are significant constraints on the pitch patterns for words (Hyman, 2006: 236). Therefore, the syllable on which such an accent falls is considered more prominent than other syllables. It can also be said that moving from one tone to the next in tone languages is a syllable-level phenomenon, whereas such a movement in pitch-accent languages is a word-level phenomenon. As emphasized in many linguistic studies, the main characteristic of pitch-accent languages is the presence of a distributive restriction of once per word or per phrase type of pitch change, e.g., rise or fall (McCawley, 1978; Childs, 1989).

Hargus and Beavert (2016: 1) state that typical pitch accent languages have often been claimed to have the following cluster of properties.

1. location of accent may or may not be predictable
2. surface accentual contrasts on monosyllables are possible
3. underlying accentual contrasts on morphemes are possible
4. there is typically one accent per domain, though accent shifts are possible
5. pitch is predictable from underlying accent
6. there is typically a relatively small number of minimal pairs

As a pitch-accent language, ABAO shares some of these properties. This chapter of the thesis examines the nominal, verbal and adjectival pitch accent system in ABAO. We refer to the systems as pitch-accent systems as the use of tone in this dialect is different from that of tone language for tone is restricted in its distribution. We focus on the pitch pattern of ABAO, but we also refer to previous studies on Oromo tone as general for analytical insights. We start by reviewing the descriptive patterns of pitch-accent in Oromo and proposing the goals of the current study.

4.1 Previous studies on Oromo tone

Even though there were studies on Oromo tone earlier than Andrzejewski (1957), it is duly noted after the contribution of his work on Borana dialect. Andrzejewski (1957, 1960b and 1966) present an account of the tonal patterns of the Borana dialect of Oromo. He points out that, lexical items are never distinguished by relative pitch alone. Many of its grammatical forms are bound up with certain definite patterns of relative pitch (Andrzejewski 1957: 368). He indicates that although only two phonemic levels of tone need be recognized for an adequate description of the Oromo, the actual pitches on sequential syllables of the same phonemic level differ appreciably in the height of the pitches and he provides notation for representation of these differences in his texts. In his 1966 paper, he provides a set of tone patterns for nouns and verbs in various classes and in specific grammatical contexts.

Grag (1975) states that the use of word level pitches and stress patterns are characteristics of all Oromo dialects, and partially serve to delimit the phonological shape of the word, partially as a function of its morphological or syntactic role. He notes that at least two levels of tones are distinctive, that the accent is found predominantly upon the penultimate syllable in isolation and that the final syllable of a word as the nominative is high toned. He also notes that stress plays a crucial role in the grammar, but does not define this.

Heine (1981a) reports that tone has no distinctive function in Waata dialect although some words are associated with specific tone patterns. Furthermore, he states that most words are pronounced with various tone shapes. He marks tone throughout, and explains that each word tends to have certain tonal norms which speakers are likely to adhere to. He indicates in his article in (1980) that there are two phonemic levels of tone in the Munyo dialect and that tone patterns are sensitive to grammatical context.

Owens (1981) provides an extensive description of tone patterns in simple statements in the Borana dialect. He indicates that although his patterns are presented in terms of two phonemic tone levels, more levels are phonetically realized. He states that there is a general fall in pitch throughout an utterance. Thus, a low tone towards the beginning of a sentence may be as high as high tone towards the end in terms of absolute pitch. The tone patterns that Owens (1981) ascribes nouns in the *forma assoluta* in the Borana dialect are also similar. There are some difficulties in interpreting the realization of these as Owens always considers short final vowels are unvoiced and non-syllabic even though indicating this is not always the case (Owens, 1981: 144). A clear discussion of the tone patterns is quite difficult because he does not consider the difficulties in his assignment of tone patterns.

Owens (1985: 26) provides an account of tone patterns in Harar dialect. He marks nouns lexically and provides rules for determining tone patterns in various grammatical contexts based on this lexical marking. He does not indicate specifically how his notation relates to phonetic reality, but as he indicates the patterns are equivalent to his earlier accounts of the Borana. Owens (1985) characterizes possible tone patterns for nouns in the *forma assoluta* in Harar dialect as LH, HH, LLH, and LH. If phonetic realizations of these phonemic characterizations

are considered, the patterns are for the most part coincidental with the patterns that will be discussed in ABAO. Because of the downdrift phenomena a noun with the pattern HH or LHH is actually realized phonetically with the highest pitch on the penultimate syllable. A noun with the pattern LH or LLH is realized phonologically with the highest pitch on the final syllable.

The generalizations about tone patterns in ABAO are also applicable in both the Harar and Borana dialect. There is always at most one highest pitched syllable; the pitches across a word stand in a subordinate relationship with one another; phonological and morphological information is pertinent in predicting or describing tone patterns while syllable level segmental phonetic information is not; syntactic context determines patterning of pitches within words. The absence of downdrift in ABAO and the presence of downdrift in the Harar and Borana constitute a difference in tone patterning across the dialects.

Banti (1988) is a remarkable account of tonal accent article on Arsi dialect Oromo. Banti categorizes Arsi nouns into three declensions, two of which are divided into subtypes on the basis of long/short final vowels and differing tonal patterns. Inflectional endings and tonal behavior are joint exponents of a range of syntactic functions which Banti finds it convenient to subsume under a common label 'case'. His declensions with the examples are displayed as follows.

(63)

	D1a	D1b	D2a	D2b	D3
Abs	íntala	buddééná	gurbáa	ilíllíi	bisháan
Gen	íntaláa	buddéénáa	gurba' áa	ilíllí'íi	bishaaníi
Nom	íntáltí	buddéenní	gurbáan	ilíllíin	bisháan
Pred	íntala	buddéena	gúrbaa	ilíllii	bíshaan
Neg.Pred	íntál1áa	buddéénáa	gurbá'áa	ilíllí'íi	bisháaníi
DAb	intalaa	buddéena	gurba'aa	illíli'ii	bishaanii
	f 'girl'	m'injera bread'	m 'boy'	f 'flower'	m/pl/ 'water'

Banti (1988) accounts the nominal system of Oromo using the theory of Autosegmental phonology. Unlike Banti (1988) who discusses the range of forms determined for nouns in different syntactic contexts, Hayward and Gemetchu (1996) considers the types or classes of lexically determined base forms in Western Oromo. They provisionally continue to refer to the classes established in connection with those nouns that have short final vowels (SFV) and long final vowels (LFV) subdividing each into penult low and penult vowels where they represent them with SFV-L, SFV-H, LFV-L and LFV-H respectively. They confirm that in Harar Oromo there was a curious asymmetry pertaining to SFV nominals with the effect that although the SFV-L/SFV-H dichotomy operated in forms longer than two syllables there was a distinct paucity of members for the SFV-H class among disyllabic nominals, the only members found not being prototypical nominals. When they compare cognate disyllabic SFV nouns in Maccaa and Harar and Borana Oromo, they observed the Maccaa and Borana forms all have H tone on the penult, while the Harar forms all have L tone on the penultimate syllable. Here are some of the examples they used to compare the assignment of the tone.

(64)

Disyllabic SFV nouns:

Maccaa	Harar	Boran	
námá	Namá	náma	‘person’
máná	Maná	mána	‘house’
fárdá	Farad	fárda	‘horse’
ǵáarsá	ǵaarsá	ǵáarsa	‘elder’
béelá	Beelá	béela	‘hunger’

The feature of declensions to which they wished to draw attention is that there is a fairly obvious similarity between the Arsisystem and that proposed for Harar Oromo by Owens. We, in this study, suggest that the similarity is more complete between ABAO and Borana dialect than between ABAO and Harar.

Clamons (1988) has conducted a research on Arussi Oromo. She has classified the tone patterns of the basic forms of Arussi dialect Oromo noun into six. These are two syllable nouns with low

pitch for both syllables, two syllable nouns with low pitch for first syllable and high pitch for second syllable, three syllable nouns with the second high pitched syllable, three syllable nouns where the second syllable is higher than the first, the third syllable is higher than the second, the four syllable nouns with the high pitch on penultimate syllable, and the four syllable nouns where the final syllable has the highest pitch, the penultimate syllable is the next highest pitched and the preceding syllables have lower and equal pitches. She also discusses the place of pitch-accent in the sentence.

When Banti (1988) analyzed the tone system of Arussi dialect, he considered a single speaker as an informant and he pointed out that the use of a single speaker for investigation has certain strengths and weaknesses. Similar to Banti (1988), Clamons (1988) consulted a single speaker to study the Arussi Oromo. The weakness of using a single informant may be reduced in this paper for several informants of native speakers of the dialect were involved and the author also speaks the dialect as a second language. Both studies on Arussi Oromo emphasize the tone of nouns and the range of forms determined for nouns in different syntactic contexts. But this study discusses the pitch-accents of nouns, verbs, adjectives and pronouns and represented them by the theory of Autosegmental Phonology of Goldsmith (1976, 1990).

4.2 Descriptive aspects of pitch-accent in Arsi-Bale Afan Oromo

Presenting these much on earlier works on tone systems of dialects of Oromo and Arussi Oromo in particular, we proceed to the pitch-accent system of ABAO. Phonologically, Oromo utilizes only one tone, H tone. H tone is the marker of prominence; L tone is simply a low level; default association of relatively low pitch with syllables which have undergone no association with an H tone during the course of a derivation. The relationship between accent and tone is simple: H tone is associated with accented syllables. In this dissertation, high tone is marked by an acute accent (´) and low tone is left unmarked. Long vowels are written as double vowels, and the first one only is marked for tone.

In this thesis, we will endeavor to prove that ABAO is a pitch-accent language, where prominence is indicated by high pitch. It has a restricted high pitch-accent marking in the citation form of various categories. The location of high pitch in a word is hardly predictable, and high

pitch is not associated with the duration of a vowel. Vowel quantity and quality do not affect pitch-accent assignment. All the five vowels with their long counterparts of the language can carry the accent (high pitch).

The language shows interesting interactions between stress and pitch, in a system in which both are not easily predictable, and where the distribution of pitch is dependent on stress. In ABAO, the units that bear tones are syllables. This idea is maintained by Banti (1988). He asserts that, if:

1. in Arsi and Eastern Oromo there is a contrast between H-tones and L-tones short and on long vowels,
2. there is no evidence of tonal units that occur only on long vowels,
3. in Borana Oromo falling tones occur both on short and on long vowels, it is possible to think that the units that bear tones and (accents) in Oromo are not moras, but rather syllables (Banti 1988: 26). We also advocate for this position.

4.2.1 Linear approach to ABAO pitch-accent

One syllable is high pitched within the word of ABAO. The relationship obtaining among the pitches of the syllable of a word are predictable given syllable structure, phonological form, grammatical function and lexical accent assignment (Clamons, 1988: 15). In the following discussion, pitch-accent patterns of nouns are considered as they obtain in the form taken to be unmarked.

In ABAO, case can be taken as unmarked on nouns that function as direct objects (ACC), in deictic expressions and in isolation. There are certain to be other grammatical environments within the ABAO grammar where case is unmarked tonally on nouns and as Clamons (1988: 15) suggests, further investigation of these areas is required. Nouns functioning as subjects, indirect objects, objects of postpositions and possessives (hereafter, Nom, Dat, Loc and Gen, respectively) are marked by such devices as suffixation, lengthening of the final vowel, and pitch patterning. The pitch patterns of these other case forms are predictable.

4.2.1.1 Pitch-accent assignment of ABAO nouns

In ABAO, monosyllabic nouns are rare and those that have been identified in this study are all high pitched in the basic form. A Few examples that are high-pitched are listed in (53) and (54).

(65)

fóon	‘meat’
bór	‘tommorrow’
ǰán	‘five’
lóon	‘cows’

Comparable to nouns, the other word classes also have high pitch if they are monosyllabic.

(66)

ʔól	‘up’
máal	‘why’
gád	‘down’
sún	‘that’
jóom	‘when’
kám	‘which’

In ABAO, nouns with two or three tone-bearing units (TBU), (two or three syllables) are frequent and two possible combinations of high and low tone are attested on them. With these few exceptions, (kálée ‘kidney’, dáakúu ‘to swim’, gogáa ‘skin’), nouns can be divided into two groups: (a) those that have high pitch-accent on the final vowel (67 a-c), and (b) those that have high pitch-accent on the penultimate vowel (68 a-c).

For each group, examples of different word structures with different number of syllables and vowel length are given. Two or three syllable nouns with high pitch-accent on the final syllable are displayed under (67a-c) below.

(67)

a)

bijáan	‘water’
marɔimáan	‘intestine’
fupɔnáan	‘nose’
ʔiftáan	‘after tomorrow’
ʔilkáan	‘teeth’
ʔindʒiráan	‘louse’
ʔudáan	‘feces’
ʔafáan	‘mouth’
midáan	‘cereal’
ʔaannán	‘milk’

All the words in (67 a) above, terminate with the coronal nasal sound which attracts pitch-accent. This pattern works for all ABAO words that end with this sound which is the next sonorous sound after vowels and semi-vowels. The other group of words that attract pitch-accent to the final syllable comprises of the long low vowel /a/. It is evidenced by the following examples.

b)

bobáa	‘armpit’
dʒidʒirráa	‘transfer’
daaráa	‘ash’
bakakkáa	‘lightening’
miɬ’áa	‘son’
foddáa	‘window’
sadarkáa	‘level’
foonáa	‘kral’
ʃ amáa	‘rotten’
ɬ’uumfáa	‘juice’

The words above terminate with the low vowel /a/ which is tense. As it is the most sonorous sound, it draws pitch-accent when it occurs in the word final position of a word. There are also other word group that pull pitch-accent to the final syllable of words. These are words that terminate with long front vowels. Consider the examples.

c)

dʒabbíi	‘calf’
daadíi	‘mead’
fedíi	‘desire’
furíi	‘mucus’
ʔulée	‘stick’
buk’k’ée	‘gourd’
dikée	‘cow dung’
maɟɟíi	‘intoxication’
kittaaníi	‘circumcision’
bubbée	‘wind’

The placement of the pitch-accent of the disyllabic nouns is largely predictable from the phonological form of the noun. We can discern from (67 a-c) that there are conditions that come into view to ascribe the pitch to the last syllable of a noun. In (67 a), all the nouns terminate with the coronal nasal sound preceded by long or short low vowel /a/; in (67 b), all the nouns terminate with long low vowel /a/ preceded by vowels other than long front vowel and high back long vowel like *déeraa* ‘long’ and *fiigaa* ‘runner’ *dūumaa* ‘nature’, respectively and in (67 c) all nouns end with a final front long vowels. Moving on to the assignment of pitch-accent on the penultimate syllable to disyllabic or trisyllabic nouns, we can discover the following examples under (68).

(68)

hídda	‘root’
dudúba	‘mud’
dáakuu	‘flour’
dukkána	‘darkness’
bíjja	‘country’
rik’íŋŋa	‘bridge’
d’íibbaa	‘influence’
dũumaa	‘nature’

Examples under (68) portray that the pitch-accent of nouns in ABAO falls on the penultimate syllable of disyllabic or trisyllabic nouns if the nouns do not fit the patterns arranged earlier in the examples (67 a-c). By the same token, pitch falls on the syllables of longer nouns in ABAO .

In nouns of four syllables, the syllable with the high pitch is either the final or penultimate syllable. If the noun ends in long or short /a/, the penultimate syllable has high pitch level; the other syllables will display equal and low pitches.

(69)

mukukkúla	‘glow’
dargaggéessa	‘adolescent’
dúlaand’úla	‘leech’
konkoláata	‘car’
bilisúmmaa	‘freedom’
bareedína	‘beauty’
?awaannísa	‘locust ’
dabaak’úla	‘pumpkin’

In nouns of four syllables with a final non-low vowel, the final syllable takes similar pattern with the three syllable words. The syllables other than the high pitched one have low and equal pitches.

(70)

ʔoboléttii	‘sister’
ʔakakájjuu	‘grandmother’

Another class in the nominals, which is inflected for a number of categories, is the pronoun. Pitch-accent in pronouns of ABAO also follow similar pattern of nouns. Subject pronouns take high pitch-accent on the penultimate and ultimate syllable as in (71) below.

(71)

	Nominative	Absolutive
1sg	ʔaní	ʔána
1pl	Nují	nú
2sg	ʔáti	sí
2pl	ʔisín	ʔisín
3sgm	ʔinní	ʔísa
3gf	ʔisín	ʔisín
3pl	ʔisáan	ʔisáan

Reflexive pronouns that show actions refer back to the subject are formed by prefixing the particle *ofi-* on possessive adjective forms of pronouns. The assignment of pitch-accent in this group is indicated by examples (72) below.

(72)

ʔofiikoo	‘myself’
ʔofiikée	‘yourself’
ʔofiisaa	‘himself’
ʔofiisíi	‘herself’
ʔofiikéenna	‘ourselves’
ʔofiikeessán	‘yourselves’
ʔofiissaaníi	‘themselves’

The grammatical subject of an expression is marked by predictable pitch patterning as well as suffixation. Although the suffix varies depending upon the phonetic shape of the noun, the high pitch is always found on the final syllable of nouns. The nominative case is marked by four different morphs of allomorphic variation occurring in complementary distribution. The allomorphs for the nominative case are -n, -ni, -i and $\emptyset$. For example, the base forms *sarée* ‘dog’, *saandúk’a* ‘box’, *kórma* ‘bull’ and *ɣilmáan* ‘children’ have the nominative forms *saréen*, *saanduk’ní*, *kiòrmí* and *ɣilmáan*, respectively. The occurrence of the allomorphs of the nominal case in a sentence can be shown as in (73) below.

(73)

nam-i-ɣɣí-í person- ep-def m-Nom	dúf-e come -3m pf	‘the man came’
daaʔim-ní child- def. m Nom	tap’át-e play -3m pf	‘the child played
nam-i-ttíi-n woman- ep- def f Nom	kaďát-te beg -3f pf	‘the woman begged’
midáan cereal-def. m Nom	márg-e sprout-3m pf	‘the cereal sprouted’

The case marked on nominals for indication of possession is known as genitive case. The genitive case is formed in two ways: by prefixing *kan* and lengthening the last vowel or suffixing -i to final consonant of the possessor noun; and by juxtaposing the thing possessed and the possessor in that order and lengthening the final vowel of the possessor if it is short. If the vowel of the noun possessor is already long, occurrence of the possessed noun just before the noun possessor signals the genitive case. ABAO possessive case forms have also a high pitch on final syllable. The pitch on the initial syllable of the genitive case is low for two syllable nouns. In trisyllabic nouns, the initial and the penultimate syllables have low pitches while the final syllable has high pitch as in the following examples.

(74)

mána house (indef. m Acc).	k'aall-i-ttíi spiritual leader-ep-def. f Gen	'house of the spiritual leader'
sabbáta sash (indef. m Acc).	waak'áa heavens (indef. m Gen)	'rainbow'
ʔeegée tail (indef. f Acc)	ʔadurée cat (indef. m Gen)	'the tail of a cat'
bífa color (indef. f Acc)	sabbatáa sash (indef. m Gen)	'color of a sash'

4.2.1.2 Pitch-accent patterns of ABAO adjectives and verbs

Adjectives and verbs, like nouns, have pitch accent either on the penultimate or the final syllable. Adjectives and verbs having high pitch-accent on the final syllable are fewer in number than those that have pitch-accent on the penultimate syllable.

(75)

Adjectives		Verbs	
gámna	'wise'	faʃ'áasuu	'to sow'
ʃʷululúk't'uu	'shiny '	gudísa	'I raise'
baréedduu	'beautiful'	ʔaráabda	'you lick'
gurráaʃʃa	'black'	béekta	'you know'
k'álʔoo	'thin'	k'ábda	'youn have'

(76)

Adjectives		Verbs	
ʔadíi	'white'	t'umuré	' he finished '
koʔeettíi	'busy'	warwaatán	'they begged'
gadée	'bad'	ʃʷufi	'shut!'
dēedíi	'raw'	mooʔaníi	'have they won?'

Predictable pitch-accents are also found in other domains of the Oromo grammar. Suffixes and tone patterns function in verbs in marking tense, person, number, mood and aspect. Adjectives exhibit tonal patterns that are predictable on the basis of their phonetic form and the grammatical gender and function of the nouns they modify.

Some modifiers have a low pitch relative to adjacent syllables unless directly modifying a noun. The pitch they bear when directly following the modified noun is only predictable relative to the pitch of the final syllable of the modified noun.

When modifying a noun with a final high tone, these modifiers are low toned, when modifying a noun with a final low tone, they are high toned. For example:

(77)

karáa san	‘that road’
sagalée san	‘that voice’
góda sán	‘that corner of the house’
téessoo sán	‘that seat’

In ABAO expressions, (similar to discussion by Clamons, 1988), the location of pitch-accent functions to encode grammatical information.

Individual lexical items are not distinguished by a difference in the pitch of a syllable alone, but the grammatical function of a word may be distinguished by just such a difference. Thus, while tone is not contrastive in the lexicon, the meaning of a string can be changed by changing the pitch of a single syllable (Clamons, 1988: 11). Consider the following examples.

(78)

ʔadaadáa aunt (indef. f Acc)	barbáad-a seek-3m.sg. imp	‘he is looking for an aunt’	
ʔadaadáa aunt (indef. f Acc)	barbáad-e seek-2 sg m pf	‘he looked for an aunt’	
ʔadaadáa aunt (indef. f Acc)	barbaad-áa seek-2 pl imp.inter	‘look for an aunt!’	
lóon cattle (Indef. f Acc)	namáa person (Dat)	kénn-i give -2 sg.m/f Imp	‘give someone cattle!’

4.2.2 Non-Linear approach to ABAO pitch-accent

The theory of Autosegmental Phonology was proposed by Goldsmith in his doctoral dissertation in 1976. Goldsmith used his theory to analyze African tone languages. The tonal properties of the word or segment were factored out and treated separately from the segmental properties: “Goldsmith proposed a two-tiered representation in which tones are associated to tone-bearing segments usually vowels” (Spencer, 1991: 133). Goldsmith’s main point was that a phonological representation of a word or phrase was about more than just the segments. The segments had a relationship with other elements, which he called autosegments, and this relationship could be mapped out specifically: “For example, a sequence of consonant and vowel phonemes, and simultaneously a sequence of tones, together with an indication of which tones are linked to which vowels” would create a proper phonological representation (Spencer, 1991: 133).

Goldsmith’s theory is considered nonlinear, because of the multiple lines of phonological elements; one is the CV structure and the other is the tone. Tone is on a separate ‘tier’ from the segmental and prosodic material, like a musical melody. A tone is only realized on the surface if it is ‘associated’ with some segment or prosodic entity such as a syllable or the more, on which it is eventually pronounced. These associations are denoted by lines connecting the tiers. (Yip, 2002: 180). Goldsmith (1976, 1990) proposes that certain phenomena operate beyond the level of segments. He states that autosegmental phonology differs from familiar generative and traditional phonemic representation in that it consists of two or more tiers of segments”

(Goldsmith 1990: 8). In this regard, the phonological features that are specified on such tiers appear not as a sequence of sounds but as a non-linear process of sound production. Accordingly, phonological units such as stress and pitch, vowel harmony and nasalisation and especially tone are appropriately recognised as “extending over units which can encompass more than one segment” (Hyman, 1975: 186).

The rest of this chapter takes as its basis, the autosegmental representation that was formalised by Goldsmith (1976, 1990) and sharpened by some of the resulting discourse on the topic. Different tiers will be used to show the various levels at which the phonology of ABAO operates with the various elements specified for each of these tiers. Segmental features and tones on the separate tiers will also be mapped onto each other by means of association lines. In keeping with Pulleyblank (1986: 11) on the “association convention” we will map sequences of tones not to vowels (Goldsmith, 1990: 14) but to “tone bearing units (a) from left to right and (b) in a one-to-one relation.” Similarly, we will, in consonance with Yip (2002: 76), modify the initial sentiments on the well formedness condition (WFC) of Goldsmith (1990: 319) to rather read as follows; the point of departure from Goldsmith is the entity which has tone bearing ability in any language:

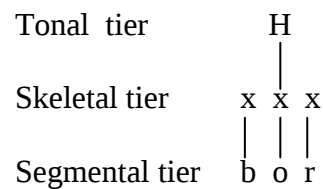
1. Every TBU must have a tone.
2. Every tone must be associated to some TBU.
3. Association proceeds one-to-one, left-to-right.
4. Association lines must not cross

Autosegmental phonology speculates two or more parallel levels, called tiers, of phonological representation. These tiers differ from each other and consist of string of segments of their own. The features that are specified on a particular tier are not allowed to appear on different tiers and so this makes for easy identification of the various segments on the different tiers. The features that are specified on each tier are linked to the segments on the other tiers by means of association lines. Association lines are drawn between segments to show that they do not occur randomly but arranged one after the other with each other. The manner of mapping between these segments is not always a one to one matter. It is therefore possible to observe that a single

segment on a particular tier may have two association lines coming from two features on a different tier being mapped onto it.

The autosegmental phonological representation of the ABAO word **bór** ‘tomorrow’ will therefore take the form as in (67) below:

(79)



In (60) , the segments are arranged on multiple separate and independent tiers and each relates to the other tiers by the association lines. The High tone and the segment /o/ relate to each other via the skeletal tier signifying the simultaneous co-ordination of the segment and the suprasegmental at the point of articulation. Thus, it is indeed an improvement over linear generative phonology since it allows for representation of sequence of segments and suprasegmentals simultaneously.

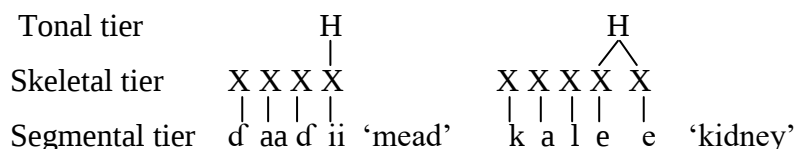
As we discussed so far, tiers are the multi-levels at which the different phonological features are arranged in non-linear generative phonology. They usually consist of sequences of features which differ from one tier to the other. There are various kinds of tiers that can be specified for various phonological analyses (Katamba, 1989: 198). In this dissertation tonal tier, skeletal/CV tier and segmental tiers are applicable to the phonological representation of pitch: Thus, the use of them will briefly be discussed before they are practically used in the analysis.

Tonal Tier: The tonal tier specifies whether the underlying tone on the segment is high (H) or Low (L). This is applicable in the discussion and representation of tone in the language.

Skeletal/CV tier: It is the mediating point on which the elements on the different tiers anchor. The skeletal/CV tier holds units represented by consonants and vowels; hence they are sometimes represented as C-slots and V-slots or X-slots. The skeletal/CV tier can relate with other tiers on one-to-one or one-to-many basis.

Segmental tier: It is the level at which phonetic representation relevant to the description are arranged. In other words, the underlying phonetic segments occupy this tier. The following are representative of ABAO words that are represented autosegmentally.

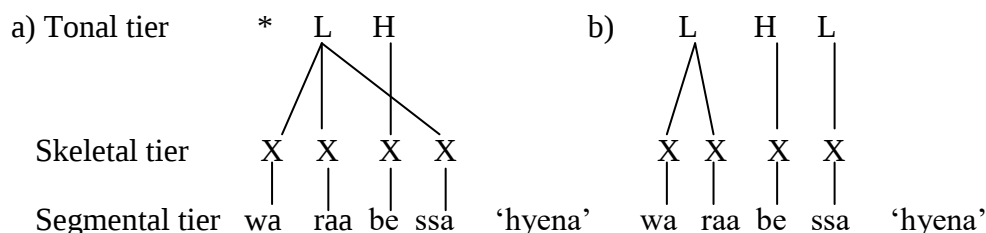
(80)



The above examples highlight the representation of tone within the autosegmental phonological framework. The tone tier is represented by L and H implying low and high pitches respectively. The segmental tier also relates to the underlying consonantal and vocalic components of the phonological units while the unbroken lines connecting the two are the lines of association. Further, features on the various tiers are mapped onto each other by a Universal Association Convention (UAC) which stipulates, “When unassociated vowels and tones appear on the same side of an association line, they will be automatically associated in a one-to-one fashion, radiating outward from the association line” (Goldsmith, 1990: 14).

In associating the autosegments, however, care must be taken so as not to draw association lines across each other. This is in keeping with a formal principle known as the “No-crossing Constraint” which states that association lines do not cross.

(81)

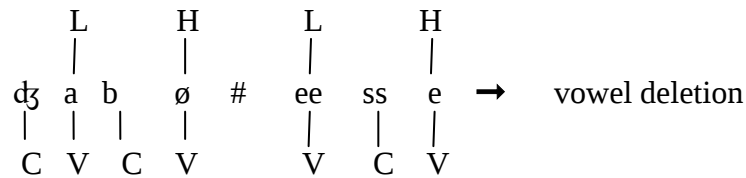


There is a concept named tone stability that preaches the nonappearance of the affection of tone as a result of the elision of tone bearing unit. In many languages when an underlying tone-bearing segment (normally a vowel) is either deleted or becomes non syllabic and loses its ability to bear tone, the tone still survives and surfaces on an adjacent syllable. Katamba (1989: 194). Fox (2000: 229) also describes tone stability as the situation whereby the lost of a syllable or tone bearing unit through elision, contraction, or reduplication does not affect its associating tone, but it is preserved and may be re-associated with the next syllable. This is a tonal feature which is difficult to explain and represent in linear generative phonology and thus, provides evidence to confirm of the independence of tone from segmental phonemes to support the superiority of autosegmental phonology over linear generative phonology.

(82)

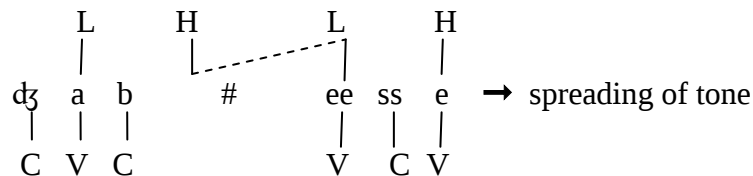


(83)



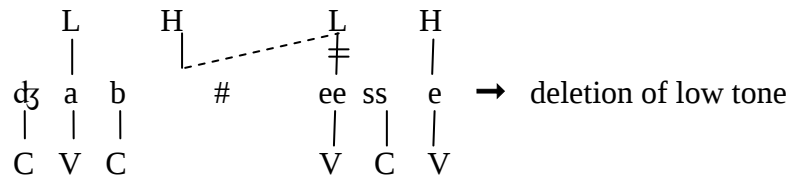
Despite the deletion of the vowel /aa/ the tone on it is still retained. The tone on the deleted segment now spreads to the adjoining segment.

(84)



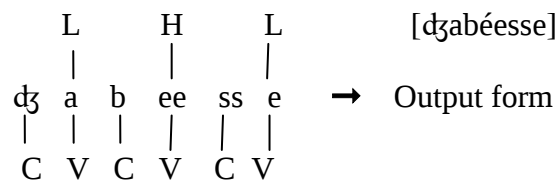
As the language has only high and low pitch that does not regard rising and falling tone, the low tone is deleted from the suffix.

(85)



In three syllable words, the high pitch falls on penultimate syllable. Thus, the output can be represented as follows.

(86)



Pitch creates a number of variations in the morphology of ABAO. In this section, we will discuss the role of pitch in nominal morphology. The types of tones which occur on noun roots in ABAO are not constrained. It is possible then, to have either high, low, pitches occurring on various nominal forms. This system of tones turning up arbitrarily on nouns makes it very difficult to predict which tones can be realized and on what nominal form. To a very large extent however, nouns usually carry non-low tones in the language.

4.2.2.1 Gender

Two types of gender, that is, masculine and feminine, exist in Oromo (Gragg, 1976: 180; Mohammed and Zaborski, 1990: 5; Griefenow-Mewis, 2003: 22). These are identified through gender marking suffixes, or lexically by using different words for masculine and feminine forms. The distinct words for masculine and feminine like *haadha* ‘mother’ and *ʔabbaa* ‘father’ are also used in Oromo.

Gender indicating words can be used for animals and they are placed immediately after or before the nouns they belong to. The most common contrastive pair of words used in this way is *korma* ‘male (m.)’ vs. *raada* ‘female (f.)’.

The pitch pattern for all these words that show grammatical gender is similar to the patterns discussed under (67a-c) above. High Pitch-accent falls on the final syllable if it terminates in a coronal nasal sound, low tense vowel /a/ or front tense vowels /e/ and /i/; otherwise, high pitch - accent falls on penultimate syllable for most of the words. Taking one example from the following pattern, the autosegmental representation of the word is displayed in (87b) below.

(87)

a)

ʔabbáa	‘father’
ʔobboléessa	‘brother’
háada	‘mother’
ʔobboleettíi	‘sister’
duréessa	‘the rich one’ m.
dureettíi	‘the rich one’ f.

b) $\begin{array}{ccccccc} \text{H} & & \text{H} & & \text{H} & & \text{H} \\ | & & | & & | & & | \\ \text{ʔilma} & \text{'son'} & \text{ʔintala} & \text{'girl'} & \text{dureettii} & \text{'the rich one (f.)'} & \text{ʔabbaa} & \text{'father'} \end{array}$

4.2.2.2 Number

ABAO has singular and plural number. Noun plurals are formed through the addition of suffixes. The most common plural suffix is *-oota*; a final vowel is dropped before the suffix. The plural formation in ABAO often triggers a phonological process, which deletes a noun-stem-final vowel in front of the plural suffix. This would imply that suffixation of the plural marker to the noun stem, sometimes results in the deletion of the final vowel of such a noun stem. In ABAO, the suffix becomes *-ota* following a syllable with a long vowel. Among the other common plural suffixes are: *-(w)wan*, *-een*, and *-(a)an*; The morph *-lee* is the other plural suffix. It is suffixed to inanimate nouns that end in long vowel. Whereas its allomorph *-olii* is suffixed to animate nouns with a long vowel in the preceding syllable and which end in short vowel. The plural marker *-ilee* is suffixed to inanimate nouns whereas *-olii* is used with animate nouns. The allomorph *-olee* can be used with $\pm$ animate nouns. Both *-olee* and *-ilee* are suffixed to the nouns with long vowel in the penultimate syllable. In affixation of *-(w)wan*, and *-lee* no stem vowel deletion of vowel is observed.

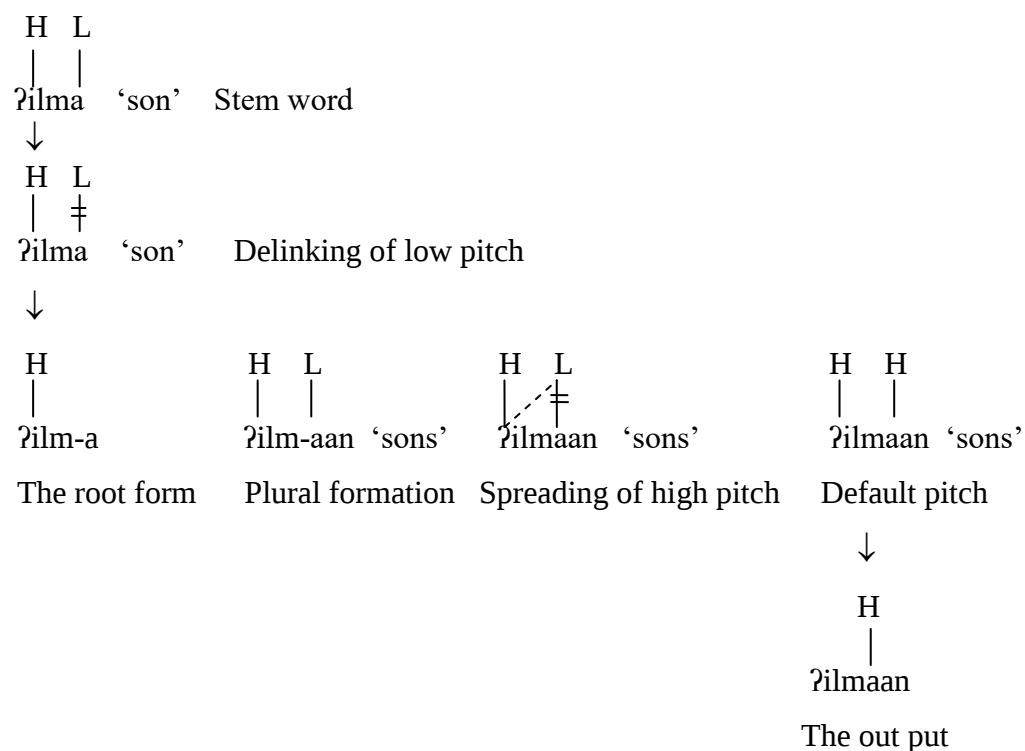
(88)

háajjuu	‘scholar’	haajjóota	‘scholars’
gánda	‘village’	gandóota	‘districts’
kitáaba	‘book’	kitaabilée	‘books’
ďǎaba	‘organization’	ďaabilée	‘organizations’
buʔáa	‘profit’	buʔaalée	‘profits’
ɖǎarsa	‘elder’	ɖǎarsólíi	‘elders’
ʔíima	‘son’	ʔíilmáan	‘sons’
múka	‘wood’	mukkéen	‘woods’
korée	‘committee’	koreewán	‘committees’

The assignment of the pitch of the above words spread from the stem to the suffix. Hyman and Schuh (1974) explain that if two syllables differ in tone, the tone of the first syllable naturally enlarges its domain by spreading into the second syllable, a process similar to segmental feature assimilation in the progressive or preservative process.

Tone assimilation in ABAO takes place always to the right hence it is a progressive assimilatory process type. In ABAO, this process involves a high tone spreading from a preceding syllable onto the following syllable with a Low tone. Specifically, when a vowel in a stem final position is elided before affixing the suffix, the tone enlarges its domain to assimilate to the following tone. The example below illustrates the process used to pluralize a noun *?ilma* ‘son’.

(89)



The final word form which comprises of a high pitch preceded by a low pitch is the result of the rule of ABAO pitch-accent system. Those groups of words terminating in a consonant, usually /n/ are normally accented on the final syllable.

4.2.2.3 Case

Case is a grammatical relationship of nouns or pronouns to other words in a sentence. Mcfadden (2004: 3), states that morphological case differs from language to language, so is language specific, while syntactic case is universal. Several cases exist in Oromo encompassing syntactic and semantic bases of case assignment with distinct inflectional markers for each. These include: nominative, locative, genitive, dative, ablative, instrumental cases (Nordfeldt, 1947: 22). They show their semantic roles on the basis of syntactic relational structures.

4.2.2.3.1 Nominative case

The nominative case is used for nouns that are the subjects of clauses. The nominative case is marked by four different morphs of allomorphic variation occurring in complementary distribution. The allomorphs for the nominative case are *-n*, *-ni*, *-i* and $\emptyset$.

The difference in the phonological realization of the nominative case markers arises from the phonological nature of the nouns. The marker *-n* occurs after a terminating long vowel of a noun including the derived nouns. For a noun base that ends in short vowel, the final vowel is dropped and *-ni* is suffixed to mark nominative case. It makes either gemination or consonant cluster.

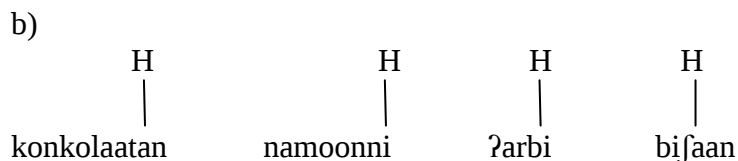
The allomorph *-i* is appended to noun roots or $-C_1C_1$ and $-C_1C_2$ final stems. Nominative case can also be marked by zero morph when the noun ends in consonant. The case is understood by considering placement of the noun and the syntactic function it conveys.

(90)

a)

Konkoláataa	‘car’	konkolaatán	‘the car’
namòota	‘people’	namoonní	‘the people’
ʔárba	‘elephant’	ʔarbí	‘the elephant’
biʃáan	‘water’	biʃáan	‘the water’

In all the examples above, the high pitch falls on the final syllable of nominative forms of the words which can be depicted autosegmentally as in (74b) below.



As (90) depicts the high pitch is assigned to the last syllable to mark nominative case.

4.2.2.3.2 Locative case

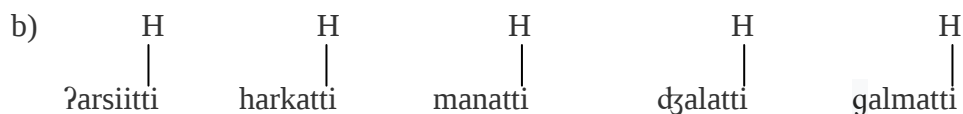
Locative case is marked by the suffix *-tti*, and tells location for some occurrence, goal or addressee. This case seems to be antonym to the ablative case in that it refers ‘to’ whereas the ablative case ‘from’ is in the opposite direction. The locative is used for nouns that represent general locations of events or states. Owens (1985: 110) states *-ttias* locative case in addition to that it considers the morpheme *-tti* as suffix appended to human noun indicating goal as postposition. Postpositions may also take the locative suffix.

(91)

a)

ʔarsíi	‘Arsi’	ʔarsiittí	‘in Arsi’
háarka	‘hand’	harkattí	‘in hand’
mána	‘house’	manattí	‘at home’
ɖʒála	‘under’	ɖʒalattí	‘under’
gálma	‘hall’	galmattí	‘in hall’

Similar to the nominative case, the high pitch is assigned to the final syllable of locative forms of nouns. The following are their representations.



4.2.2.3.3 Genitive case

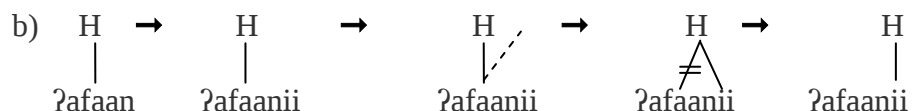
The case marked on nominals for indication of possession is genitive case. It corresponds roughly to English ‘of’ or ‘s’. The marker of genitive case in ABAO is signaled with lengthening of a short ending vowel of a noun and by adding *-ii* to a final consonant, and by leaving a final long vowel unchanged. In possession, if the vowel of the noun possessor is already long, occurrence of the possessed noun just before the noun possessor signals the genitive case. The possessor noun follows the possessed noun in a genitive phrase.

(92)

a)

míŋʼaa	‘boy’	ʔobboleettíi	míŋʼáa	‘boy's sister’
ʔobboleettíi	‘sister’	sister	boy	
k’ulk’ullína	‘purity’	k’ulk’ullína	bíŋaaníi	‘purity of water’
bíŋaan	‘water’	purity	water	
barúmsa	‘education’	barúmsa	ʔafaaníi	‘linguistics’
ʔafaan	‘language’	education	language	

The genitive signaled by adding *-ii* normally attracts pitch to the final position of the words. This in turn advocates assimilation to take place. Consider the example.



In (76 b) above, the basic form of the noun adds *-ii* to form the genitive. During this process, the suffix of the noun receives the high pitch from the preceding tone bearing unit by spreading. After spreading both the second and the third syllables gain high pitch, but for according to the pitch accent pattern of the language only the syllable terminating with front vowel is the one that has the high pitch, its pattern appears to be LLH than LHH.

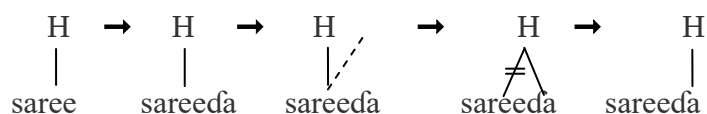
4.2.2.3.4 Dative case

The dative is used for nouns that represent the recipient (to) or the benefactor (for) of an event. The dative form of a verb infinitive which acts like a noun in ABAO indicates purpose. In the language dative case signals a noun that takes the position before or after the direct object with the function of telling for whom or to whom the action is done as semantic criteria. It can be formed by lengthening the final vowel of a noun or affixing morphemes that can be suffixed to nouns in order to mark the dative case. The dative takes one of the following forms: lengthening of the final short vowel, suffixing *-f*, suffixing *-da*, *daʃ* and *-tti*.

(93)

ʔoboléeessa	‘brother’	ʔoboleessáa	‘to the brother’
barsiisaa	‘teacher’	barsiisáaf	‘to the teacher’
sarée	‘dog’	sareedá	‘to the dog’
biʃáan	‘water’	biʃaaníʃ	‘to the water’
reʔée	‘goat’	reʔeettí	‘to the goat’

As displayed in (93) above, the high pitch is on the last syllable. Thus, for dative case the syllable that marks the case is assigned high pitch. Upon the assignment of the high pitch, the preceding syllable loses its high pitch and gains the low pitch from the preceding syllable.



The penultimate syllable loses its high pitch because in ABAO only one syllable is assigned high pitch. This is evidenced through the occurrence of the other word ‘*sareeda*’ having identical phonemes, but a high pitch on a different syllable. In this word *-da* is a copula and the high pitch for this word is on the penultimate syllable *sarée-da* ‘it is a dog’. The following is the representation of it.

(94)

H
|
sareeda 'it is a dog'

4.2.2.3.5 Ablative case

The source of an event, origin of a movement, is expressed by the ablative case. It is used to represent the source of an event; it corresponds closely to English 'from'. The ablative, applied to postpositions and locative adverbs as well as nouns proper, is formed in several ways. When the word ends in a short vowel, this vowel is lengthened as for the genitive while when the word ends in a long vowel, the morpheme *-daa* is added as for one alternative for the dative. The other way of forming ablative case is appending the morpheme *-ii* as for the genitive when the word ends in a consonant. One more morpheme that forms the ablative case is the morpheme *-tti*. It is added to a noun in the genitive form to show ablative case.

(95)

bíjja	'country'	bijjáa	'from country'
kéessa	'inside, in'	keessaa	'from inside'
finfinnée	'Addis Ababa'	finfinneedaa	'from Addis Ababa'
harár	'Harar'	hararíi	'from Harar'
mána jaatáa	'restaurant'	mána jaataatíi	'from restaurant'

The ablative case, similar to other cases discussed so far, attracts high pitch to the affixes attached to form it. The representation is also identical, the combination is LH or LLH; the same is true for instrumental case.

4.2.2.3.6 Instrumental case

The instrumental case refers to using of instruments or means to do something. In ABAO, it is marked by *-n*. The instrumental case marker is utilized based on the spelling of the nouns in almost similar way with that of the dative case. The instrumental case marker *-n* occurs

following long vowel. For a noun that ends in short vowel, the ending vowel is lengthened to append a marker of instrumental case. Nouns ending in consonant are suffixing the instrumental case marker *-in*.

(96)

ʔilkáan	‘teeth’	ʔilkiaanín	‘by teeth’
ʔulee	‘stick’	ʔuléen	‘by stick’
háarka	‘hand’	harkáan	‘by stick’

4.2.2.3.7 Summary of chapter four

In this chapter, we explored several aspects of the pitch-accent of ABAO. We identified that ABAO has a two pitch contrast - high, and low. However, there are instances of high pitches which are realized as highs because of adjacent high pitches. We identified that the pitches of nominal, verbal and adjectival are regularly non-low, i.e., that they bear high pitches. The chapter further discussed the role of pitch-accent in ABAO. Nominal morphology where it differentiates between singular and plural nominal, derived nominal, associative constructions and compounding were discussed. We also discussed the distinctions that are created in the syntax of the language based on pitch-accent differences. We specifically looked into the role of pitch-accent in marking the different tense, aspect and modal systems of the language.

A number of salient characteristics are shared accounts of pitch-accent in different *Afan Oromo* dialects. The pitch patterning of the ABAO is the same as that found in the other dialects in a number of respects. One significant evidence for this fact is the occurrence of only one high pitched syllable in a given word or accentual unit and the relativeness of the pitches on the syllable of a word. It is evidenced that phonological and morphological information is pertinent to prediction of pitch patterning. Syntactic context also determines the tone patterning within words.

As we discussed in this unit, a pitch-accent language is regarded as a language with just one lexical tonal melody, normally H, in which lexical items only differ in terms of the presence or absence of the tonal melody and its specific position in the segmental string. According to Clark

(1988: 51) pitch-accent language may be analyzed in either of two manners. These are (i) as a restricted tone language which has just one lexical melody, or (ii) as a metrical language in which the accent is realized as a high tone.

It may be important to note at this point that she makes a distinction between tonal pitch-accent languages and metrical pitch-accent languages. According to her idea, metrical pitch-accent systems share the characteristic properties of other metrical systems: every word is accented (be it in various degrees), the location of the accent is determined by syllable weight, and most importantly, the accent is realized phonetically by increased intensity and/or duration and/or pitch. In tonal pitch-accent system the accent is simply a tone at every level of phonological representation lacking all the above mentioned metrical properties (Clark, 1988: 52).

Advocating Clark's (1988) inspiration, we suggest that ABAO develops metrical pitch-accent system and is a language that share characteristic properties of metrical systems, such as the accentuation of each word even though the accent is not determined by syllable weight and the accent in the language is realized phonetically by increased intensity pitch. Aspects of metrical systems of the language that are observed will thus be discussed in the following chapter of the thesis.

CHAPTER FIVE

METRICAL ANALYSIS OF ARSI-BALE AFAN OROMO

PITCH-ACCENT PATTERNS

5.0. Introduction

Kaneko (1999: 64) states that the definition of pitch-accent and its relation with other suprasegmental features, such as tone and stress has been unclear and subject to debate for a long time. Taking this idea into consideration, the researcher would like to present the relation between pitch-accent and stress in ABAO. This chapter of the study, thus, attempts to discuss metrical analysis of pitch-accent patterns of *Afan Oromo*, particularly, the Arsi-Bale dialect, an accent spoken in Arsi and Bale Zones of Oromia Regional State of Ethiopia. The chapter explores three major approaches to accent and develops a metrical analysis of ABAO nominal, verbal and adjectival accent. It begins by presenting how pitch-accent has been treated in previous researches.

5.1. Overview of previous research on accent

In earlier typological studies, natural languages were assumed to be divided into stress languages, tone languages, and pitch-accent languages, with respect to how prominence is realized on words. In stress languages like English, prominence is realized by some combination of pitch, vowel duration (length), and greater intensity (loudness). One factor alone is not sufficient to indicate stress. Also, in these languages, the location of stress is usually predictable. In tone languages, each syllable of the word is associated with a specific tone (or pitch). The occurrence of tone is lexically specified and therefore the meaning of words can differ by tone although their segmental sequences are exactly the same. Pitch-accent languages are similar to tone languages in this sense. One of the differences between them is that in pitch-accent languages, the pitch or tonal pattern of the entire word is predictable given the location of the accent, e.g. a high pitch just before the pitch falls, which is lexically indicated.

However, the three types of suprasegmental systems are not completely different. They have some properties in common. Stress and pitch-accent fall into the same category called 'accentual system', and have such properties in common as conclusive function (only one syllable per word receives accent), contrastive nature (lexical accent brings about contrast in otherwise identical

words), edge effects (initial and final accents are commonly attested in the world's languages), and so on (Hyman, 1977; Liberman and Prince 1977; Hayes, 1995; Alderete, 1999; and others). As Odden (1995) notes, the notion that 'tone languages' are distinct from 'accent languages' is a rather old one.

Languages are not entirely tonal or entirely accentual: there is no clear distinction between tone languages and accent languages. Languages employing non-intonational pitch distinctions make up a continuum that from a theoretical point of view should be approached in terms of a set of parameters that seem to define systems as being more typically 'Tone Languages' or more typically 'Pitch Accent Languages' (van der Hulst and Smith, 1988). There is no clear distinction between tone languages and stress languages, either. There is, of course, a difference between them; whether pitch distinctions within the word are lexically specified or not. However, it is not possible to categorize all languages into only three types. For example, in Malayalam, a Dravidian language spoken in Southern India, lexical distinctions are realized as L-tone (Mohanani, 1986), or in Chamorro, the language of Guam (Chung, 1983; Prince 1990) the accented vowels are lengthened. Also, a language can possess both a tone system and a stress-accent system (van der Hulst and Smith, 1988). Western European so-called 'pitch accent' systems are regarded as the combination of tone and stress, as the stress is realized as a H-tone. Hence, as given in (97), tone languages and stress languages comprise a continuum at each edge of which is a pure tone system and pure stress system. So-called 'pitch-accent' languages are in between.



5.2. Theories of Pitch-Accent

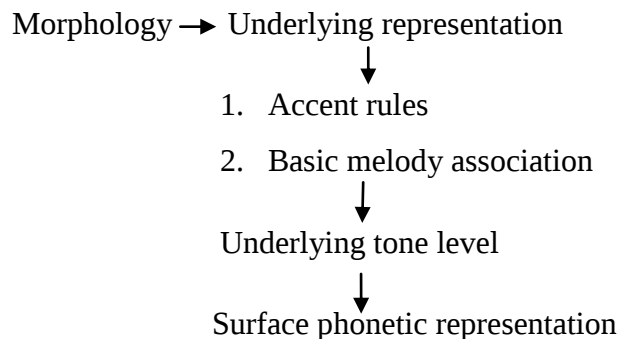
Because of its intermediate character, pitch-accent has been treated in various ways in various approaches. Overall, it is possible to identify three kinds of theories for the analysis of pitch-accent systems: diacritic accent, pre-linked H-tone, and metrical accent (Kaneko, 1999: 64). The following is the discussion of each theory for the analysis of pitch-accent system.

5.2.1. Diacritic Accent

An analysis of diacritic accent is first proposed by Goldsmith (1976) within the framework of autosegmental phonology. In this framework, 'accent languages' are differentiated from 'tone languages' in the respect that tonal information is not part of the lexical representation of words and morphemes. Instead, accent is represented as a lexical diacritic (*). A predictable tone melody consisting of a fixed sequence of two or three tones ('Basic Tone Melody') is inserted by the general Accent Association Rule. One of the tones in the Basic Tone Melody is designated as accented, and is associated with the accented vowel. The melody spreads over the rest of the word in accordance with the 'Well-formedness Condition', that states

- (i) All vowels are associated with at least one tone.
- (ii) All tones are associated with at least one vowel.
- (iii) Association lines do not cross.

The derivational model of accent system of Goldsmith (1984) is summarized as follows:



5.2.2 Pre-linked H-tone

The analysis of diacritic accent is questioned by Pulleyblank (1984, 1986). He argues that diacritic accent is not necessary in the phonological theory, and identifies a number of conceptual problems with the notion of 'accent'. First, although diacritics are used in metrical theory for marking certain syllables lexically prominent in order to trigger the same rules, it cannot be the motivation for the introduction of diacritics into autosegmental systems. There is no obvious similarity and no relation between the two diacritics. Diacritics in metrical theory

have a function of head-marking but accentual diacritics do not trigger formation of any types of metrical structure. They serve to align tones and tone-bearing units (TBU).

Second, 'accent' can be represented by a pre-linked tone. The use of diacritics is analogous to the pre-linking of tones. It is not necessary to have two types of exception features for autosegmental theory. Pre-linking is an inherently less powerful device than the 'accents'. In the pre-linking approach, pre-assignment of a tone is possible only morpheme-internally, but in the diacritic approach, this exceptional linking is accepted both morpheme-internally and morpheme-externally (i.e. cross-morpheme pre-linking).

Third, one of the general properties of accent systems is that accents are limited to one occurrence per word. A diacritic accent analysis must stipulate this. Such a stipulation could not be considered an argument against a tonal analysis; as such morpheme-structure constraints are not uncommon in tone-languages. The discovery of limitations on the number of accents or tones that can be assigned to some prosodic unit is consistent with treating accent as a pre-linked tone. Fourth, the same tonal distribution could be accounted for both accentually and tonally. It is widely accepted that in tone languages, for a language with k tones, the number of contrasting tonal patterns in words with n syllables approaches k^n , while in pitch-accent languages, the number of pitch contrasts in words with n syllables approaches n , or $n+1$ if words can be underlyingly accentless (McCawley, 1968; Odden 1995). However, languages are rarely so straightforward. Some so-called 'tone' languages restrict the occurrence of certain tones on certain syllables; therefore the number of prosodic patterns is less than k^n . On the other hand, it has been proposed that accents may be assigned more than one tonal melody, thereby multiplying the number of possible prosodic patterns in such an accent system.

Fifth, tonal asymmetry is not restricted to 'accent' systems. It has been claimed that in tone languages, tones behave in a relatively symmetric fashion, whereas in accent languages, one tone (generally the H-tone) has some special status. Tonal asymmetry can also be accounted for by a theory of tonal underspecification. Asymmetries arise when some TBUs are specified for tone and others are not. So, if we assume that the underlying accent can only be an underlying H-tone, this asymmetry can be accounted for.

Finally, tonal melodies assigned to diacritic accents are disallowed in the construction of grammar. Chomsky & Halle (1968) propose that a phonological rule such as $A \rightarrow BC / P - Q$ should be banned. The rules assigning tonal melodies to diacritic accents are rules of this sort, because basic tone melodies assigned to diacritic accents are sequences of tones, i.e. $* \rightarrow HL / P - Q$. Such rules should only be allowed if it can be demonstrated that the tonal sequence constitutes some type of single unit. To allow this assignment opens up the possibility of all manner of rules that would violate the condition prohibiting rules of the type. Since tonal melodies can be derived by pre-linking a tone and by a rule of tonal epenthesis, there is no reason to include diacritic accents in the autosegmental framework.

In addition to Pulleyblank, Clark (1987, 1988), Blevins (1993), and others adopt the pre-linking approach. What distinguishes pure tone systems from pitch-accent ones is the underlying distribution of tones and the types of phonological rules which manipulate them. The accentual contrasts from which each lexical item chooses its tone melody are assumed to be more restricted in accent systems than those in tone systems. In this sense, accent systems can be considered as 'restricted tone systems'.

Phonological rules may apply over long distances in accent systems, while they apply only locally in tone systems. The pre-linked tone could potentially be either H or L, but Pulleyblank (1986: 164) claims that only H-tone must be pre-linked. Lexical redundancy should be minimal. Thus, it is necessary that the value of a pre-assigned segment be different from the default value. In version of the theory of underspecification (Kiparsky, 1982; Pulleyblank 1986), only marked values for features are allowed in lexical entries.

5.2.3. Metrical Accent

We have so far considered two possible analysis of pitch-accent: the diacritic accent analysis and the pre-linked tone analysis. There is a third kind of analysis that has been proposed in the literature; the metrical analysis of accent (Lieberman and Prince, 1977; Halle & Vergnaud, 1987; Kenstowicz 1987; Hayes 1995; and others). As van der Hulst and Smith (1988) observe, there are languages in which the assignment of a H-tone is dependent on the location of stressed syllables, or the stress is given to certain syllables according to the tonal information. This approach seeks formal similarities between metrical systems and tone, such as non-local

operation, binary groupings, and quantity-sensitivity. Accent is construed as a lexical prominence and is realized differently from one language to another - as a designated tone in so-called pitch-accent languages and as a stress, i.e. the combination of pitch, length, and loudness, in stress-accent languages. Because it is necessary that either H-tone or L-tone be associated to the prominence of a word assigned to metrical structures, this approach probably should be called the mixed metrical-tonal approach. The advantage of the metrical accent is that stress and pitch-accent can be reduced to a single prosodic system as 'accent'. The mixed metrical-tonal approach assumes that stress and pitch-accent have the same kind of prominence in underlying representations. The primary difference between them is their realizations. In addition, as the purpose of the approach implies, it accounts for why an H-tone is attracted to certain positions and vice versa. For example, the tonal processes operating over long-distances are naturally explained in metrical theory, because one adjacent lexical accent is deleted due to the headedness of a stress foot.

5.2.4. Approach for ABAO pitch-Accent

Among the three major proposals for the representation of accent, we claim that the mixed metrical-tonal approach provides the best account of ABAO accent. Although the pitch-accent assignment of ABAO nouns, verbs and adjectives require lexical specification in some cases, it is not completely unpredictable. As we have observed in Chapter 4, both heavy syllables and light syllables attract an accent. This implies that accent assignment is quantity insensitive. The metrical approach which we adopt for the analysis of ABAO accent is the Kager (1995) theory.

In his derivational analysis, asterisks on line 0 in the metrical grid columns mark each potentially stress-bearing unit. Syllables with another asterisk on line 2 in the metrical grid columns are those with a primary stress. Consequently syllables with asterisks on line 1 in the metrical grid columns only have secondary stress. After metrical rules apply, a H-tone is associated to the stressed syllable within the word. Following his idea, we formalize the lexical prominence as a line 2 grid mark. The generalizations of the ABAO accent show that the pitch peak appears on ultimate and penultimate syllables.

A set of instructions for formalizing the ABAO pitch-accent system can be formulated within a metrical framework. As originally intended and developed, metrical representation can be

generated by a list of instructions. A set of statements can also be created for describing the hierarchical tonal structure within actual ABAO utterances.

Metrical analysis of pitch-accent patterns for ABAO can be built up by assignment of asterisks to syllables. This creates a grid in which a higher number of asterisks reflect a more prominent value. For example, via a rule requiring that each syllable is assigned one asterisk /k'aama'/ 'body' can be represented as:

(98)

```

      *
    *  *
k'aama

```

In metrical analysis of ABAO, the relationship among the asterisks represents stress patterns. The representation in (81) reflects the greater stress on the first syllable 'k'aa', as related to the lesser stress on 'ma'. In Metrical analysis of ABAO, the values represent relative pitch patterns.

Several rules for assigning pitch-accent patterns to ABAO words are resulted in the grid theory of metrical phonology. The beginning of the set of rules is allocating one asterisk to each syllable. This is what is termed 'Perfect Grid' (Kager, 1995: 383). Directionality fixes its starting point at the right edge for ABAO. A starting parameter makes Perfect Grid start either with a rhythmic peak, or with a rhythmic trough. This generates the basic systems of quantity insensitive nature of the language.

(99)

Right to left trough first

```

          *      W
        *  *      F
    *  *  *  *  σ  dargargéessa 'youngster'

```

We can consider the process of assigning asterisk to each syllable to reach at the final representation of the stress pattern of the language. This can be considered the first direction. Application of this rule to ABAO words will yield the following representations.

(a) Assign an asterisk to each syllable.

(100)

* *
gamna 'wise'

* *
furrii 'mucus'

* * *
ʔintala 'girl'

* * *
k'amalee 'ape'

* * * *
bareedina 'beauty'

* * * *
dulaandula 'leech'

In order to describe the high pitch on the final syllable in the basic form of disyllabic/trisyllabic words terminating with the consonant sound, usually coronal nasal; long low vowel /a/ preceded by vowels other than long front vowel and high back long vowel and all nouns terminating with a final front long vowels, an additional instruction will be needed. This may be stated as:

b) Assign an asterisk to the final syllable of disyllabic/trisyllabic nouns in the basic form that terminate with consonant, long low vowel and final front vowel.

(101)

*
* *
furrii 'mucus'

*
* *
reʔee 'goat'

*
* * * *
ʔoboleettii 'sister'

*
* *
ʃamaa 'rotten'

*
* * *
dʒidʒiraa 'transfer'

*
* *
midaan 'cereal'

- c) Assign an asterisk to the third syllable from the stressed one of a word that has more than two syllables to avoid stress clash.

(102)

* *	* *
* * * *	* * * *
ʔoboleettii ‘sister’	dūlaandūla ‘leech’

- d) Assign an asterisk to the stressed syllable based on the rule of the language.

(103)

*	*
* *	* *
* * * *	* * * *
ʔoboleettii ‘sister’	dūlaandūla ‘leech’

Like pitch-accent, stress also functions to encode information in the ABAO grammar. In basic forms, deictic expressions and other short non-interrogative expressions in neutral circumstances, stress and pitch-accent are concomitant in the accent syllable. The syllable displaying highest pitch displays a more prominent intensity. Other syllables exhibit lesser and equal intensity levels.

Stress is greater on the final syllable of trisyllabic nouns in the basic form. The syllable with the highest pitch also has the greatest degree of intensity. Likewise, the final syllable of nouns in the nominative, genitive and dative cases is found to bear the greatest degree of intensity. Similarly, intensity and pitch are found to be most prominent on spontaneous syllables on words in other domains of the ABAO grammar in words of other syntactic classes.

In longer expressions, interrogative expressions and expressions in non-neutral situations, syllables with the highest pitch are not necessarily produced at greater intensities. This raises some interesting questions regarding the functional role of stress within the ABAO language. One might hypothesize that stress functions at sentence or discourse level. As relevant tone information is not lost by devoicing, the restraint against devoicing of the final syllable of the

interrogative verb form may function to protect the stress information that would otherwise be lost by devoicing just because it is necessary for encoding the interrogative mood of the verb form.

5.3 The Interaction of pitch-accent and Stress in ABAO

Stress and pitch-accent systems have each been objects of prolonged linguistic study. The prototypical members of each type of system are relatively well understood. But prosodic systems that combine the characteristics of both stress and tone systems are less well studied, and continue to pose descriptive and theoretical challenges (Hyman, 2006, cited in Michael, 2011: 53).

The ABAO word prosodic system consists of clearly distinguishable pitch-accent and stress systems, in which pitch and stress have distinct correlates. Few tonal minimal pairs exist in the language, but pitch-accent is also dependent on the position of primary stress. The language exhibits a requirement that each prosodic word carry a single high tone. If a given word exhibits no lexical tones, a high tone is assigned to the syllable bearing primary stress.

5.4 Summary of chapter five

ABAO is characterized as a pitch-accent language where the high pitched syllable attracts stress. Stress falls on syllables that have high pitch irrespective of the weight of the syllable for the language is quantity-insensitive. The place of stress changes under affixation. It is the language that dominantly displays main stress on penultimate syllable. But there are cases when stress is attracted to the last syllable. This happens when a word ends with a long low vowel /a/ or terminates with the front vowels and a consonant /n/.

Like pitch-accent, stress also functions to encode information in ABAO. Pitch-accent and stress are concomitant in the accented syllable. The syllable displaying the high pitch displays a more prominent intensity. Stress is greater on the final or penultimate syllable of trisyllabic nouns in the basic forms.

The syllable with the high pitch also has the greatest degree of intensity in the word. Likewise, the final syllable of nouns in the nominative, genitive, and dative cases is found to be most prominent on coincidental syllables and words in other domains of the ABAO grammar in words of other syntactic classes.

CHAPTER SIX

SUMMATION OF THE STUDY

6.0 Purpose, objective and method of the study

The main purpose of the current study was to describe and represent issues in ABAO morphophonemics within the general framework of ‘Non-linear phonology’. Particularly, the versions of Autosegmental,

Metrical and CV phonology were mainly used to address the morphophonemics of the language. There were four questions that guided the research which focused on the phonology of the language. In order to meet the objectives and answer the questions, the study was based on the information obtained from three consultants. Stories collected by The Oromia Educational Bureau in 1997 were also included in the assortment. Furthermore, personal second language speaker intuition was used to check the validity of the data gathered. Then, the data were transcribed and recorded for further inspection. The analysis of all the collected data can be recapitulated as in the following section of the thesis.

6.1 Abridged form of the findings

ABAO is a Subject-Object-Verb (SOV) language where the verb occurs at the end and the subject in the initial position in the sentence. The language is characterized as pitch-accent language where pitch accents phonologically associate with stressed syllables and align with them. The language comprises of 24 consonant phonemes that can be sub-divided into labials (b, f, p', m, w), coronals (t, d, d', s, ʃ, tʃ, dʒ, d, t', tʃ', n, ɲ, l, and j), dorsals (k, g, k') and laryngeals (ʔ, h) where all except laryngeal /h/ can occur as geminates. The language has typical Eastern Cushitic set of five short and five long vowels (i/ii, u/uu, e/ee, o/oo and a/aa).

It was believed to be true that the mere inventory of the sounds of a language alone does not offer enough bases to make general statements about the nature and behavior of sounds for phonological analysis. Thus, the phonological ingredients termed ‘Distinctive Features’, which phonemes are made up of were discussed for they play a vital role in the morpho-phonological analysis of ABAO. The sounds of ABAO were classified and discussed under major class features, Cavity Features, Tongue Body Features, Manner Features and Laryngeal Features. The

sounds in ABAO were classified under the three major class features; Consonantal/non-consonantal, Syllabic/non-syllabic, and Sonorant/non-sonorant. The features relevant for the description of ABAO sounds were categorized under two broad areas. These were Primary stricture, which include Coronal/non-coronal, Anterior/non-anterior, Labial/non-labial; /Round/non-round. The Tongue-body features which were split as High/non-high, Low/non-low, Back/non-back/Dorsal and short/long. Manner features were separated as Continuants/non-continuants, Lateral/non-lateral, Nasal/non-nasal, Strident/non-strident and Delayed Released/Instantaneous Release. The Laryngeal features that specify the glottal state of sounds which include [+/-voice] and [+/- spread glottis]; [+/- constricted glottis] were also separated as a prerequisite for further clarification in the study.

The syllable structure of the language was also discussed for syllable has been considered important construct of phonological theory. It was clarified that adequate description of the domain of application of a wide range of phonological rules could be handled if syllable structure of the language is identified. It has also been noted that the most general and explanatory statement of phonotactic constraints of a language could be made only by reference to the syllable. Furthermore, it was revealed that an adequate treatment of suprasegmental phenomena like stress requires that segment be viewed as units.

Considering the above uses of syllable in the discussion of the morphophonemics of the language, we identified the syllable types of the language. The minimal ABAO syllable identified consists of a consonant and a vowel, while the maximal syllable structure is CVVC, in which VV is a long vowel. The language basically operates an open syllable system. The few syllables that have codas usually have sonorant sounds (nasals, trill, lateral), fricatives /f, s/ and stops (t, d) in the coda positions. No CC onset and coda cluster was found in this language.

After discussion of the phonemes of the language with their distinctive feature and how they combine into syllables, we demonstrated some morphophonemic processes. It was observed that, like other languages, morphophonemic processes in ABAO are results of pronunciation in connected speech. In connected speech, certain segments have the tendency to run together; extra segments may be added to ensure smoothness of speech. Some segments adopt a less clearly defined phonetic form; and some completely disappear. Phonological processes are therefore, sound modifications motivated by the need to maintain melodiousness in a language or to resolve

violations of well-formedness constraints in the production.

The first and common observation of morphophonemic process that identified in ABAO was coronal assimilation. According to (Palmada & Serra, 1991: 182) coronals behave asymmetrically with respect to other consonants. This is the case of the coronal and the nasal stops in ABAO. It was perceived that they are placeless and have only a specification for manner. It is generally assumed that this behavior derives from the general theory of underspecification. Following the strategy that morphophonemic processes are best explained through focus on the representational component, we viewed assimilation process as simple operation of spreading which takes place from right to left and only to an empty position. The coronal nasal, for instance, patterns as if it has no specified place of articulation. The assimilation of coronal nasal is parallel to that of the sounds occurring after it. Its articulation is totally dependent on the following consonant. We predict this behavior by underspecifying the coronal node in the representation of the nasal. ABAO exhibits another assimilatory process in which the coronal nasal is involved. The dorsal stop sounds /k/ and /g/ assimilate to the coronal nasal sound.

It was also detected that there is ejection assimilation. The feature [ejection] in ABAO assimilates to the following obstruent sound /t/. In fact, Progressive laryngeal assimilation appears to be quite general in Oromo, since voicing also spreads in this way. The alveolar stop /t/ exhibits the assimilation of adjacent voiced obstruents. It agrees in voicing with the following sound. Hence, it undergoes voice assimilation. The coronal sound /t/ is also subject to regressive assimilation when it occurs before the implosive sound /d/.

Metathesis was also the morphophonemic process found in the language. Lloret (1988) asserts that in Oromo an ejective alveolar stop /t'/ and alveolar nasal /n/ undergo special metathesis. We assume this is applicable to co-occurrence of the ejective velar stop sound /k'/ and /n/ as well. It is also perceived that there is a common type of metathesis in ABAO. In this language, liquid and sibilant sounds undergo metathesis with stops (k, b) and fricative (f). Liquid sounds /r/ and /l/ and a preceding obstruent /g or b/ or fricative /f/ reverse in order after they become adjacent upon deletion of the intervening vowel.

Compensatory lengthening is the other phonological process recognized ABAO. CL in Oromo occurs when the segments /ʔ/ and /d/ delete in a coda position and lengthening of the preceding vowel automatically follows (Lloret, 1988). We identified the process is often triggered by the deletion of a weight-bearing coda. It occurs when a one syllable root word ends with glottal segments /ʔ/, /d/ and /h/.

Insertion as a morphophonemic process was also distinguished. In ABAO, the insertion of glottal stop exists at the initial position of words and syllables and vowel epenthesis occurs in the interior of the word and at word final positions. In ABAO when a vowel occurs in word initial position, a glottal stop [ʔ] is inserted before it. Generally, word-initial glottal stop insertion is based on the property of ABAO syllable structure since no word may begin with a vowel in phonetic form. So, if a word begins with a vowel in phonological form, a glottal stop consonant will fill the onset position. The glottal stop in ABAO language has also an important phonological function in separating two consecutive vowels which are either qualitatively different because of length or due to other phonetical features.

The other insertion identified was vowel epenthesis. Epenthesis often breaks up a consonant cluster or vowel sequence that is not permitted by the phonotactics of a language. This phonological process was detected from the words collected. ABAO does not allow clusters of three consonants. When such clusters would arise through affixation, vowel [i] is inserted between the second and third consonants. When certain morphemes are affixed to the root, three clusters of consonants emerge, consequently the need for the insertion of the epenthetic vowel instigates. Vowel epenthesis is also a common phonological process in dealing with loan words in many Languages, especially where the syllable structure of borrowed words do not obey the syllable structure requirement of the borrowing language. Due to this Morpho-phonological constraint that ABAO poses, vowels are epenthesized in loan words to generate valid output in conformity with the ABAO syllable structure requirements. ABAO insert a vowel [i] in between consonants and add a vowel at the end of every word to conform to the preferred syllable structure of ABAO. It has been observed that epenthetic segments are often the least marked segments in a particular language. If low vowels are unmarked the epenthetic vowel is [a]. If non low vowels are unmarked, the epenthetic vowel is the least marked possible given the vowel

system of the language (Lombardi, 2002: 1). The least marked vowel in ABAO is /i/, thus, it is an epenthetic vowel in the language.

Even though vowel harmony is not the regular phonological process in ABAO, cases where this phonological process appears was distinguished. Goldsmith (1990: 304) discusses vowel harmony, which refers to the phenomenon that vowels in a certain domain (usually the phonological word) must agree for a specific feature, i.e., all bear the same value for roundness, height, backness, or a combination of features. In ABAO, when the root verb with final consonants /j/ and /ʔ/ are followed by the first or third person perfective morpheme -te or first person plural perfective morpheme -ne, the root and the suffix vowel belongs to the same harmonic set as the suffix vowel. If a suffix vowel belongs to a particular set, then any root to which the suffix attached to will also be from the same set.

Dissimilation of vowel length is the other morphophonemic process identified in the language. It occurs when two consecutive syllables comprising of long vowels appear. In this case, only one syllable can have a long vowel. Thus, allomorphic variation of the plural suffix - (o)ota / -t(o)ota is predictable from the stem it attaches to. The vowel of the suffix lengthens just when it attaches to a base that ends with a short vowel, and the vowel of the suffix shortens when it attaches to the base that ends with a long vowel. The allomorph of the causative suffix -s(i)isi/- (e)essi also supports this observation.

Reduplication is one of the morphophonemic processes recognized in the language. it serves to mark plurality in the language. ABAO reduplication is morphological namely, the affixation of a skeleton to a stem. The initial consonant and vowel of the stem of verbal and adjectival form in Oromo reduplicate. In addition, the reduplicant's consonant and the initial consonant of the stem geminate in the processes, hence, can be described as having a C₁V₁C₁ structure.

As we mentioned in the second paragraph of this chapter, ABAO is characterized as a prototypical pitch-accent language where one syllable per word has high pitch. The monosyllabic nouns are rare and those that have been identified in this study are all high pitched. Words that terminate with the coronal nasal sound attract pitch-accent regardless of the number of syllables.

This pattern works for all ABAO words that end with this sound. This may be because it is the next sonorous sound after vowels and semi-vowels. The other nouns of words that attract pitch-accent to the final syllable comprises of the long low vowel /a/. Nouns that terminate with long low vowel /a/ preceded by vowels other than long front vowel and high back long vowel and nouns end with final front long vowels were detected as those that attract pitch-accent to the final syllable. Adjectives and verbs, like nouns, were also classified as words that have pitch accent either on the penultimate or the final syllable. It was noticed that adjectives and verbs having high pitch-accent on the final syllable are fewer in number than those that have pitch-accent on the penultimate syllable.

In ABAO, the grammatical subject of an expression is marked by predictable pitch patterning as well as suffixation. Although the suffix varies depending upon the phonetic shape of the noun, the high pitch is always found on the final syllable of nouns. Subject pronouns and reflexive pronouns take high pitch-accent on the penultimate and ultimate syllable following the same pattern as nouns do. All case marker suffixes in ABAO attract stress to the final syllable of the word. It was concluded that, in ABAO expressions, the location of pitch-accent functions to encode grammatical information. Even though lexical items are not distinguished by a difference in the pitch of a syllable alone the grammatical function of a word may be distinguished by just such a difference. Thus, while tone is not contrastive in the lexicon, the meaning of a string can be changed by changing the tone of a single syllable.

As we stated earlier ABAO was characterized as a pitch-accent language where the high pitched syllable attracts stress. Thus, stress in ABAO falls on syllables that have high pitch irrespective of the weight of the syllable for the language is quantity-insensitive. The place of stress changes under affixation for it coincides with the placement of pitch. ABAO was examined for the binary parameters which specific language select. It was identified that the language dominantly displays main stress on penultimate syllable. Regarding the position of the foot, the language dominantly displays left headed foot, but there are cases where the stress falls on the right of the foot. This occurs when the word ends with a long low vowel /a/ or terminates with the front vowels and a consonant /n/. It was also scrutinized that parsing of the syllable is from right to

left. The language is characterized as a language without extrametricality for no constituent of the word was observed to be transparent for stress.

Like pitch-accent, stress also functions to encode information in ABAO. Pitch-accent and stress are concomitant in the accented syllable. The syllable displaying the high pitch displays a more prominent intensity. Stress is greater on the final or penultimate syllable of trisyllabic nouns in the basic forms. The syllable with the high pitch also has the greatest degree of intensity in the word. Likewise, the final syllable of nouns in the nominative, genitive, and dative cases is found to be most prominent on coincidental syllables and words in other domains of the ABAO grammar in words of other syntactic classes.

6.3 Representation of the phonological processes

The analysis in the phonology of ABAO was based on non-linear phonological theory. In non-linear phonology, as we discussed in the paper, utterances are made up of several kinds of simultaneous levels, with each level related to but ordered independently of any other level. Various models of non-linear phonology were practiced in analyzing the phonological phenomena of the language.

Feature Geometry model, which branched from Autosegmental phonology, was used to analyze assimilation; CV phonology model was used to analyze compensatory lengthening, epenthesis, vowel harmony and dissimilation. Metathesis was analyzed based on Hulst (1983) and Smith (1984), cited in Hulst and Smith (no date: 28), suggestion that proposes the representation of vowels and consonants on different tiers. The pitch-accent system of the language was analyzed in Autosegmental Phonology model of Non-linear phonology.

The other theory that we used was Metrical phonology. Metrical Phonology is the branch of linguistic theory concerned with stress phenomena in natural language. It can be represented by metrical trees and metrical grids. Metrical trees reflect constituency through sister nodes, but fail to represent in any transparent way typical stress characteristics of stress clash or alternating rhythm between strong and weak syllables. Prince (1983) and Selkirk (1984), cited in (Kager, 1995: 381), argued that the metrical grid could better capture the rhythmic

characteristics of stress, and that constituency into feet could be eliminated. Thus, we used the grid theory of stress to analyze the stress pattern in ABAO. We generally observed that Non-linear Phonology is effective in representing the phonological phenomena that exist in the language for it clearly shows each step in the course of action.

References

- Abarra Nafa 1988. *Long Vowel in Oromo*. A Generative Approach. MA. Thesis. Addis Ababa University
- Alemayehu Haile. 1991. *Assimilation in Amharic*. Paper presented at the fifth annual seminar of ILS. Addis Ababa University
- Alderete, John. 1997. Dissimilation as Local Conjunction. In *Proceedings of twenty seventh annual meeting of the North East Linguistics Society*, ed. Kiyomi Kusumoto, 17-31. Amherst, MA: Graduate Linguistic Student Association.
- Al-Shuaibi , A. 2011. Nasal Homorganic Assimilation Phenomenon in YTD: An Autosegmental Analysis . In *Strength for Today and Bright Hope for Tomorrow*. V. 11
- Amanuel R. and Samuel A. 2012. “Homonymy as a Barrier to Mutual Intelligibility Among Speakers of Various Dialects of Afan Oromo” In *Journal of Language and Culture* Vol. 3(2), pp. 32-43.
- Anderson, John . 1969. “Syllabic or Non-Syllabic Phonology.” *JL5*: 136-143
- Anderson, Stephen R. 1985. *Phonology in the Twentieth Century: Theories of Rules and Theories of Representations*. Chicago: University of Chicago Press.
- Andrzejewski, B.W. 1957. “Some Preliminary Observations on the Borana Dialect of Galla.” In *Bulletin of The School of Oriental and African studies*. Vol 19, PP 357-74
- _____. 1970. “The Role of Tone in the Borana Dialect Galla.” In *Proceedings of the III International Conference Of Ethiopian Studies*.
- Archangeli, D. 1984. *Underspecification in Yewelmani Phonology and Morphology*. PhD. Dissertation, MIT. Cambridge, MA.
- Archangeli, D. & Pulleyblank, D. (2002). Kinande vowel harmony: domains, grounded conditions and one-sided alignment. *Phonology* 19: 139 – 188.
- Banti, G. 1988. “Two Cushitic Systems: Somali and Oromo Nouns”. In: Harry van der Hulst, Norval Smith (eds.), *Autosegmental studies on pitch accent* , Dordrecht: Foris, pp. 11–49.
- _____. 2008. “*Oromiffaa*”. In S. Uhlig (ed.). *Encyclopaedia Aethiopica*, Wiesbaden: Otto Harrassowitz. p.4
- Baye Yimam. 1986. *The Phrase Structure of Ethiopian Oromo*. PhD Dissertation. School of Oriental and African Studies. University London.

- Bender, M.L. Mulugeta Etaffa and Stinson, D.L. 1976. In Bender et al (eds) *Language in Ethiopia*. London: Oxford University Press.
- Benyam Abebe. 1988. *The Phonology of Rayya Oromo*: A Senior Essay presented to the Department of Linguistics, Institute of Language Studies, A.A.U.
- Blevins, Juliette. 1995. "The syllable in Phonological Theory." In Goldsmith John A. (ed), *The handbook of Phonological Theory*. Cambridge: Blackwell Publishers
- Belvins and Andrew, G. 1996. *Compensatory C/V metathesis*. Angeles: University of California.
- Booij, G. 1995. *The Phonology of Dutch*. USA. Oxford University press.
- Buckley, Eugen, 2011. Metathesis. In Marc Van-Ootendorp, Colin J. Ewen, Elizabeth Hume and Karen Rice, eds., *The Blackwell Companion to Phonology, Volume 1*. London:Blackwell
- Campbell , George L. and King , Gareth. 2013. *Compendium of the World's Languages*. USA. Third Edition. V.I
- Casali, F. R. 2008. ATR Harmony in African Languages. *Language and Linguistic Compass*, 2/3 pp.496-549
- Carr, P. 1993. *Phonology*. London: Macmillan
- _____. 2008. *A Glossary of Phonology*. Edinburg University Press Ltd. 22 George Square, Edinburg.
- Childs, G. 1989. "The extra –high tone of Kisi: Just another tone or a new system of In Paul Newman and Robert D. Botne,(eds) *Current approaches to African Linguistics* (Vol.5) PP.141-50 Dordrecht: Foris publications.
- Chomsky, N. and Halle, M. 1968. *The Sound pattern of English*. New York: Harper and Row.
- Clamons, R. 1995. "How Recent Contact Erased Ancient Traces in the Gender systems of Oromo Dialects." In proceedings of the 21st Annual Meeting of the Berkeley Linguistics Society: In General session and Parasession on Historical Issues Socio-linguistics/Social Issues in wHistorical Linguistics, pp. 389-400
- Clamons, Cynthina R. 1988. *Tone Patterns in Oromo*. MA Thesis, University of Minnesota.
- Clark J, Yallop. 2007. *An Introduction to Phonetics and Phonology*. Oxford: OUP Phonetics and Phonology. Oxford: Oxford University Press.
- Clark, M.M. 1988. An accentual account of the Zulu noun. *Autosegmental studies on pitch accent*. H. van der Hulst & N. Smith (eds.). Dordrecht: Foris Publications.

Clements, George N. 1976. *Vowel Harmony in Nonlinear Generative Phonology*. Bloomington: Indiana University Linguistics Club.

Clements, G.N. and Keyser, S. J. 1983. *CV Phonology*. Cambridge: MIT Press.

Clements, George N., and John A. Goldsmith, eds. 1984. *Autosegmental Studies in Bantu Tonology*. Dordrecht, Holland and Cinnaminson, NJ: Foris.

Clements, George N. 1985. *The Geometry of Phonological Features*. *Phonology* 2: 225–252.

_____. 1990. The role of the sonority cycle in core syllabification. In John Kingston and Mary E. Beckman (eds), *Papers in Laboratory Phonology I: Between the grammar and physics of speech*, 283 – 333. Cambridge University Press.

_____. 1991. Place of articulation in consonants and vowels: A unified theory. In *Working Papers of the Cornell Phonetics Laboratory* 5:77-123. Ithaca: Cornell University.

Clements, G.N. and Elizabeth Hume. 1995. The internal organization of speech sounds. In J. Goldsmith ed., *The Handbook of Phonological Theory*. Oxford: Blackwell. 245-306.

Crystal, D. 1991. *A dictionary of linguistics and phonetics*. Oxford: Blackwell Publishers Ltd.

_____. 1997. *A dictionary of Linguistics and phonetics (5th edition)*. Oxford: Blackwell.

_____. 1997. “*The Cambridge Encyclopedia of Language*.” Cambridge: Cambridge University Press. p.140.

_____. 2008. *A Dictionary of Linguistics and Phonetics (3rd edition)*. London: Blackwell.

Dejene Geshe. 2010. *Kamise Oromo Phonology*. MA Thesis. Addis Ababa University

Dejene, G. and Devardhi J. 2013. *Assimilation in Oromo Phonology*. Language in India www.languageinindia.com ISSN 1930-2940 Vol. 13:10.

De Lacy, Paul. 2002. *The interaction of tone and stress in Optimality Theory*. *Phonology* 19.1: 1-32.

Dilley and S. Shattuck-Hufnagel. 1996. “*Glottalization of word-initial vowels as a function of prosodic structure* .” In *Journal of Phonetics* 24 , 423 – 44. Massachusetts Institute of Technology , Cambridge , MA 0 2 1 3 9 , U .S .A

Durand, J. 1990. *Generative and Non-linear Phonology*. New York : Longman

Fallon, Paul D. 2002. *The Synchronic and Diachronic Phonology of Ejectives*. Routledge

Feda Negese. 2015. *Classification of Oromo Dialects: A Computational Approach*. International Journal of Computational Linguistics (IJCL), Volume (6): Issue (1) : 2015

Federal Democratic Republic of Ethiopia Population Census Commission. 2008. *Summary and Statistical Report of the 2007 population and Housing census*. Addis Ababa.

Fikadu Belda. 2014. *Dissimilation in Oromo Phonology*. International journal of innovative research & development, Vol 3 Issue 13.

Fox, Anthony. 2000. *Prosodic Features and Prosodic Structure: The Phonology of Suprasegmentals*. New York: Oxford University Press.

Fudge. 1969. "Syllables." Journal of Linguistics. CUP. Hyman, Larry M. (1975). *Phonology. Theory and Analysis*. New York: Holt, Rinehart and Winston.

Garellek, M. 2013. *Production and perception of glottal stops*. Los Angeles: University of California

Gragg, G. 1976. *Oromo of Wallaga*. In Bender, M.L. et al (ed). *The Non-Semitic Languages of Ethiopia*. East Lansing: Africa Studies Center. Michigan: Michigan State University Press PP. 166-195

_____. 1982. *Oromo Dictionary*, Bender et al. (eds.), and East Lansing: The African Studies Center, Michigan State University

Goldsmith, John A. 1976. *Autosegmental Phonology*. Ph.D Thesis. MIT.

_____. 1990. *Autosegmental and Metrical phonology*. Cambridge, Blackwell.

Habte Bulti, 2003. *Analysis of Tone in Oromo*. Unpublished MA Thesis. Addis Ababa University

Halle, Morris and Jean-Roger Vergnaud 1978. *Metrical Structure in Phonology*. Ms, MIT.

Halle, Morris and G.N. Clements. 1983. *Problem Book in Phonology*. MIT Press, Cambridge.

Halle, Morris. 1995. "The Russian Declension." In Perspectives in Phonology, ed. Jennifer Cole and Charles Kisseberth. CSLI, Stanford, pp. 321-353.

Hammond, M., 1995. *Syllable parsing in English and French*. Ms. Rutgers Optimality Archive 58.

- Hargun, N. and Beavert, V. 2016. *Sahaptin: Between Stress and Tone*. Proceeding of AMP. University of Washington of Oregon
- Hayes, Bruce. 1981. *A Metrical Theory of Stress Rule*. Cambridge, Ph.D. Dissertation. Mass MIT.
- _____. 1985. Iambic and trochaic rhythm in stress rules. In M. Niepkuj et al (eds) , *Berkeley Linguistic. Society*. 13: 429-446
- _____. 1989. *Compensatory lengthening in moraic phonology*. *Linguistic Inquiry*. 20: 253-306.
- _____. 1995. *Metrical Stress Theory: Principles and Case Studies*. Chicago: University of Chicago Press.
- Hayward, Richard J. 2000. *Afroasiatic*. In *African Languages, An Introduction*, eds. Bernd Heine and Derek Nurse, 74–98. Cambridge: Cambridge University Press.
- Heine, Bernd 1981. *The Waata Dialect of Oromo*. Grammatical Sketch and Vocabulary. Published as Volume of Language Berlin.
- Hogg, R., & McCully, C. 1987. *Metrical Phonology*. Cambridge: Cambridge University Press
- Hordofa, K. 2001. “Linguistic relationship between Oromo, Sidama, Kambata, Hadiya and Gedeo.” *Wiirtuu, Journal of Oromo Language Standardization*, 6: 164-173.
- Hulade, Jose I. 2006. *Remarks on Word-Prosodic Typology*. BLS 32, No 1 2006. DOI: <http://dx.doi.org/10.3765/bls.v32i1.3452> (published by the Berkeley Linguistics Society and the Linguistic Society of America) University of Illinois at Urbana-Champaign
- Hulst, van de H. and Weijer, van de J. (eds.). 1995. *Leiden in Last* [HIL Phonology Papers I]. The Hague: Holland Academic Graphics
- Hulst, van de H and Smith, N. (no date). *The Framework of Nonlinear Framework*. INL, Leyden and University of Amsterdam
- Hume, Elizabeth. 1992. *Front vowels, coronal consonants and their interaction in nonlinear phonology*. Ph.D. dissertation, Cornell University.
- _____. 1994. *Front Vowels, Coronal Consonants, and Their Interaction in Nonlinear Phonology*. New York: Garland Pub.
- _____. 1998. "Metathesis in phonological theory: the case of leti". *Lingua* 104: 147–86.

- _____. 2001. "Metathesis: Formal and Functional Considerations." In Hume, Elisabeth, Norval Smith and Jeroen Van de Weijer. *Surface syllable structure segment sequencing papers*. Leiden, NL: HIL, HIL occasional
- Hutchinson, Larry. 1980. Axiom, theorem and rule. Evidence and argumentation in Linguistics. T.A Perry .ed. 203-218. Berlin: W. de Gruyter.
- Hyman, Larry M. 1975. *Phonology. Theory and Analysis*. New York: Holt, Rinehart and Winston.
- _____. 1985. *A Theory of Phonological weight*. Dordrecht:Foris Publications
- _____. 2006. Word - prosodic typology. *Phonology* 23 (2006) 225–257 doi:10. 1017 /S0952675706000893 Printed in the United Kingdom, University of California, Berkeley
- Jeylan W. Hussien. 2005. "The Functions of African Oral Arts: The Arsi Oromo Oral Arts in Focus." In *African Study Monographs*, 26 (1): 15-58, March
- J. Downing, Laura. 2004. "What African Languages Tell Us about Accent Typology." *ZAS Papers in Linguistics* . 37, 2004:101 - 136
- Kager, R. 1995 . "The Metrical Theory of Word Stress." *In The handbook of Phonology*. In Goldsmith, J (ed.) (pp. 367-402) Blackwell Publishing: Cambridge,
- Kahn, Daniel. 1976. *Syllable Based Generalizations in English Phonology*. Unpublished Ph.D Thesis. Indiana University.
- Kam, L. 2005. Phonemic Features Typology in Cantonese-speaking children with phonological impairment. University of Hong Kong: Unpublished thesis.
- Katamba, Francis. 1989. *An Introduction to Phonology*. New York: Addison Wesley Longman Limited.
- Kavitskaya, D. 2002. *Compensatory lengthening- phonetics, phonology, diachrony*. London and New York: Routledge. Kenya Institute of Education.
- Kebede Hordofa. 1991. "A Contribution to the Dialectology of Afaan Oromoo: Consonantal Suffix Conjugation after the Glides" In *Proceedings of the 11th ICES* (Addis Ababa 1991) Vol. I, pp. 501-513. Addis Ababa.
- _____. 1994. *Baate (Wello) Oromo Phonology*. Unpublished M.A. Thesis Addis Ababa University. Addis Ababa.
- _____. 2005. "The Varieties of Oromo." *ELRC, W Pap. AAU: AAU Printing Press* 1(1): 134-150
- Kenstowicz, Michael. 1994. *Phonology in Generative Grammar*. U S A: Blackwell Publishers

- Kiparsky, P. 1982. "Lexical Morphology and Phonology." In I.-S. Yang (ed.) *Linguistics in the morning calm*. Seoul: Hanshin. 3-91
- Ladefoged, Peter. 2003. *Phonetic Data Analysis: An Introduction to Fieldwork and Instrumental Techniques*. Oxford: Blackwell.
- Lass, R. 1984. *Phonology*. Cambridge, MA: Cambridge University Press
- _____. 1988. *Phonology: An Introduction to Basic Concepts*. Cambridge: Cambridge University Press
- Laver, J. 1994. *Principles of Phonetics*. Cambridge: CUP
- Lieberman, M. 1975. *The Intonational System of English*. NY: Garland Press.
- Liberman, M. and A. Prince. 1977. "On Stress and Linguistic Rhythm" *Linguistic Inquiry* (1977): 249-336.
- Lloret. 1988. *Gemination and Vowel Length in Oromo Morphophonology* unpublished Ph.D Thesis. Indiana University.
- _____. 1991. "Moras or Skeletal Units? A question of parametric variation." *Catalan Working Papers in Linguistics*. Universitat Autònoma de Barcelona. 149-165.
- _____. 1994. "A Comparative Study of Consonant Assimilation in Some Oromo Dialects." Ms. A paper presented at the 3rd International Symposium on Cushitic and Omotic Languages, Berlin
- _____. 1995. "The Representation of Glottals in Oromo". *Phonology* 12.2, 257-280
- _____. 1997. "Oromo Phonology". *Phonologies of Asia and Africa*. By Alan S. Kaye, vol. 1, 493-519. Winona Lake, Ind.: Eisenbrauns.
- _____. 2009. *Introductory Phonology*. Oxford: Blackwell.
- Lombardi, L. 2002. *Coronal epenthesis and markedness*. *Phonology*, 19, 219-251.
- _____. 2003. *Markedness and the typology of epenthetic vowels*. Ms. University of at College Park. ROA-578
- McCarthy, John. 1979. *Formal problems in Semitic Phonology and Morphology*. Doctoral dissertation, MIT, Cambridge, MA.
- _____. 1981. A prosodic theory of non-concatenative Morphology. *Linguistic Inquiry*, 12, 373-418.
- _____. 1988. *Feature geometry and Dependency: a review*. *Phonetica* 45: 84-108.

- _____. 1989. *Guttural phonology*. Ms, University of Massachusetts, Amherst.
- _____. 1991. *The phonology of Semitic pharyngeals*. Ms, University of Massachusetts, Amherst.
- McCarthy, John J. and Smith, Norval, 2003. "Phonological processes: Assimilation." *Linguistics Department Faculty Publication Series*. Paper 20.
- McCawley, James D. 1978. 'What is a tone language?' In *Tone: A Linguistic Survey*, ed. by Victoria Fromkin. New York: Academic Press. 113-131.
- Mcfadden, T. (2004). *The Position of Morphological Case in the Derivation: A Study on the Syntax-Morphology Interface*. PhD Dissertation: University of Pennsylvania.
- Metze, F. et.al. 2013. Models of tone for tonal and non-tonal languages. In *proceedings of IEEE Workshop on automatic speech recognition and understanding*, 261-266. Carnegie Mellon University. Pittisburgh, PA; U.S.A.
- Michael, L. 2011. The ineraction of tone and stress in the prosodic system of Iquito (Zaparoan) University of California, Berkeley
- Mindaye Abebe. 2005. *The Oromo of Bale: A historical survey to 1974*. Unpublished M.A. Thesis Addis Ababa University. Addis Ababa.
- Morén, Bruce. 2003. The Parallel Structures Model of Feature Geometry. *Working Papers of the Cornell Phonetics Laboratory* 2003, vol. 15, pp. 194-270
- Morkata. 2006. *The Arsi*. Arsi Blog.
- Mulugeta Seyoum. 2001. *The Syllable Structure and Syllabification in Amharic*. MA Thesis. Norwegian University of Science and Technology.
- Muudee, H.M. 1995. "*Hamid Muudees Oromo Dictionary*", Vol. I. Sagalee Oromoo Publishing, Atlanta.
- Nordfeldt, M. (1947). *An [Oromo] Grammar*. Lund: Le Monde Orientale.
- Odden, David. 2005. *Introducing Phonology*. Cambridge: Cambridge University Press.
- Ouden, D. and Bart. 1995. *Syllable Structure: A Comparison of Different Analyses*. Doctoral dissertation. Rijksuniversitet, Groningen, the Netherlands.PUB.
- Owens, J. 1985. *A Grammar of Harar Oromo*. Helmut Buske Verlag Hamburg.Prince, S.
- Oyebade, F.O. 1998. *A course in phonology*. Ijebu Ode: Shebiotimo Publications

- Owens, J. 1980. Observation on Tone in the Boran Dialect Of Oromo (Galla). *African Language Studies* 17, 141-96.
- _____. 1981. *Transformational Syntax*. Cambridge University Press.
- _____. 1982. Case in the Boran Dialect of Oromo. *Afrika and übressee* 65, 43-74
- _____. 1985. *A Grammar of Harar Oromo*. Helmut Buske Verlag Hamburg.Prince, S.
- Oyebade, F. 2008. *A Course in Phonology*. Second Edition. Ijebu-Ode: Shebiotimo press.
- Paradis, C. and F. Prunet. 1991. "Phonetics and Phonology". *The special Status of Coronals*. New York. Academic Press.
- Pearl, L.2009. Learning English Metrical Phonology: When Probability Distributions Are Not Enough. In Jean Crawford, Koichi Otaki, and Masahiko Takahashi, editors, *Proceedings of the 3rd Conference on Generative Approaches to Language Acquisition, North Americ (GALANA 2008)*, pages 200{211. Cascadilla Press, Somerville, MA, 2009.
- Pike, K., and E. Pike. 1947. *Immediate constituents of Mazatec syllables*. *IJAL* (13) : 78 - 91
- Prince, A. 1983. 'Relating to the grid,' *Linguistic Inquiry*. 14: 19–100
- Pulleyblank, D. 1988. Vocalic Underspecification in Yuruba. 1.1 19. 233-270
- Raymond, Lawrence. 2006. *An Autosegmental Theory of Stress*. SIL international
- Roach, Peter .1991. *English Phonetics and Phonology. A Practical Course*. Second edition. Cambrdge: CUP
- Roca and Johnson. 1999. *A Course in Phonology*. Oxford: Blackwell..
- _____. 2000 . *English Phonetics and Phonology*, Third Edition, Cambridge University Press
- Sagey, Elizabeth 1986. *The Representation of Features and Relations in Nonlinear Phonology*. PhD dissertation, MIT.
- _____. 1990. *The Representation of Features in Non-linear Phonology: the ArticulatorNode Hierarchy*. New Yor: Garland
- Sanko, B. 2011. *Compensatory lengthening in Harmonic serialism*, Bsunako@ USSC. Edu

- Sasse, Hans-Jürgen. 1981. Die Kuschitischen Sprachen. In Heine, Schadeberg and Wolff (eds), 187-215
- Selkirk, Elisabeth. 1984. *Phonology and Syntax: the relation between sound and structure*. The Massachusetts Institute Technology.
- Stroomer, Harry. 1987. *A Comparative Study of Three Southern Oromo Dialects in Kenya; Phonology, Morphology and Vocabulary*. Hamburg: Buske.
- Suzuki, Keiichiro. 1998. *A Typological Investigation of Dissimilation*. Doctoral dissertation, University of Arizona.
- Teferi, D. 2015. *The Development of Oromo Writing System*. PhD Thesis, University of Kent
- Tilahun Gamta. 1999. "Structural and Word Stress Patterns in Afaan Oromo". *The Journal of Oromo Studies*. v, No. 1&2. (173-195)
- Uffmann, Christian. 2001. 'Patterns of vowel epenthesis (not only) in Shona loanwords', in: Anthony Dubach Green, Caroline Féry & Ruben van de Vijver (eds.), *Proceedings of HILP 5*. Universität Potsdam.
- Wako Tola. 1981. *The Phonology of Mecha Oromo*. Unpublished M.A. Thesis. Addis Ababa: Addis Ababa University
- Wikipedia. *Oromia Region*. https://en.wikipedia.org/wiki/Oromia_Region. Accessed 10/7/15
- Wolff, H. Ekkehard. 2017. *Afro-Asiatic languages*. <https://www.britannica.com/topic/Afro-Asiatic-languages>. Accessed 14/8/17
- Yaachis, M. and Clamons R. 2009. Symbolic Indexing in Oromo. *Studies in African Linguistics* 38(2) 155. Metropolitan State University.
- Yip, Moira. 2002. *Tone*. Cambridge: Cambridge University Press.
- Youssef, Islam. 2013. *Place Assimilation; Contrasts, Features and Constraints*. Ph.D. Thesis. University of Tromsø
- Zaborski, A. 1990. *Handbook of the Oromo Language*. Wrocław: Maria Kowalska Stanis.

Appendix I

Arsi-Bale Afan Oromo - English Word List

b

1. baddáa	‘highland’
2. baadǵé	‘I carried’
3. bakakkáa	‘lightening’
4. báala	‘leaf’
5. baláa	‘danger’
6. balbála	‘door’
7. balʔaa	‘wide’
8. barnóota	‘education’
9. bára	‘year’
10. baréeda	‘beautiful!’
11. barbaadé	‘he/I found’
12. béela	‘hunger’
13. beekkúmsa	‘knowledge’
14. billáaǵǵa	‘butterfly’
15. biǵǵaté	‘he glimpsed’
16. bilísa	‘free’
17. bitáa	‘buyer, ruler’
18. bitáa	‘left’
19. bitaa	‘you (pl) buy!’
20. bijjée	‘soil’
21. bífa	‘color’
22. bíjja	‘country’
23. biǵáan	‘water’
24. bobáa	‘armpit’
25. boodǵǵí	‘plunder’
26. bók’oo	‘cheek’
27. bólʔoo	‘well’
28. bóna	‘dry season’
29. boonáa	‘proud’
30. boraatíi	‘pillow’
31. boojjée	‘pig’
32. bór	‘tomorrow’
33. bóǵ’uu	‘to crave’
34. bóoda	‘after’
35. bo ǵ’ t’é	‘she/you carved’
36. booskíi	‘box v.’
37. boodǵí ʔuu	‘to rob’
38. búlguu	‘cannibal’
39. búna	‘coffee’
40. buk’k’ée	‘gourd’

41. búna	‘coffee’
42. bubbée	‘wind’
43. bukkée	‘hermaphrodite’
44. buusii	‘contribution’

d

45. darbé	‘passed’
46. datŋŋáa	‘double’
47. dargagéessa	‘youngster’
48. dáaka	‘swim’ n.
49. dáakuu	‘flour’
50. daaráa	‘ash’
51. dáfk’a	‘sweat n.’
52. dagála	‘forest’
53. dalága	‘work’
54. déemaa	‘walker’
55. deemáa	‘while going’
56. diddáma	‘twenty’
57. díiguu	‘to dismantle’
58. dikée	‘cow dung’
59. díink’a	‘sleeping room’
60. dírra	‘back’
61. dírrée	‘field’
62. dibbée	‘drum’
63. díina	‘enemy’
64. dubbii	‘speech’
65. dudúba	‘mud’
66. dúula	‘campaign’
67. dúrba	‘girl’
68. dúr	‘in olden times’
69. durbii	‘nephew’
70. dukkána	‘darkness’
71. dújda	‘back’
72. duwwáa	‘empty’
73. dú?a	‘death’

dʒ

74. dʒabáa	‘strong’
75. dʒáala	‘friend’
76. dʒádʒuu	‘to admire’
77. dʒaldéessa	‘monkey’
78. dʒalʔáa	‘askew’
79. dʒaamáa	‘blind’
80. dʒáarsa	‘old man’
81. dʒardʒára	‘hurry’

82. dʒaarsúmmaa	‘mediation’
83. dʒawwée	‘python’
84. dʒedí	‘speak’
85. dʒeek’úmsa	‘turbulence’
86. dʒíbbá	‘hate’
87. dʒiidáa	‘wet’
88. dʒílba	‘knee’
89. dʒirbii	‘cotton’
90. dʒidʒirrása	‘transfer’
91. dʒíruu	‘life’

d

92. dádɖábii	‘inability’
93. dáaba	‘organization’
94. dáamsa	‘message’
95. dák’na	‘body’
96. dára	‘evil adj.’
97. dadáa	‘butter’
98. daad̥ii	‘mead’
99. déebuu	‘thirst’
99. deekkámsa	‘wiggling’
100. deed̥ ii	‘cereals’
101. déeda	‘graze’
102. d̥ík’aa	‘wash’
103. d̥ íbba	‘hundred’
104. d̥ iiɡa	‘blood’
105. d̥ íhoo	‘near’
106. d̥ írsa	‘husband’
107. d̥ íhéessuu	‘to provide’
108. d̥ iibbáa	‘push’
109. d̥iira	‘male’
110. d̥ immísuu	‘to leak’
111. d̥it’t’é	‘she/you washed’
112. d̥ ík’k’oo	‘little’
113. d̥ip’p’áa	‘narrow’
114. dóorka	‘prevention’
115. dóssíte	‘she hid’
116. d̥ úɡáa	‘drunkard’
117 d̥ uɡáa	‘truth’
118. dúma	‘end’
119. duumáa	‘nature’
120. d̥ ufé	‘he came’
121. d̥ ukée	‘dust’
122. dukúba	‘sickness’

f

123. falmíi	‘litigation’
124. falmisiísaa	‘controversial’
125. fatf’áasa	‘sow’
126. fakkéena	‘example’
127. fárda	‘horse’
128. fársoo	‘local beer’
129. faalláa	‘opposite’
130. fáana	‘trace’
131. fajjísaa	‘savior’
132. fedíi	‘will’
133. f eʔiisa	‘load’
134. filáa	‘comb’
135. fit’t’é	‘she/you finished’
136. foddáa	‘window’
137. foon	‘meat’
138. foonáa	‘kraal’
139. foojjéssuu	‘to ameliorate’
140. fudádde	‘I took’
141. fupnáan	‘nose’
142. fúppoo	‘loop’
143. fúraa	‘solution’
144. fúrdaa	‘fat’
145. furrii	‘mucus’

g

146. gadámsa	‘kudu’
147. garás	‘there’
148. gaafátjuu	‘to ask’
149. gafársa	‘buffallo’
150. gaafii	‘question’
151. galáta	‘thanks’
152. galáana	‘flood’
153. gaangée	‘mule’
154. gabáabaa	‘short’
155. gálma	‘hall’
156. gaatffána	‘shield’
157. gabáabaa	‘short’
158. gabáasa	‘report’
159. gárba	‘slave’
160. gagába	‘faint’
161. gátuu	‘to throw’
162. garáa	‘stmach’
163. gámna	‘wise’
164. gáala	‘camel’

165. gáara	‘mountain’
166. gáruu	‘but’
167. garbúu	‘barley’
168. gád	‘under’
169. gammátǵǵu	‘happiness’
170. gáanfa	‘horn’
171. gántuu	‘turncoat’
172. gíndoo	‘sieve’
173. géenna	‘we reach’
174. geegájoo	‘dowry’
175. gósa	‘tribe’
176. górsa	‘advice’
177. gógáa	‘cruel’
178. gógaa	‘skin’
179. góota	‘hero’
180. goróra	‘saliva’
181. godáana	‘migration’
182. gogáa	‘skin’
183. gógáa	‘dry’
184. gubbáa	‘over’
185. guddáa	‘big’
186. garagáluu	‘capsize’
187. gúrra	‘ear’
188. gujjáa	‘day’
189. gabáa	‘market’
190. gowwáa	‘foolish’

h

191. halkán	‘midnight’
192. hanǵ’úfa	‘spittle’
193. hantúuta	‘mouse’
194. hánga	‘until’
195. hámma	‘amount’
196. háрма	‘breast’
197. hamáa	‘cunning’
198. háamuu	‘to mow’
199. hamaamòta	‘bride servants’
200. hamméepǵa	‘malevolence’
201. hamartii	‘ring’
202. handúura	‘navel’
203. hanfála	‘sash’
204. harmée	‘mother’
205. hank’ína	‘scarcity’
206. hák’a	‘justice’
207. harrée	‘donkey’
208. haaráa	‘new’

209. hatatamáan	‘urgently’
211. hawáasa	‘society’
212. háad a	‘mother’
213. hadóoftuu	‘gall bladder’
214. hawwii	‘desire’
215. hap’p’ée	‘glue’
216. hasáasa	‘talk’
217. háttuu	‘thief’
218. háwwuu	‘to covet’
219. heerúma	‘marriage’
220. hídd’ uu	‘not full’
221. hídda	‘root’
222. hijjéessa	‘poor’
223. hijjúmmaa	‘poverty’
224. hilléensa	‘rabbit’
225. hirijáa	‘friend’
226. hirkátǵǵuu	‘to lean’
226. hirmáannaa	‘participation’
227. hooláa	‘sheep’
228. hooggánuu	‘to lead’
229. húǵ’ǵ’uu	‘cloth’
230. hundée	‘root’
231. húmna	‘power’
232. húrka	‘steam’

k

233. kabádʒa	‘respect’
234. karáa	‘way’
235. kadáttuu	‘beggar’
236. kallátǵǵ a	‘forehead’
237. kálée	‘kidney’
238. kalée	‘yesterday’.
239. kám	‘which?’
240. karáa	‘road’
241. karfáffuu	‘splash from roof’
242. kidǵíba	‘lie’ n
243. kirbiitii	‘match’
244. kinníisa	‘bee’
245. kákuu	‘oath’
246. kíbba	‘south’
247. kittaanii	‘circumcision’
248. kóottu	‘come on’
249. kórma	‘bull’
250. kop’ée	‘shoe’
251. kop’áa	‘alone’
252. kólfa	‘laugh’

253. kóo
254. kudán

‘mine’
‘ten’

k’

255. kamalée
256. k’abbána
257. k’áak’a
258. k’áalluu
259. k’aank’ée
260. k’ananíi
261. k’a’t’t’aamúra
262. k’éensa
263. k’eerénsa
264. k’it’t’ée
265. k’oráan
266. k’orítfja
267. k’ótoo
268. k’óoda
269. k’óok’a
270. kórásuu
271. k’ótuu
272. kotf áa
273. k’óok’a
274. k’óla
275. k’ulláa
276. k’uptf’ée
277. k’úba
278. k’urt’ummíi
279. k’ut’usúu
280. k’ulk’úlluu

‘ape’
‘cold’
‘talk’
‘spiritual leader’
‘spark’
‘pampering’
‘cross’
‘nail’
‘leopard’
‘assembly’
‘firewood’
‘medicine’
‘axe’
‘part’
‘without food’
‘to fumigate’
‘to plough’
‘tortoise’
‘language’
‘shell’
‘bare’
‘plant fiber’
‘finger’
‘fish’
‘younger’
‘clear’

l

281. laafáa
282. láagaa
283. labóobaa
284. laakána
285. láguu
286. lafee
287. láf a
288. lalístuu
289. lap’p’ée
290. laggéen
291. lammíi
292. laadfdé
293. leellísa

‘soft’
‘palate’
‘wing’
‘lunch’
‘menses’
‘bone’
‘ground’
‘flourishing’
‘chest’
‘rivers’
‘nationality’
‘I provide’
‘laudation’

294. léep̃t̃f̃ 'a
 295. lik'ii
 296. lit't'é
 297. lílmoo
 298. lok'óda
 299. lóon
 300. lóla
 301. luffée
 302. lúkkuu

'lion'
 'credit'
 'she/you entered'
 'needle'
 'dialect'
 'cows'
 'fight'
 'voluble'
 'chicken'

m

303. máaf
 304. maatii
 305. mádda
 306. mála
 307. marfi
 308. márga
 309. márk'a
 310. mat̃t̃f̃ii
 311. meefáa
 312. midáan
 313. mit̃f̃ 'áa
 314. míla
 315. midʒáʔaa
 316. milkii
 317. milít't'e
 318. miséensa
 319. mijíngaa
 320. moofáa
 321. mootii
 322. móрма
 323. mormúi
 324. mud̃d̃ ii
 325. múlk'uu
 326. murtii
 327. mut̃f̃ ' ut̃f̃ 'áat̃fuu

'why?'
 'family'
 'stream'
 'means'
 'discussion'
 'grass'
 'porridge'
 'intoxication'
 'device'
 'cereal'
 'son'
 'leg'
 'convenient'
 'omen'
 'she/you escaped'
 'member'
 'millet'
 'old'
 'liege'
 'neck'
 'remonstrance'
 'waist'
 'to deprive'
 'decision'
 'to slip'

n

328. náfa
 329. naafáa
 330. nagéep̃pa
 331. náannoo

'body'
 'lame'
 'peace'
 'around'

332. náma
333. niitíi

‘person’
‘wife’

p

334. paaddé
335. páata
336. páara
337. páatǵǵa

‘I ate’
‘food’
‘eyebrow’
‘crocodile’

r

338. ráada
339. ragáa
340. raawwíi
341. rákkoo
342. ráatǵǵa
343. ráammoo
345. reeʔée
346. réeffa
347. réef
348. rik’ítǵǵa
349. ríp’t’e
350. riféensa
351. róoba

‘heifer’
‘witness’
‘end’
‘difficulty’
‘frog’
‘worm’
‘goat’
‘corpse’
‘soon’
‘bridge’
‘she/you hid’
‘hair’
‘rain’

s

352. sabbáta
353. saddéet
354. sadarkáa
355. sarée
356. sán
357. saamítǵa
358. sappíi
359. sagalée
360. séensa
361. séera
362. séek’uu
363. sit’t’é
364. simbíra
365. sirée
366. sodáa
367. soddáa
368. sók’uu
369. sómba
370. sooréssa

‘sash’
‘eight’
‘level’
‘dog’
‘that’
‘robbery’
‘seed’
‘voice’
‘introduction’
‘law’
‘simper’
‘she/you moved’
‘bird’
‘bed’
‘fear’
‘male in-law’
‘to search’
‘lung’
‘rich man’

371. subíi
372. sup't'é
373. summíi

'early'
'she/you mended'
'poison'

ʃ

374. ʃán
375. ʃalláguu
376. ʃakkíi
377. ʃamarrán
378. ʃubbíssuu
379. ʃ amáa
380. ʃukkúmmaa

'five'
'to calculate'
'doubt'
'maiden'
'to dance'
'rotten'
'massage'

t

381. táp'a
382. tadʒaadʒíla
383. tasgabbéessuu
384. taaskíi
385. téenna
386. teessán
387. téessoo
388. téep'a
389. tilmáama
390. tíruu
391. tískuu
392. tíjja
393. tortóraa
394. tuk'áa
395. t uffíi
'to stay'

'play'
'service'
'moderation'
'taxi'
'ours'
'yours'
'seat'
'leather strap'
'judgment'
'liver'
'to look after'
'mine'
'decomposed'
'mole'
'disdain' 396. túruu

ʈʂ

397. ʈʂáappaa

'stamp'

ʈʂ'

398. ʈʂ'abbíi
399. ʈʂ'aalbaasíi
400. ʈʂ' arráa
401. ʈʂ' ábuu
402. ʈʂ'arr áak'a

'snow'
'auction'
'chance'
'to break'
'strive'

403. ʈʂ 'íttoo
 404. ʈʂ 'unk'úrsa
 405. ʈʂ 'abáa
 406. ʈʂ 'irráʈʂʂa
 407. ʈʂ 'íisuu
 408. ʈʂ 'ikilée
 410. ʈʂ 'óoma
 411. ʈʂ 'uumʂfáa

'itch'
 'oppress'
 'broken'
 'sand'
 'to sleep'
 'elbow'
 'fat'
 'juice'

ʈ

412. ʈabáara
 413. ʈábdʒuu
 414. ʈabbóomuu
 415. ʈalánʂuu
 416. ʈárʈa
 417. ʈaadáa
 418. ʈaannán
 419. ʈáduu
 420. ʈadaadáa
 421. ʈadurrée
 422. ʈadʒáa
 423. ʈafféellaa
 424. ʈafúura
 425. ʈafáan
 426. ʈadáadaa
 427. ʈákkoo
 428. ʈámma
 429. ʈalbée
 430. ʈalagáa
 431. ʈálbáatii
 432. ʈarríi
 433. ʈárrába
 434. ʈatʂ ʈí
 435. ʈás
 436. ʈafáboo
 437. ʈaffamáa
 438. ʈajjáana
 439. ʈéebba
 440. ʈéboo
 441. ʈéda
 442. ʈéegaa
 443. ʈeegée
 444. ʈélmuu
 445. ʈéessa

'curse'
 'dream'
 'to command'
 'to chew'
 'today'
 'culture'
 'milk'
 'sun'
 'aunt'
 'cat'
 'nasty'
 'cook'
 'spirit'
 'mouth'
 'aunt'
 'grandmother'
 'now'
 'knife'
 'foreign'
 'diarrhea'
 'grey hair'
 'tongue'
 'there'
 'here'
 'salt'
 'hello!'
 'holiday'
 'blessings'
 'spear'
 'last night'
 'watch! pl.'
 'tail'
 'to milk'
 'where?'

446. ʔegáa	‘then’
447. ʔergáa	‘message’
448. ʔeegádu	‘take care’
449. ʔegére	‘next year’
450. ʔeessúma	‘uncle’
451. ʔirkáʔʔuu	‘to lean on’
452. ʔintála	‘daughter’
453. ʔitittuu	‘yogurt’
454. ʔisáan	‘they’
455. ʔiftáan	‘after tomorrow’
456. ʔidʒa	‘eye’
457. ʔibsáa	‘light’
458. ʔindʒiráan	‘louse’
459. ʔilkáan	‘teeth’
460. ʔóbsa	‘patience’
461. ʔódaa	‘sycamore’
462. ʔól	‘up’
463. ʔookája	‘dry grass’
464. ʔóllaa	‘neighbor’
465. ʔonnée	‘heart’
466. ʔóʔʔa	‘heat’
467. ʔobboleettii	‘sister’
468. ʔojtée	‘cooking pot’
469. ʔóo	‘yes’
470. ʔugúr	‘somewhere’
471. ʔulaandúla	‘leech’
472. ʔulée	‘stick’
473. ʔurdʒii	‘star’
474. ʔutubáa	‘pillar’

W

475. wabii	‘testimony’
476. waatii	‘calf’
477. waadáa	‘promise’
478. wáak’a	‘God’
479. walʔáanuu	‘to medicate’
480. wáama	‘call’
481. waráabuu	‘to fetch’
482. waráana	‘spear’
483. waarée	‘noon’
484. wárra	‘family’
485. wadʒdʒín	‘with’
486. waláloo	‘poem’
487. wátʃa	‘tumult’
488. waréega	‘offerings’

499. waggáa
490. weelísa

‘year’
‘song’

j

491. jaadánnoo
492. jáada
493. jakkamáa
494. jaaluu
495. jéroo
496. jejjíi
497. jóo
498. jookín
499. jóom
500. joosúma

‘memo’
‘idea’
‘malefactor’
‘to try’
‘time’
‘wolf’
‘if’
‘or’
‘when?’
‘immediately’

Appendix – II Stories told by Arsi-Bale Afan Oromo Speakers

Some stories told by ABAO speakers are recorded from the native speakers and some others which were recorded for another purpose were taken as input data for the study. Each story is first written with the orthography of Afan Oromo. Then, it is transcribed phonetically emphasizing the major details that fit the purpose of the study. Finally, the story is translated to English.

Story 1

Hantuuta fi raacha

Hantuutnni fi raachi yeroo tokko walitti goshoomanii fira ta'an. Ega fira ta'anii booda namni fira Ega fira ta'anii booda namni fira ta'e mana walii arguu waan hawwu fi hawwi kana bakkaan gayuuf jecha hantuunni yeroo duraa raacha affeeree akka mana isaa dhaqee laalu oduma manatti galanii waamen galanitti hantuunni iyana ofii qabu dheedhii adda addaa kan akka garbuu, baaqelaa, atara, fi qamadii kan kana fakkaatu kan manatti kuufate na hanyaatuf gadguuree duraan dursee firii garbuu raachaa kenne. Yoo raachaf firii garbuu kana kennu afaan kahatee yoo jedhu qaraanan garbuu sun kan firii garbuu jiru afaan isaa keessa waraane buqifatee gad fudhateet waan nama hinwaraanne hinqabdani jedheen safataa. Hantuunni ammo deebie'e ammo atara kenne atarris afaan rachatitti waan jabaatuf raachi afaan keessatti gororee afaan keessa oofee alanshamuufii dide maal hantuuta mana keessan keessa waan jabaatu malee waan laafaa hinarganii? jedheen Hantuunnis deebiseefii nu bee jajjabaa akkanaa nyaaneti jabaannee fiigneti diinas jala baana. Koottu kaa harki taraa walidiqa anille si affeera jedhaati rachi gara mana isaa kara haroo isaa jalaa tirate. Hantunnis walumaan deemee yoo raachi mana isaa bishaan keessa olatti seenun raachis wajjiin akka seenu dura mana olatti seene bishaan keessa olaatti seene koottu hantuuta bishaan keessa olatti seene jedheen yoo inni olatti seenu ta'u bishaan keessatti gadejjatee jennaan bishaan gad liqimse. Hantuunni bishaan keessatti ol utaalee gad deebi'ee ol utaalee, gad deebi'ee maal hantuuta ani ganaa si obaasuu heda ati odumaan hindhugin machoofta jedhee achi sasaaqee bishaan kaaheti qurxumii, raammoo xixiqoo bishaan keessaa kana waan lallaftuu kanniin guuree itti kenne. Inni waan jajjabaa san waan beekuuf afaan keessa bu'ufii dide. Yoo afaan keessatti hundaa afaan kessatti buruqee inni kan nyaatu

waan laaftuu maal hantuuta hinnyaatu jennaan maal ani waa alanshuu beeka waan jabaa hinqabdani . jennaan maal nu waan laafaa nyaachati laafaa taanee hafne jedhe jedhan.

1.1 Transcription

hantúuta fii ráatŷŷa

hantúunni fii ráatŷŷi yeróo tókko walítti goŷóomanii fira taʔán. ʔéga fira taʔánii bóoda námni fira táʔemána walíi ʔárguu wáan hawwúuf háwwii kána bakkáan gájuuf dʒéŷŷa hantúunni jéroo duráa ráatŷŷa ʔfeereé ʔákka mána ʔisáa dǎkʼee láalu ʔóduma manátti galánii wáamen hantúunni ʔijána ʔófii kʼábu dǎedii ʔádda ʔaddáa kán ʔákka gárbuu báakʼelaa ʔataráafi kʼamádii kán kána fakkáatu kán manátti kuufátte nahaapnáaatuf gágguuree duráan dursée firii gárbuu raatŷŷáa kénne. jóo ráatŷŷaf firii gárbuu kána kénnu ʔafáan káhatee jóo dʒédu kʼaráanan gárbuu sún kán firii gárbuu dʒíru ʔafáan ʔisáa kéessa waráanee bukʼifátee gafudatéet wáan náma hiwwaráanne hinqʼábdanii dʒedéen salfatáa. hantúunni ʔámoo deebiʔée ʔámoo ʔatára kennée ʔatarrís ʔafáan raatŷŷatitti wáan dʒabáatuf ráatŷ ŷŷi ʔafáan keessátti gororée ʔafáan kéessa ʔoofée ʔalanjámuufii díde máal hantúuta mána keessán wáan dʒabáatu malée wáan láafaa hínʔargánii? dʒedéen. hantúunnis deebiséefii nubée dʒadʒdʒábaa ʔakkanáa jáanet dʒabáannee fiignet díinas dʒála báana. Kóotu káa háarki taráa waldʼíkʼa ʔanillée sí ʔafféera dʒedat ráatŷŷi gára mána ʔisáa kára hároo ʔisáa dʒaláa tiráte. hantúunnis walumáan deemée jóo ráatŷ ŷŷi mána ʔisáa biŷáan kéessa ʔoláseenu ráatŷŷis wadʒdʒín ʔákka séenu dúra mána ʔoláseenee kóottu hantúuta biŷáan kéessa ʔoláseenee dʒedéen jóo ʔinni ʔoláseenu táʔu biŷáan k keessátti gád ʔedʒdʒetée dʒennáan biŷáan gallíkikʼimse. hantúunni biŷáan keessátti ʔól ʔutáalee gaddéebiʔee ʔól ʔutáalee gaddéebiʔee máal hantúuta ʔáni ganáa sí ʔobáasuu hédá ʔodomáan hindúgin matŷŷóoftee? dʒédée ʔáŷŷi sassáakʼee biŷáan káahet kʼurtʼumíi, ráammoo tʼitʼíkʼkʼoo biŷáan keessáa kána wáan lalláaftuu kaníin guuree ʔitti kénne. ʔinni wáan dʒadʒábaa sán wáan béekuf ʔafáan kéessa buʔúufii díde. jóo ʔafáan kéessatti hundáa ʔafáan kéessatti burukʼée ʔinni kán jáatu wáan láaftuu máal hantúuta hinqáatu? dʒennáan máal ʔáni wáa ʔalánŷuu béeka wáan dʒábaa hinkʼábdanii? dʒennáan máal nu wáan láafaa naatŷŷati láafaa taanee hafne dʒéde dʒedʼán.

1.2 Translation

The Mouse and the Frog

Once upon a time a mouse met a frog and they decided to be friends; they made friends. So they went for a walk and they spent the day roaming and they made friends. So the mouse decided to take the frog to his house. So he took the frog to his house and because he was his guest he offered him all that he had stored. He offered him grain, barley, wheat and all sorts of other cereals. First the frog took in a piece of barely but as he put it in his mouth the chaff pricked his throat. "What lousy, spiky food! Don't you have anything else?" the frog asked. So the mouse gave him a pea. He rolled it about in his mouth but it just wouldn't dissolve and he had to spit it out. And he said, "How hard it is! It's not very good. Don't you have anything soft?" And the mouse said, "No, we've become strong and agile because we eat strong food." So on another day they decided to go to the frog's house. When they went to the frog, the frog was living in a pond, so he jumped into the pond and called out to the mouse. So the mouse also jumped into the pond, but because he couldn't swim, he began gasping and struggling in the water. And the frog said, "How strange! You've become drunk without even drinking anything. And I was planning to give you so much food and so much to drink." And he pushed the frog out on to the side of the pond. Then he began bringing him all the food that he had stored, and he brought him worms and insects, and the mouse took everything into his mouth but it was all very watery, and lacked any spices. "What's all this trash?" said the mouse. "How do you manage to eat this?" "Oh, we've become soft and slimy because that's exactly what we eat," said the frog. Two possible interpretations are, "You are what you eat", or, "You should not mix with people who aren't like you."

Story 2

Yeyyi'ifi hilleensa

Gaaf tokko osuma waa guurrattu yeyyi'in harka issii dhagaa jala galchite dhagaan guddaan irratti kufee osuma akkasitti isiin waan jalaa baasa abdii jirtuuf olii gadi raafatu hilleettin itti dhufte. Yeyyii maal taate, maal ta'uu keetii? Jennaan dhakaachatu narratti kufee jalaa bayuu dadhabe jedheen. Maal si wayya ree? Jennaan, narraa ol qabi jetteen yeyyiin. Danda'ee humna hinqabu akamitti sirraa ol qaba jennaan haguma dandeette mee na qarqaari jetteen. Yoo si qarqaaree asii baate maal naa taata jedhaan. Sinyaachisaa, waa si kennaa si laadhaa jedheen yayyiin. Jennaan kanumaanu hilleettin haga humna ofiitin ol badde gadi badde xaarte irraa dhagaa ol qabuu dandeetee. Yeyyiin akkuma harka achi jalaa fudhateen hilleetii nyaataf qabate. Qabannaan, maalif na nyaataa? Nama galata nmaa ta'e gadoo deebi'aniifii? Na hinyaatinii jedheen. Hi'ii haga ammaatuu qooqan oole mitii? Si nyadhaa jedheen. Hayee ega ta'ee murtii malee na nyaatuu mana murtii nageessiiti murtiin nanyaataa jedheen. Eentu nu murteessa jennaan namatu nu murteessa jedhanii nama bira deemani nama beekkaa bira tokko oguu deemanuu yayyiin akkanatti kunoo dhagaan irratti ka jige irraa kaasee jennaan nanyaachuufii yaa namana murtii nu kennii jedhee hillensi gaafate. Gaffannan yeyyiin ega kanaa sinyaachu qaba ani ninbeelayee aga ar'aatu aga amma kana ammaatuu guyyaa guutuu qooqa oolee amma sinyaadhaa jedheen. Jennaan nama galata namaa oole hinnyaatanii obboo yayyii dhiisuu qabdaa jedhee namichi murtii kenneef. Murtii kenninaan aha hilleensa dhisi sihuu na nyaadha jedheetini yeyyiin namichatillee ka'e. Kaanan namichi sodaatee amma mala dha'ee anu nan dogooggoree akkummaan si yeeyyii hagana gahu kana hilleettin xiqqishuun tuni dhagaan guda jettanii sirraa qabee anuu na aja'ibsiise waan ajabbatii odoon argiin dogoggoraan murtii kennee achhitti deebineetin akka duraaniin dhagaa sirra kaase argineetin murtii kennina malee beena mee jedhee fudhate achittiin deeb'ee . deebinaan mee dhaggan kami kana kunooti mee atilleen akka duraan ciiste jala ciisi atillee irratti deebisi jedheenin namichi murtii kennee yeyyiin jal ciisee hellensi itti gadi deebisee akkanaami haalli ati itti dhufte eyee jedhe atillee karaa kee ka duraa deemi anillee bakka kiyya ka duratitti deebi'aa jedheen jennaan ani hoo jedhe yeyyiin atilleen akkuma qara jirtuun ciisi jedhee biraa lixe. Murtiin isaanii kana.

2.1 Transcription

jejjii?ii fii hilléensa

gaaf tokko ?ósuma waa guurrattu jejjii?in hárka ?isii dāgaa dʒála galʃítee dagáan guddáan ?irratti kúfee ?ósuma ?akkásiiti ?isiin wáan dʒála báasa ?ábdii dʒirtúuf ?ólii gádi raafátu hilléetin ?itti dūfte. Jéjji máal táate, máal tá?uu kéeti? dʒennáan dʒakaʃʃátu narratti kufée dʒálaa bájuu dadābe dʒedéen. máal sí wájja rée? dʒennáan, nárraa ?ól k'ábi dʒettéen jejjii?in. dandá?ee húmna hínk'abu ?akkámitti sírraa ?ól k'ába dʒennáan hagúma dandéete méé ná?ark'áari dʒettéen. jóo sí k'ark'áaree ?ásii báate máal náa táata dʒennáan, sináaʃʃísa waa síi kénna, síi láada dʒedéen jejjiiin. dʒennáan kanumáanu hilléettin hága húmna ?ofiitin ?ól báde gádi báde t'áartee ?irraa dāgaa ?ól kábuu dandéete. Jejjiiin ?akkúma hárka ?áʃʃí dʒalaa fudattéen hilléettii náataf k'abáte. k'abannáan, máalif ná náatta? náma galáta namáa tá?e gádoo deebi?ánifii? ná hínpaatin dʒedéen. hi?ii hága ?ammáatuu k'ook'án ?óolee mitii? sí náadfa dʒedéen. hájje ?éga tá?ee múrtii málee ná náattu mána múrtii nagéessiiti murtiin ná náatta dʒedéen. ?éentu nú murtéessa dʒennáan namátu nú murtéessa dʒedānii náma bíra deemánii náma béekaa tokko bíra ?óguu deemánuu jejjiiin ?akkámitti kúnoo dagáan ?irratti ká dʒíge ?irraa káasee dʒennáan napáaʃʃuf jáa namána múrtii núu kénni dʒédee hilléensi gaafáte. gaafannáan jejjiiin ?éga kanáa sináaʃʃu k'ába ?áni ninbéelaje ?ága ?ar?áatuu ?ága ?ammaa kána ?ammáatuu gújjaa gúutuu k'óok'a ?óole ?ammaa sináada dʒedéen. dʒennáan náma galáta namáa ?óole hinpáatanii ?óbboo jéjjii dʒisuu k'ábda dʒédee namíʃʃí múrtii kennéef. múrtii kennináan ?áha hilléensa dʒisii síhuu nán náadfa dʒedéetini jejjiiin namíʃʃátilllee ká?e. kaanán namíʃʃí sodaatee ?amma mála dā?ee ?ánuu nán dogoogóree ?akkúma sí jejjii hagána gáhu kána hilléettin t'ikkífuun túni dagáan guddaa dʒettánii sírraa k'abee ?ánuu ná ?adʒa?ibsísee wáan ?adʒabáatii ?odóon ?árgín dogogoráan múrtii kénnee ?aʃʃítti deebinéetin ?ákka duráanin dāgaa sírraa káasee ?arginéetin múrtii kennína málee béenaa méé dʒédee fudátee ?aʃʃíttiin déeb?e. deebináan méé dagáan kámi kána kunóoti méé ?atiléen ?ákka duráan ʃʃíiste dʒála ʃʃíisi ?atílee ?irratti deebísi dʒedéenin namíʃʃí múrtii kénnee jejjiiin dʒála ʃʃíisee hilléensi ?itti gádi deebíse ?akkanáami háalli ?áti ?itti dūfte ?éejee dʒéde ?atílee karáa kée ká dúraa déemi ?aníllee bákka kíjja ká duraatítti deebi? dʒedéen dʒennáan ?áni hoo dʒéde jejjiiin ?atiléen ?akkúma k'ára dʒirtuun ʃʃíisi dʒédee bíraa lít'e. múrtiin ?ísaa kána.

2.2 Translation

The Jackal and the Rabbit

Once upon a time, a jackal was looking for food. While he was creeping under rocks, a big boulder rolled on to his paw, and it stuck him to the ground. He pulled and pulled and gnawed and gnawed but he couldn't free his paw. Then a few minutes later a rabbit came along. The jackal said, "Rabbit, please help me. Remove this boulder and free me." "I'm weak," said the rabbit. "And it will take a lot of my time to move this boulder. What are you willing to give me if I do manage to free you?" And the jackal said, "Don't worry; I'll feed you until you're bursting, until you can't eat any more." So the rabbit pushed and pushed and he managed to move the boulder. But the moment the jackal was free, he sprang up and caught the rabbit and said, "I'm going to eat you." And the rabbit said, "No, that's impossible. How can you eat someone who has saved you from a trap?" And the jackal said, "Well, I've gone without food all day. I've got to have something to eat." And the rabbit said, "No, it's impossible. Let's go to the elders, and let them decide what the correct thing is." And so they went and they found one of the old men and they told him what had happened. And the old man listened to them and he said, "Well, tell me what happened." And they told him everything that had happened. Then the old man said, "No, the jackal's wrong. The rabbit should go free." The jackal became very angry and he said, "Not only will I eat the rabbit, but I'll also eat you." The old man pretended to be terrified and he said, "All right, I think my judgment is wrong. Let me revise my judgment. How can I have given my judgment without actually seeing all the evidence?" So he said, "Please take me back to the spot where you first met so you can re-enact the scene." So they went back to the spot and the old man said, "So, over there, where was the jackal exactly?" As the jackal lay down and said, "Here I was." And the old man said to the rabbit, "And you pushed this boulder? I don't believe it. Show me how you pushed it." And the rabbit slowly pushed the boulder on to the jackal's paw. And the old man said, "So this is how you found the jackal?" And the rabbit said, "Yes." So the old man turned to the jackal and he said, "Are you sure? Is this how he found you?" And the jackal said, "Yes." And the old man said, "Good. Let's call it quits. Rabbit, you go along from where you were coming, and I'll also go along from where I was, and we'll leave the jackal where he was."

Story 3

Qamalee fi Leencha

Gaafa tokko qamaleefi leenchi waliin hasa'a eegalan. Yeroo kana qamaleen muka irra teessi, leenchi immoo lafa irra taa'ee qamalee tana ol laala ture. Kanaan booda immoo qamaleen firii muka irra teettee nyaataa waan hinjirtuuf firii kana naa darbi jedhee gaafate leenchichi. Qamaleenis akka leenchi muka koru hindandeenye waan beektuf itti boonuu barbaadee firii kennufii didde jechuudha. Kana booda immoo qamaleen gowwaa taatee firiin takka harkaa yoo buutu utaaltee firii takkattii san fudhachuuf muka irraa buute, leenchi yoo kana itti gammadee nyaachudhaaf harkaan qabate. Kanaan boodas qamaleen waan duraan qalbii qabduuf mala malate akkana jetteen leenchan. Yaa obboo leencho firootan kiyya kan firii kana nyaachuf dhufan baay'ee waan jiruuf gad nalakkisiti isaan hedduu nyaata ana takkittii hinnyaatini jettee kadhatte. Kana booda yoo isiin itti warwaattu abishaalummaa qamallee tana leenchi waan hinbeeknef qamalee gad lakkise. Qamaleennis utaaltee muka irra korte.

3.1 Transcription

k'amaléefi léenjfa

gáafa tókko k'amalée fi léenjfi waliin hasá?a ?eegálan. jéeroo kána k'amaléen múka ?irra téessi léenjfi ?ímoo láfa ?irra táa?ee k'amalée tána ?ól láalaa túre. Kanáan bóoda ?ímoo k'amaléen firii múka ?irra téette náataa wáan hínđirtuuf firii kána náa dárbi dʒédée gaafáte leenjfi'íjfi. k'amaléenis ?ákka lléenjfi 'i múka kóru hínandeenye wáan béektuf ?itti bóonu barbáade firii kennúufii dídde dʒejʃjúudá. kána bóoda ?immoo k'amaléen gówwaa táatee firiin tákka hárkaa jóo búutu ?utáaltee firii takkatii sán fudǎjʃjuuf múka ?iraa búute. leenjfi 'i jóo kána ?itti gammádee náachudaaf harkáan k'abáte. Kanáan bóodas k'amaléen wáan duráan kálbii kábduuf mála maláte akkana dʒettéen leenjfi 'án. yáa ?óbboo leenjfi 'o firootán kájja kán firii kána náajʃjuuf dúfan báaj?ee wáan dʒirúuf gád nalákisi ?isáan hédduu náatta ?ána takkittii hínnyaatini dʒéttee kadátte. Kána bóoda jóo ?isiin ?itti warwáattu ?abijáalummaa k'amalée tána leenjfi 'i wáan hínbeeknef k'amalée gád lákkise. k'amaléenis ?utáaltee múka ?irra kóorte.

3.2 Translation

The Ape and the Lion

Once upon a time, an ape and a lion started to talk to each other. The ape was on the tree while the lion was sitting under the tree looking the ape up. For the ape was not eating the fruits from the tree, the lion asked her to throw some to him. Knowing the lion could not climb the tree, the ape wanted to boast and ignored to answer his question. After a while the ape was mistaken and jumped down the tree to pick up a single fruit fell from the tree. The lion was happy of the event and caught her to eat. As the ape was intelligent, she created a story and begged, “Mr. Lion there are many of my relatives that come to eat the fruit of this tree. So, release me and you can eat many of them than eating only me.” The ape pleaded with the lion to go repeatedly and he set her free because he does not know her wisdom. Then, the ape jumped to the tree to her first position.

Story 4

Bulguu fi obboleettiwwan lamaan

Bara duraa haadha warraa fii abbaa warraa turan. Maatii horanii jireenya isaanii odoo gaggeessanuu haati maatii sanii dhibamtee duute. Abbaan maatii immoo haadha manaa biraa fuudhe. Isiin fuudhe tuni maatii tana garmalee jibbitee, yoo ijoolle tana gate malee waliin jiraachuu hindandeenyu jettee abbaa warraa isiitin waloolaa turte. Innis yaada isiin dubbate ijoollee san fuudhee gootaraa keessa naqeen ijoollee san gatee jira jedhe. Isiitiin bay'ee gammadee kanaaf nan jibbin jedhee isheeti hime. Ani waadaa sigalee akka ijoollee gate atis waada naf galtee waan ani siin jedhu hojjechuu qabda jedhee yoo nyaattus yoo dhugdus nyaata kan kee gootaraatti gatu qabda bishaanis yoo dugde gootaraa keessatti gatu qabda jedheeni. Kana osoo ittiin isii hinbarsiisin maatii gootaraa kessatti dhoksee isii gowwoomsuu barbaade. Isiinis waan nyaatus waan dhugdus gootaraa kana kessatti gattee achiin immoo gaafa kaanii osuma gattee ollaa isiitif abbaan warraa kiyya waan nyaattus waan dhugdus gootaraa kessatti gati naan jedhe jettee himteen booda, ollaanis kan achitti gattu barbaadu kuni maali? Waanii hinbeekne akka aadaa durii keennatti wanta nyaatanis wanta dhuganis achi keessatti hingatan. Hinbeekne waan akkanaa godhi naan jedhu. Maali kan akkanaa jettee ollaan yoo deemanii laalan ijoolleen gootaraa kessa jirti. Xaroo kaasanii erga hubataniin booda homtuu hinjiru nyatafi bishaan itti gati kan jedhu kanaa? Jette. Isiinis akka malee aartee abbaa warra isiitin wanta ittiin bulmaata keennatu jira jettee ijoollee gootaraa naqxee midhaaniifii bishaan akka gatuuf goota? Jettee dubbate. Innis waan isii jaalatuuf ijoollee gatuuf karaa irra deemanii, deemanii, deemanii karaa irra kaayee gad ta'ee dhufaatin deema na eegaa jedhee deemanii, deemanii deemai dadhban qilxuu tokko jala gahan ta'an. Abba wuu wuu! Jedhanii yoo yaaman, inni udaan udaanee qubee udaan kessa kaayee waan tureef qubeen sun wuu wuu! Jetti. Ammas yoo waaman wuu wuu! Jetti. yoo siqanii, siqanii qubee argatan qabatani deeman. Osoo deema jiranii laga guute bira gahan. Isaanis lagannana yoo dharaan deemne fudhuu nuun lixi, yookan citii karaa nuu ta'i jedhaniin. Lagni kunis cite karaa ta'eef. Cee'anii ammas deemanii, deemani bookkaa dhufee garmalee yandoo ta'etti dhufan. Bokkaannana yoo nu dharaan deemne asumatti bakakkaa nutti buusii nu fixi yookan immoo caamitii karaa nu dabarsi jedhaniini, caameti karaa dabarse. Ammas deemanii, deemanii muka garmalee hurruma ta'e tokko jalatti dhufan. Mukannana yoo nu dharaan deemne asumatti jigii nu fixi yookan immoo jigii mana nu ta'i

jedheenin. Mukichi kun jige'e mana ta'eef. Maatin kunniin erga mana argataniin booda jireena isaanii gageessuu yaadanii ammas mana isaanitti akkuma olaatti dhufanii, dhufanii abba qabeena qabu tokko bira dhufan. Abbaa qabeena qabu isa kanaan bulgicha jedhaniin. Bulgichi kuni haadha warraa hinqabu, qabeenna garmlee qaba. Nullee mana hinqabnu rabbumatuu kunoo amma kanailleen jigseetiniin nuun baase mana kana isiinillee gargaarree ofiillee jiraanna, hojjennee jiraachun barbaadna jedhaniin. Bulgichi gaangefii saree hinqaba. Bulgichi qabeenna garmalee waan qabuuf sareen kun nama ol hinseensisu. Isa malee nama qabeenna kunnuunsuu waan hinqabneef amma nama biraa bakka buusuu barbaade. Ijoollee dubara tana keessaa qabeennaf takka bakka buusu barbaade. Ijoollee tana keessaa takka qaroo takka gowaa. Qarittiin gowwittiin yoo seentu gaangee okaa jala buuftee saree daabbo jala buuftee seenuu qabda jettee gorsitee waan biraa hojjechuuf deemte. Gowwitiin saree okaa jala buuftee gaangee daabboo jala buuftee yoo jettu sareen hindute, gaangen hinhimmimse. Bulgichis dhufee qabeenna kiyya naatuu dhuufteemii jedhee karaa ani hin deemne akkana goote jedhe. Namichi qabee gowwittii hidhee madabaraa keessa kaayee ibida garmalee jalatti boobeesse ka'ee jalaa baye. Yoo qarittiin gaangee okaa jala buuftee saree daabboo jala buuftee ol seentu gowwitti dhabdee eecha jirta jettee yoo waamtu, asittii na hidhanii gubba kana jira jetteeni. Obboleetinis hiiktee cabbii fuutee cabbii garmalee kuntaala keessa guuttee ibidda jalatti bobeessitee isii achii fuutee gaangee okaa jala buuftee saree dabboo jala buufte baateniin. Bulgichi galgala waan hunda hojjetee, nyaata isaa nyaachuf yoo ta'u ibiddi kun garmalee o'eeti jira. Ibida kana itti qabsiisetti yoo ka'eetiniin waa nyaadhe jedhee ollaaleetiniin jedhu qaritiin moora wayii xiqqoo itti dibdeeti jiraatii moorri sun xiqqoo xab irratti jette. Gad liqimseet xabi san amma illee itti deebi'e, yoo inni micayittii gowwaa itti fakkaatee capoo tiyya itti naa copi jedhee ol laalaa copii eeggatu cabbiin akkuma jirutti gubbaatti gad bu'ee bulgicha ajjeesse. Ijoollen sun erga sanii abbaa qabeennaa ta'anii hafan jedhama.

4.1 Transcription

bulgúufi ?obboleetiwwán lamáan

bára duráa háada warraafi ?abbáa warráa turán. maatii horanii dʒiréeɲna ?isaanii ?odoo gaggeessánuu háati maatii saní dhibámtee dúute. ?abbáan maatii ?ímmoo háada manáa biráa fúudhe. ?isiín fúude túni maatii tána garmálee dʒibbíte, yóo ?ijóolle tána gáte malée waliin dʒiráafʃuu híndandeenpu dʒettée ?abbáa warráa ?isiitin wáloolaa túrte. ?innís jáada ?isiín

dubbátte ʔidʒoollée sán fúudée gootáaraa kéessa naqéetin ʔidʒoollée sán gatée dʒíra dʒédé. ʔisiitiin baajʔée gammadée kanáaf nan híndʒibbin dʒedhée ʔishéeti híme. ʔaní waadáa siigalée ʔákka ʔidʒoollée gáte ʔatis waadáa náf galtée wáan ʔaní síin dʒédu hodʒdʒéʔʔuu k'ábda dʒedhée jóo ʔaatús jóo dʒudús ʔáata kán kée gootaráatti gátuu k'ábda biʔaanís jóo dʒudde gootáaraa keessátti gátuu k'ábda dʒedheen. kána ʔósoo ʔittiin ʔisii hínbarsiisin maatii gootáaraa kessátti dʒoksée ʔisii gowwóomsuu barbáade. ʔisiinis wáan ʔaattús wáan dʒuddús gootáaraa kána kessátti gattée ʔachíin ʔimmoo gáafa kaanii ʔosúma gattée ʔoláa ʔisiitif ʔabbáan warráa kíyya wáan ʔaattús wáan dʒuddús gootáaraa kessátti gáti náan dʒédé dʒettée himtéen bóoda, ʔollaanis kán ʔaʔʔitti gátuu barbáadu kúni máali waanii hínbekne ʔákka ʔaadáa durii keeʔnatti wánta ʔaatanís wánta dʒuganís ʔaʔʔi keessátti híngatan.hínbekne wáan ʔakkánaa gódí náan dʒédhu. máal kán ʔakkánaa dʒettée ʔoláan jóo deemaníi laalán ʔidʒoollén gootáaraa kéessa dʒirti. t'áaroo kaasaníi ʔérga hubataníin bóoda hómtuu híndʒiru ʔaatafi biʔaan ʔitti gáti kán dʒédu kanáa? dʒétte. ʔsiinis ʔákka malée ʔaartée ʔabbáa warráa ʔisiitin wánta ʔittiin bulmáata keennátu dʒíra dʒettée ʔidʒoollée gootáaraa nak't'ée midhaaniifii biʔaan ʔákka gatúuf gootáa? dʒettée dubbáte. ʔinnís wáan ʔisii dʒaalatúuf ʔidʒoolée gatúuf karáa ʔirra deemaníi, deemaníi, deemaníi karáa ʔirra kaaiée gád taʔée dʒufaatín deemáa na ʔéegaa dʒedde deemaníi, deemaníi, deemaníi dadábán k'ílt'uu tókko dʒála gahán taʔán. ʔabbáa wúu! dʒedhaníi jóo jaamán, ʔinni ʔudáan ʔudaanee k'ubée ʔudáan kéessa kaajée wáan turéef k'ubéen sún wúu! dʒétti. ʔammás jóo waamán wúu! dʒétti. jóo sik'aníi sik'aníi k'ubée ʔargatán k'abataníi deemán. ʔosóo déemaa dʒiraníi lága gúute bíra gahán. ʔisaanis lagannána jóo dʒaráan déemne fúdduu nún lít'i, jookán ʔʔitii karáa núu táʔi dʒedaniin. lágni kunís ʔʔitée karáa taʔéef. ʔʔeeʔanii ʔammás deemaníi, deemaníi bookkáa dʒufée garmalée jándoo taʔétti dʒufán. bokkaannána jóo nu dʒaráan déemne ʔasumátti bakakkáa nútti buusii nu fit'i jookán ʔimmoo ʔʔaamitii karáa nu dabáarsi dʒedaniini, ʔʔaamée karáa dabárse. ʔammás deemaníi, deemaníi múka garmalée hurrúma táʔe tókkoo dʒalátti dʒufán. mukannána jóo nu dhraán déemne ʔasumátti dʒígii nu fit'i jookán ʔimmoo dʒígii mána nu táʔi dʒedanín. mukíʔʔi kún dʒigée mána taʔéef maatin kunníin ʔérga mána ʔargataniin bóoda dʒiréena ʔisaanii gegeessúu jaadaníi ʔammás mána ʔisaanitti ʔakkúma ʔoláatti dʒufanii dʒufanii ʔabbáa k'abéena k'ábu tókko bíra dʒufán. ʔísa ʔabbáa k'abéena k'ábu kanáan bulgíʔʔa dʒedaniin. bulgíʔʔi kúni háada warráa hink'ábu, k'abéena garmlée k'ába. nullée mána hink'ábnu rabbumátuu kúnoo ʔamma kanalléen dʒigseetiniin nún baasée mána kána ʔisiinillée gargaarrée ʔofiillée dʒiráanna, hodʒdʒennée dʒiraatʔʔiún barbáadna dʒedaniin. bulgíʔʔi gaangefii sáree hínk'aba. bulgíʔʔi

k'abéena garmalée wáan k'abúuf, saréen kún nama ?ól hinseensísu. ?ísa malée náma k'abéena kunnúunsuu wáan hink'abnéef ?ámma náma biráa bákka búusuu barbáade. ?idzoollee dubára tána kéessaa k'abeennáf tákka bákka búusu barbáade. ?idzoollee tána kéessaa tákka k'ároo tákka gowáa. k'arittiin gowwittiin jóo séentu gaangée ?okáa dzála buuftée sáree dáabboo dzála buuftée séenuu k'ábda dzettée gorsitée wáan biráa hodzdechúuf déemte. gowwittiin sáree ?okáa dzála buuftée gaangée dáabboo dzála buuftée jóo dzétu saréen híndute, gaangén hínhimmimse. bulgíŋŋis dufée k'abéena kíjja náatuu dhuufteemíi? dzedhee karáa ?áni hindéemne ?akkána góote dzéde. mamíŋŋi k'abée gowwittii hidée madabaráa kéessa kaayée ?ibída garmalée dzalátti boobeessée ka?ée dzaláa báje. jóo k'arittiin gaangée ?okáa dzála buuftée sáree dáabboo dzála buuftée ?ól séentu gowwittí dābde ?éessa dzírta dzettée jóo wáamtu, ?asítti na hidānii gubbāa kána dzíra dzettéeni. ?bbooleetinís híiktee ŋ'abbíi fuutée ŋ'abbíi garmalée kuntáala kéessa guuttée ?ibídda dzalátti bobeessitée ?isii ?afŋŋi fuutée gaangée ?okáa dzála buuftée sáree dáabboo dzála buuftée baateniin. bulgíŋŋi galgála wáan húnda hodzdetée, náata ?ísaa naatŋŋuf jóo tá?u ?ibíddi kún garmalée ?o??éti dzíra. ?ibída kána ?itti k'absiiséti jóo ka?eetiniin wáa naaddé dzedée ?ollaaleetiniin dzédu k'aritiin móora wajji t'ík'k'oo ?itti dibdéeti dziraatii moorri sún t'ík'k'oo t'áb ?irratti dzétte. gád lik'imséet t'abii sán ?ámma ?illée ?itti deebí?e. jóo ?inni miŋ'ajittii gowwáa ?itti fakkaatée ŋ'aap'óo tíjja ?itti náa ŋ'op'i dzedée ?ól laaláa ŋ'op'i ?eeggátu ŋ'abbíin ?akkúma dzírutti gubbáatti gád bu?ée bulgíŋŋa ?adzdzéesse. ?idzoolleen sún ?érga sanii ?abbāa k'abeennāa ta?anii hafān dzedāma.

4.2 Translation

The Cannibal and the two sisters

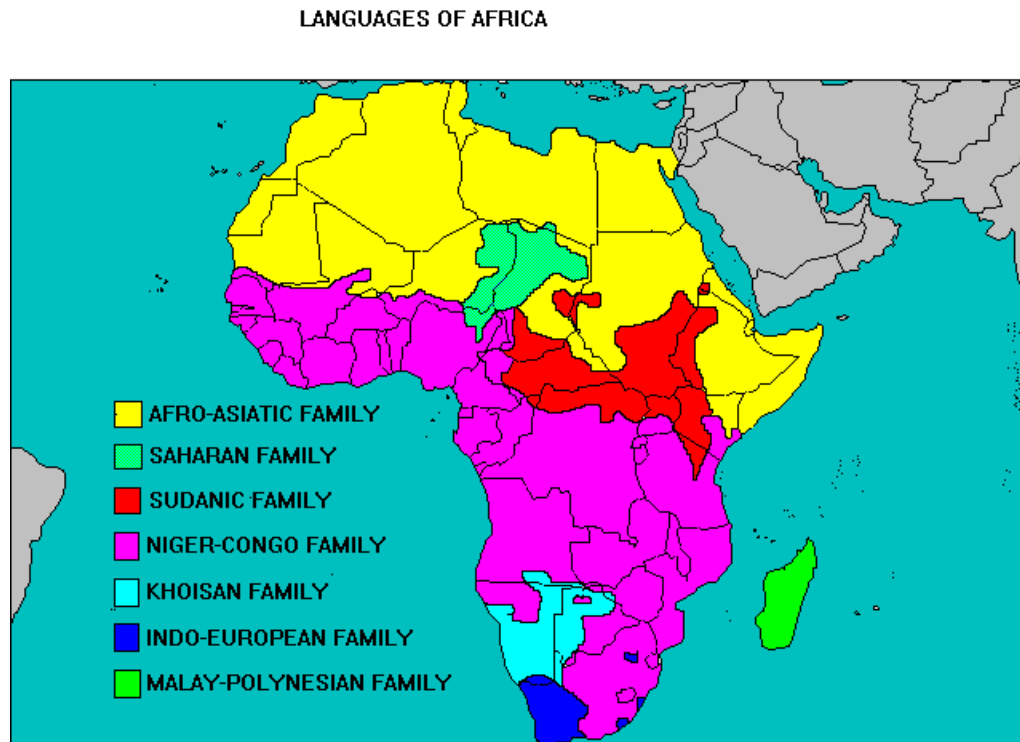
In olden times there were a husband and a wife. They had children. While they were rearing their children, the mother was sick to death and eventually, she died. Their father married another woman. The wife he married hated these children much and warned her husband to expel the children from their home so that they could live together. For he loves his wife, he put the children in the barn and told her that he drove out the children from home. He happily declared that she shouldn't hate him for this. Then, without telling her the secret, he asked her to throw what she eats and drinks after each meal as he promised her to derive out the children from home. The wife continued to throw food and drink after each meal for long period. One day,

after she threw the meal in the barn, she told her neighbor what she was doing while turning to home. The neighbor asked the wife the reason of throwing each meal into the barn. The wife informed the neighbor that her husband told her it was because of the old culture they were following. They both went to the barn and open the ceiling to see what was there. They saw the two girls there and the wife of the man was very angry to her husband. She shouted at him of cheating her. The husband decided to drive out his children because he loved his wife very much. He and his two children started journey to be away from home. After they travelled for long, their father sat to defecate and told them to go forward until he finishes excretion. The children continued to go for a long distance, but the father didn't come. So they sat under a sycamore tree and started calling their father. While they were shouting "Father!" the ring he put in his feces was replying "Yes!". They followed the reply and found that it was a ring. They took it and continued they travel. They reached at a big river and afraid of crossing it and said to the river, "If we did evil, take us away if not stop flowing so that we cross". The river immediately stopped flowing and they crossed it and kept going. While they were going, they came across cloudburst. They said to the rain, "If we did something evil, kill us in lightening, if not stop raining and give us time to go". The rain stopped and it was possible for them to keep going. After they walked for long distance, they reached at a forest of big trees. They said to the forest, "If our deeds were evil, fall and kill us, if not fall and be a home for us". The trees fell and became a house. After the girls got the house to live in, they began to introduce themselves to neighbors. While they were doing so they met a very rich man whom the surrounding people named "Cannibal". The cannibal had no wife even though he had a lot of possessions. Emphasizing that God gave them home to live in, they proposed that it is good to help one another in life. The cannibal wanted one of the girls to control his property. One of the girls was fool while the other was wit. He chose the fool for his assets. The wit girl warned the fool one what she should do when she enters the cannibal's home. She informed her sister to give hay to the mule and a piece of bread to the dog and went out for her own business. The fool girl did the reverse; she gave the mule bread and the dog hay. The dog barked and the mule neighed. The cannibal came and shouted at the fool girl. 'You wanted to take my property, that is why you did in different way from what I ordered you to do', he said. The cannibal tied her in the sack and hangs her to the ceiling and ignited fire from the floor and went out. The wit entered the cannibal's home giving the mule hay and the dog a piece of dog, but she couldn't find her sister. When she called her, she heard a reply from the

ceiling. The wit girl untied the fool girl and put a sack full of snow instead her sister. She put a piece of fat on to the sack and went out with her sister leaving the fire to burn under it. The cannibal came and wanted to eat something and looked up to the sealing. The drop of the fat from the snow fell down and he sipped the drop. He again swallowed the drop thinking that it from the fool girl. He said, "Oh! My tasty drops continue flowing". While he was waiting the drops looking up to the ceiling the sack full of snow fell down and killed him. Till then, the two sisters became rich and live happily together

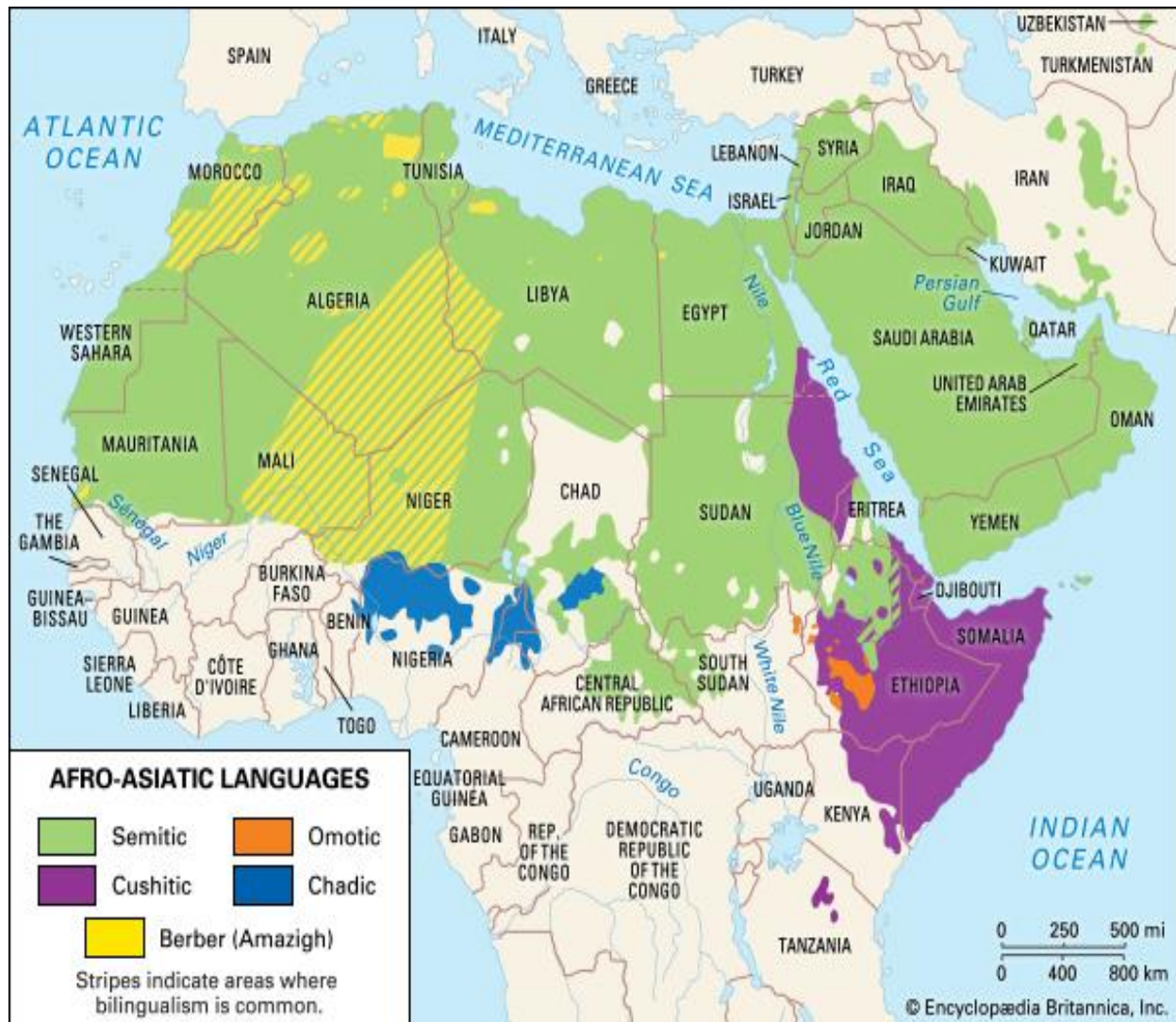
Appendix III: Maps

Map 1: Languages families in Africa



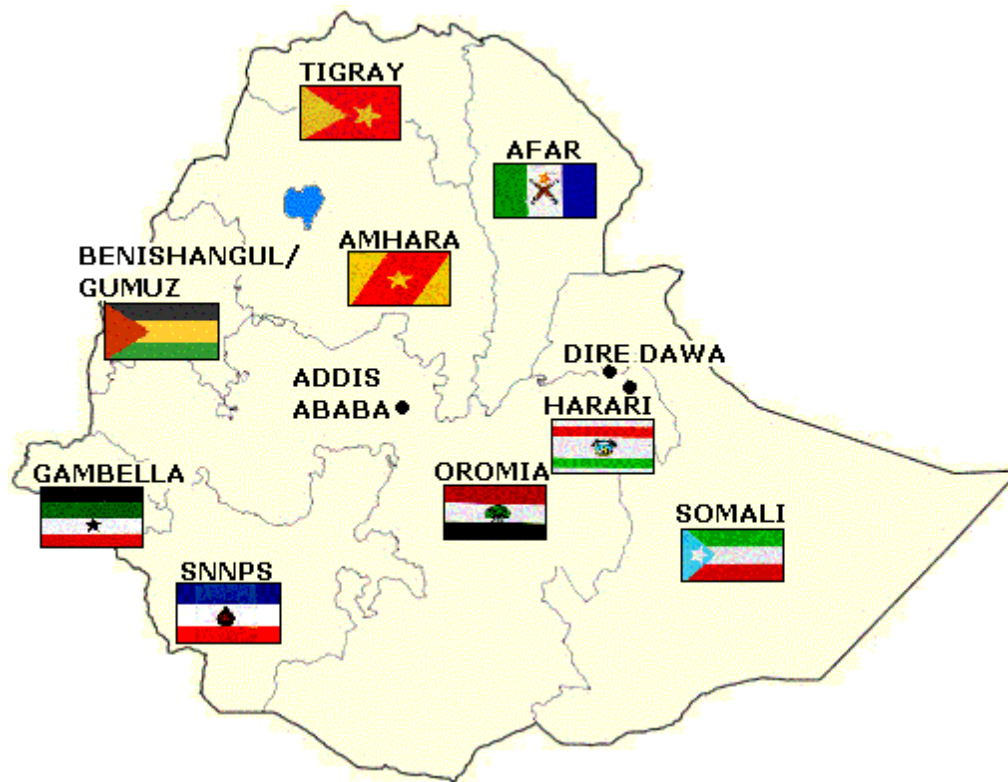
Source: <http://www.harpercollege.edu/mhealy/g101ilec/intro/reg/regfr.htm>

Map 2: Afro-Asiatic Languages



Source: Wolff (2017). Afroasiatic language family. <https://www.britannica.com/topic/Afro-Asiatic-languages>. Accessed 14/8/17

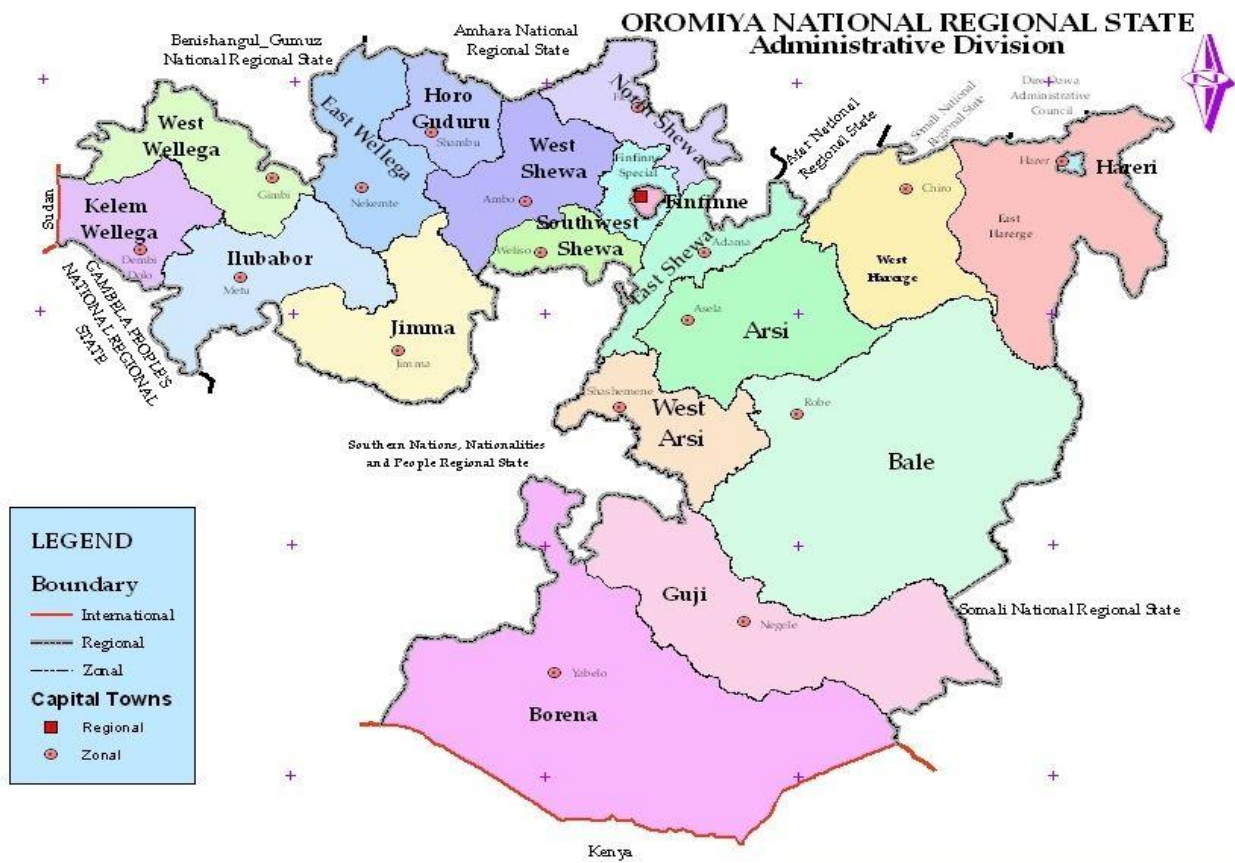
Map 3: Regional states of Ethiopia



Source: Embassy of The Federal Democratic Republic of Ethiopia, London, United Kingdom,

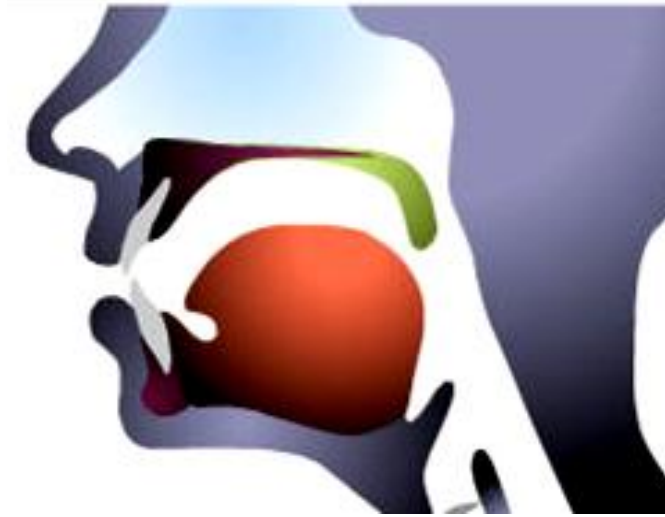
http://www.ethioembassy.org.uk/about_us/regional_states.htm

Map 4: Map of Oromia region

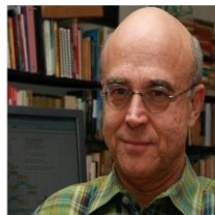


Source: <https://www.pinterest.com/pin/675821487805558551/>

Appendix IV: Some Faces of Non-Linear Phonology



Autoegmental Phonology



Metrical Phonology

Declaration

I, the undersigned, declare that this thesis is my original work and has never been presented for a degree in any other university, and that all sources of materials used for this thesis have been duly acknowledged.

Name: Tilahun Negash Mekuria

Signature: _____

Date: _____

Confirmation

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

Supervisor's name: Mulugeta Seyoum (PhD)

Signature: -----

Date: -----

Approved by Board of Examiners:

This is to certify that the thesis prepared by Tilahun Negash Mekuria entitled “Phonological phenomena in Arsi-Bale Afan Oromo: the perspective of Non-linear Phonology” and submitted in fulfillment of the requirements for doctoral degree in general linguistics complies with the regularities of the university and meets the accepted standards with respect to originality and quality.

Name

Signature

Chairman, Department Graduate Committee

Supervisor

Internal Examiner

External Examiner

List of Maps, Tables and charts

List of Maps

Map 1: Afan Oromo speaking area.....	2
Map 2: Afro-asiatic language family	6
Map 3: Ethiopian Zones that speak Arsi-Bale dialect Afan Oromo	10

List of Tables

Table 1: Consonant phonemes of Arsi-Bale Afan Oromo	38
Table 2: Distribution of consonant phonemes in Arsi-Bale Afan Oromo	41
Table 3: Vowel phonemes of Arsi-Bale Oromo	42
Table 4: Distinctive feature matrix for Arsi-Bale Afan Oromo consonants	51
Table 5: Underspecified feature matrix for Arsi-Bale Afan Oromo consonants	53
Table 6: Distinctive feature matrix for Arsi-Bale Afan Oromo vowels	54
Table 7: Underspecified feature matrix for Arsi-Bale Afan Oromo vowels.....	55

List of Charts

Chart 1: The moieties and sub-moieties of Arsi Oromo	4
Chart 2: The kinship organization of Arsi Oromo people	5
Chart 3: Classification of Afan-Oromo dialects.	9

List of Figures

Figure 1: Position of Afan Oromo within Afro-asiatic family.	7
Figure 2: Onset and Rhyme Model Structure.....	57
Figure 3: Moraic Structural Model	57
Figure 4: Syllable structure template for Arsi-Bale Afan Oromo	59
Figure 5: Structural Representation of CV Syllable type	59
Figure 6: Structural Representation of CVV Syllable type	61
Figure 7: Structural Representation of CVC Syllable type	61
Figure 8: Structural Representation of CVVC Syllable type	59
Figure 9: Feature Geometry Adopted from Clements (1985)	69
Figure 10: The relationship between C-place and V-place in Feature Geometry	70
Figure 11: Representation of assimilation of labial sound leftwards to supra-laryngeal node	71
Figure 12: Representation of <i>d</i> to <i>j</i> palatalization, Kebede (1994)	72
Figure 13: Representation of devoicing of <i>b</i> to <i>p</i> . Alemayehu (1991)	73
Figure 14: The process of delinking of the coronal sound /t/	75
Figure 15: The output of the assimilation of the coronal /t/ to the dorsal /k/	76
Figure 16: The process of delinking of the coronal sound /t/	76
Figure 17: The output of the assimilation of the coronal /t/ to the labial /b/	77
Figure 18: The process of delinking the coronal feature /n/	81
Figure 19: The output of the nasal assimilation of /nb/	82
Figure 20: The process of delinking the coronal feature /n/	82

Figure 21: The output of the nasal assimilation of /nm/	83
Figure 22: The process of delinking the coronal feature /n/	83
Figure 23: The output of the nasal assimilation of /nk/	84
Figure 24: The process of delinking the coronal feature /n/	84
Figure 25: The output of the nasal assimilation of /ng/	85
Figure 26: The process of delinking the coronal feature /n/	85
Figure 27: The output of the nasal assimilation of /nk'/	86
Figure 28: The process of delinking the nasal feature from /n/	87
Figure 29: The output of the nasal assimilation of /nl/	87
Figure 30: The process of delinking the nasal feature from /n/	88
Figure 31: The output of the nasal assimilation of /nr/	88
Figure 32: The process of delinking the nasal feature from /n/	89
Figure 33: The output of the nasal assimilation of /tn/	90
Figure 34: The process of delinking of the nasal and coronal features from /n/	91
Figure 35: The output of the delinking of the nasal and coronal features from /n/	92
Figure 36: Representation of progressive voice assimilation. Booij (1995)	93
Figure 37: Representation of regressive voice assimilation. Booij (1995)	93
Figure 38: Representation of voice assimilation in Arsi-Bale Afan Oromo	94
Figure 39: Representation of the ejective sound /t'/	96
Figure 40: Representation of ejective sounds	97
Figure 41: Representations of assimilations of ejectives to the following obstruent /t/	97

Figure 42: Representation of laryngeals for languages with and without true pharyngeals	99
Figure 43: Representation of the implosive sound	99
Figure 44: Representation of the assimilation of the coronal /d/ to the coronal /t/	100
Figure 45: Representation of consonant and vowel	103
Figure 46: Representation of metathesis of the ABAO word /ʔalbee/	104
Figure 47: Representation of compensatory lengthening.....	107
Figure 48: Representation of the epenthesis of a segment /ʔ/	109
Figure 49: Representation of ABAO epenthetic vowel [i]	111
Figure 50: Representation of the insertion vowel [i] to conform the syllable structure of ABAO.....	113
Figure 51: Representation of vowel harmony in ABAO	116
Figure 52: Representation of vowel length dissimilation in ABAO.....	121
Figure 53 Representation of consonant total assimilation to form a geminate.....	125
Figure 54 Representation of process of /m/ to /d/ assimilation to form a geminate.....	126
Figure 54 Representation of the result of total assimilation of /m/ to /d/.....	126
Figure 57: Representation of the result of total assimilation of /b/ to /dʒ/.....	127

Abbreviations and symbols

ABAO	Arsi-Bale Afaan Oromo
p.c	personal communication
ECSA	Ethiopian Central Statistical agency
ibid	same reference
σ	Syllable
F	foot
Wd	word
Qs	Quantity sensitive
PG	Perfect Grid
ER	End Rule
L	Low pitch (unstressed syllable)
H	High pitch (stressed syllable)
i.e.	that is
IPA	International Phonetic Association
e.g.	for example
et.al.	and others
+	presence
-	absence
[+cons]	consonantal
[-cons]	non-consonantal
Caus ₂	Causative 2
SPE	Sound Pattern of English
sg	singular
1sg	1 st person singular

pl	plural
1pl	1 st person singular
1Imp	1 st person imperfective
1mpl	1 st person masculine plural
2sg	2 nd person singular
2pl	2 nd person plural
3sgm	3 rd person singular masculine
3sgf	3 rd person singular feminine
3pl	3 rd person plural
Pf	perfective
Imp	imperfective
LN/LG	Laryngeal Node
AN	Articulation Node
Loc	Locative
#	word boundary
SL	Supralaryngeal Node
[+cnst.gl]	Constricted glottis
[+son]	sonorant sound
[-son]	non-sonorant sound
[+ant]	anterior sound
[-ant]	non-anterior sound
[+ tense]	long vowel
[+lax]	short vowel
[+cont]	continuant sound
[-cont]	non-continuant sound

[+sg]	spread glottis
[-sg]	non-spread glottis
N	Nucleus
O	Onset
C	Coda/consonant
cf.	compare
→	becomes/read as/implies
C –place	Consonant place
V-place	Vowel place
PL	Place of articulation node
SL	Supralaryngeal node
Caus ₁	Causative1
[-cost.gl]	non-constricted glottis
[+eject]	ejective sound
[-eject]	non-ejective sound
C ₁ C ₂ C ₃	Consonant one, two
CL	Compensatory lengthening
CAUS	causative
CV	Consonant Vowel
[+inset]	with insertion
[-inset]	with no insertion

RED	Reduplication
ACC	Accusative
indef	indefinite
f	feminine
m	masculine
Gen	Genitive
UAC	Universal Association Convection
Neg	Negative
AN	Articulation Node
Loc	Locative
#	word boundary
SL	Supralaryngeal Node
[+cnst.gl]	Constricted glottis

Acknowledgements

First and foremost, I should thank God Almighty who has been so gracious in keeping me well and helping me complete this study. Only due to His blessings I could finish my dissertation.

Whatever merit this work may have is a result of wide ranging contributions from friends and scholars that I came in contact with, during my period of research at Addis Ababa University. It is difficult to register my gratitude to everyone who has helped me in this dissertation and I hope that those I do not mention by name will forgive me and accept my thanks in this form.

My dissertation supervisor, Dr. Mulugeta Seyoum, gets the lion's share of my academic debt and gratitude. I owe him such a credit for his many insightful comments, painstaking editing and prompt delivery that have greatly directed the course of this work and made it what it is today. Working with him is a blessing and I will forever be grateful. His kindness, generosity and passion for work also have special place in my life.

There are also scholars abroad who contributed to this study. Most notably, Dr. Leoma Gilley of SIL was kind enough to me. She treated me as if I was her advisee and edited and commented on the first four chapters of my dissertation and sent me through e-mail. This is great! Words cannot express the feelings I have for her academic devotion. In addition, I would like to thank Professor Maria-Rosa Lloret, from Barcelona, for sending me her articles on Oromo language through post office paying the transportation fee herself. The articles have proved extremely useful.

I extend my thanks to Dr. Moges Yigezu for creating an academically enriching experience in introducing me to the world of generative phonology and theoretical linguistics and for providing lots of materials during the years of my MA study. He left his indelible mark on my development as a linguist,

My sincere gratitude is reserved for Ato Birhanu Hailemeskel, my friend, who helped me contact appropriate informants from the college he is working in. I appreciate his prompt reaction to my timely inquiry.

My sincere gratitude goes to all the informants who participated in this study for their patience and goodwill. In this respect, many thanks are due to Ato Mohammed Rabo, Bonsa Tujii and Ganno Adam. They participated in the interview process actively. I am grateful to their honesty and expressiveness each of them gave to the study.

Very special thanks to Ato Mohammed Rabo, the information communication officer at Huruta town in Arsi Zone of Oromia Region and Ato Adem Kasim, the ET- 430 project director and his colleague Ato Demissie Sime for giving me the opportunity to use the internet in their offices any time I needed the access.

Last, but not the least, I would like to send a special thank to my wife, Senait Kebede, my best friend and confidant. She and our children Bethel, Mickyas, Addisu and Amen have given me unconditional support throughout this process, and I am blessed to have such a strong beloved family.

I dedicate this dissertation to the memory of my father, Negash Mekuria, and my brother Tiruneh Negash whose roles in my life was, and remains immense.

ABSTRACT OF THE DISSERTATION

Phonological phenomena in Arsi-Bale Afan Oromo: the perspective of Non-linear Phonology

by

Tilahun Negash

Doctor of Philosophy in General Linguistics

Addis Ababa University, Addis Ababa, 2018

Doctor Mulugeta Seyoum, Supervisor

This dissertation describes the phonology of Arsi-Bale Afan Oromo. The data were descriptively presented within the framework of ‘Non-linear Phonology’ particularly, the version of Autosegmental and Metrical phonology. Non-linear Phonology is inaugurated in the mid-seventies by Goldsmith (1976). The claim of non-linear phonology is that certain phonological units or segments can be thought of as existing in an ordered sequence on a separate, independent tier from other phonological units or segments. Chapter one discusses a brief statement on the people and speakers of Arsi-Bale Afan Oromo language with a sketch of dialectal variation in the language. Some previous studies on Oromo language, the scope of the study, Objectives of the research, and the Methodology used are discussed in this chapter. The chapter also contains an explanation of the theoretical framework and the motivation for using the framework in the phonological representations. Chapter two deals with the inventory of Arsi-Bale Afan Oromo consonant and vowel phonemes. It also outlines the Distinctive Features of the sounds. The phonemic inventory is treated with the feature specification of each phoneme briefly to provide sufficient background for the presentation of the phonological system. Chapter three presents the phonological processes that are specific to Arsi-Bale Afan Oromo. It discusses the assimilatory and other phonological processes and formalizes the variety of them within autosegmental representation. Chapter four explores the nature and types of pitch-accent within an autosegmental phonological perspective. It characterizes the language under pitch-accent language and discusses previous studies on the tone of it. It also shows the ways in which pitches are combined in the language together with their distribution. It also presents the nature

of tones in the nominal and verbal morphology of the language. The role of pitch in the syntax is also discussed slightly. Chapter five addresses lexical word stress in ABAO with modern phonological theories as metrical phonology and Grid theory. Central concepts and structures within the phonological theories are introduced and discussed, and examples of how the word stress pattern of Arsi-Bale Afan Oromo can be treated within Grid theory are given. Chapter six and the last chapter summarizes the paper from the very beginning to the end of it.

TABLE OF CONTENTS

Declaration.....	i
Confirmation	ii
Approval page.....	iii
List of Maps, Tables and charts.....	iv
List of figures.....	v
Abbreviations and symbols.....	vii
Acknowledgements.....	ix
Abstract.....	xi
Table of contents.....	xii

CHAPTER ONE: BACKGROUND STUDIES

1.0 Introduction.....	1
1.1 The people.....	1
1.2 The language	5
1.3 The dialect variation in Afan Oromo.....	7
1.4 Statement of the Problem	11
1.5 Research questions.....	12
1.6 Objectives of the study	12
1.6.1 General objective.....	12
1.6.2 Specific objectives.....	12
1.7 Significance of the Study.....	13
1.8 Previous Studies.....	13
1.9 Scope of the Study.....	21
1.10 Method	21
1.11 Theoretical Frameworks.....	22
1.11.1 Autosegmental Theory.....	22
1.11.2 Metrical Theory.....	24
1.11.2.1 Forms of Metrical Theory	
1.11.2.1.1 Metrical Tree.....	26

1.11.2.1.2 Metrical Grids.....	27
1.11.2.1.3 Parametres of Grid Theory.....	28
1.11.2.1.4 Similarities and Differences between Metrical tree and Metrical Grid.....	31
1.12 CV phonology	32
1.13 Summary of chapter one	35

CHAPTER TWO: THE ARSI-BALE AFAN OROMO SOUND SYSTEM

2.0 Introduction.....	37
2.1 Consonant phonemes	37
2.2 Vowel phonemes	42
2.3 Phonetic description of Arsi-Bale Afan Oromo sounds	43
2.3.1 Major class features	
2.3.1.1 [+/- Consonantal] sounds	44
2.3.1.2 [+/- Syllabic] sounds	44
2.3.1.3 [+/- Sonorant] sounds	44
2.3.2 Cavity features	44
2.3.2.1 Primary stricture	
2.3.2.1.1 [Coronal] sounds	45
2.3.2.1.2 [+/- Anterior] sounds	45
2.3.2.1.3 [Labial]; [+/- Round] sounds	45
2.3.3 Tongue body features	46
2.3.3.1 [+/- High] sounds	46
2.3.3.2 [+/- Low] sounds	46
2.3.3.3 [+/- Back] ; [Dorsal] sounds	47

2.3.3.4 [+/- Long] Sounds	47
2.3.4 Manner features	47
2.3.4.1 [+/- Continuant] sounds	47
2.3.4.2 [+/- Lateral] sounds	48
2.3.4.3 [+/- Nasal] sounds	48
2.3.4.4 [+/- Strident] sounds	48
2.3.4.5 [+/- Del. rel] sounds	49
2.3.5 Laryngeal features	49
2.3.5.1 [+/- Voiced] sounds	50
2.3.5.2 [+/- Spread glottis]; [+/- Constricted glottis]	50
2.4 The syllable	55
2.4.1. Syllable types in Arsi-Bale Afan Oromo	58
2.4.1.1 The CV syllable type	59
2.4.1.2 The CVV syllable type	60
2.4.1.3 The CVC syllable type	60
2.4.1.4 The CVVC syllable type	61
2.5 Arsi-Bale Afan Oromo word structure	61
2.5.1 Monosyllabic words	62
2.5.2 Disyllabic words	62
2.5.3 Trisyllabic words	63
2.5.4 Summary of chapter two.....	63

CHAPTER THREE: PHONOLOGICAL PROCESSES IN ARSI-BALE AFAN OROMO

3.0 Introduction.....	65
3.1 Definition and essence of assimilation.....	65
3.2 Phonological features.....	67
3.2.1 Place assimilation.....	73
3.2.2 Homorganic nasal assimilation.....	77
3.2.3 Assimilation of manner of articulation	86
3.2.4 Laryngeal assimilation.....	92
3.2.4.1 Voice assimilation.....	93
3. 2.4.2 Ejection assimilation	95
3.2.5 Metathesis	100
3.2.6 Compensatory lengthening	105
3.2.7 Epenthesis	108
3.2.7.1 Consonant Epenthesis	108
3.2.7.2 Vowel Epenthesis	110
3.2.8 Vowel harmony	113
3.2.9 Dissimilation	117
3.2.10 Reduplication.....	122
3.2.10.1 Representation of ABAO reduplication.....	125
3.2.11 Summary of chapter three	127

CHAPTER FOUR: ASPECTS OF PITCH-ACCENT IN ARSI-BALE OROMO

4.0 Introduction.....	129
4.1 Previous studies on Oromo tone.....	130
4.2 Descriptive aspects of pitch-accent in Arsi-Bale Afan Oromo.....	134
4.2.1 Linear approach to ABAO pitch-accent.....	135
4.2.1.1 Pitch-accent assignment of ABAO nouns.....	136
4.2.1.2 Pitch-accent patterns of ABAO adjectives and verbs.....	142
4.2.2 Non-Linear approach to ABAO pitch-accent.....	144
4.2.2.1 Gender.....	150
4.2.2.2 Number.....	151
4.2.2.3 Case.....	153
4.2.2.3.1 Nominative case.....	153
4.2.2.3.2 Locative case.....	154
4.2.2.3.3 Genitive case.....	155
4.2.2.3.4 Dative case.....	156
4.2.2.3.5 Ablative case.....	157
4.2.2.3.6 Instrumental case	157
4.2.2.3.7 Summary of chapter four	158

CHAPTER FIVE: ASPECTS OF STRESS PATTERNS IN ARSI-BALE AFAN OROMO

5.0 Introduction	160
5.1 Overview of previous research on accent	160
5.2 Theories of Pitch-Accent.....	161
5.2.1 Diacritic Accent.....	162
5.2.2 Pre-linked H-tone.....	162
5.2.3 Metrical Accent	164
5.2.4 Approach for ABAO pitch-Accent	165
5.3 The Interaction of pitch-accent and Stress in Arsi-Bale Afan Oromo.....	169
5.4 Summary of chapter five.....	169

CHAPTER SIX: SUMMATION OF THE STUDY

6.0 Purpose, objective and method of the study.....	171
6.1 Abridged form of findings.....	171
6.2 Representation of the phonological processes.....	177
References.....	179

APPENDICES

Appendix I: Arsi-Bale Afan Oromo - English Word List.....	189
Appendix II: Stories told by Arsi-Bale Afan Oromo Speakers.....	202
Appendix III: Maps.....	216
Appendix IV: Some faces of non-linear phonology.....	220