Jimma University
College of Social Sciences and Humanities
Department of English Language and Literature

Syllable Structure of Mecha Oromo in Optimality Theory

By
Nebiyat Fekadu

Thesis
Presented in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Socio-cultural Linguistics

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DECLARATION, CONFIRMATION, APPROVAL AND EVALUATION

Research Title: Syllable Structure of Mecha Oromo in Optimality Theory

Declaration

I, the undersigned, declare that this thesis is my original work, and that all the sources used for it are duly acknowledged.

Name of Student	Signature	Date

Confirmation and Approval

This thesis has been submitted for examination with our approval as thesis advisors.

Name of Principal Advisor	Signature	Date
Name of Co - Advisor	Signature	Date

Thesis Evaluators:

Name of External Examiner	Signature	Date
Name of Internal Examiner	Signature	Date
Name of Chairperson	Signature	Date

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ABSTRACT

This study deals with the analysis of the syllable structure of Mecha Oromo in optimality theory. The major aim of this study is to describe the syllable structure of Mecha Oromo using the markedness and the faithfulness constraint set. To achieve the objectives, an elicitation method was used. In this study, a typical word list, felicity judgment/repetition of reading, and spontaneous speech were used. In this study, basic phonemes and their distribution in the words were consulted as inputs for the analysis of syllable structure of Mecha Oromo. The study provided the basic syllable types, the restricted syllable types, possible distribution of syllables, and word structure and stress pattern in Mecha Oromo. The basic syllable types in Mecha Oromo are CV, CVC, CV: and CV: C. Vowel initial and syllable with consonant cluster in word-initial and word-final are prohibited in the Mecha Oromo, but not more than two consonant clusters are allowed at word-medial position. The syllable structure of Mecha Oromo was also analyzed based on markedness and faithfulness constraint sets. In Mecha Oromo, word-initial vowel is prohibited to satisfy ONSET constraint by the glottal stop /ʔ/ which is epenthesis to break a vowel initial in a syllable structure. Mecha Oromo allows coda; hence, NOCODA constraint is least ranking violation. In Mecha Oromo, complexity in initial and final position of the words is restricted but not allowed more than two consonants in word-medial position. The syllable structure of Mecha Oromo is also analyzed using the universal faithfulness constraints where DEP-IO:-every segment in the output must have a correspondent in the input (no epenthesis), MAX-IO: - every segment present in the input must have a correspondent in the output (no deletion). IDENT (PLACE): -Distribution of place feature in the input and output is identical. Hence, in Mecha Oromo, DEP-IO is ranked as least-violation and MAX-IO is optimal. Similarly, in the language, IDENT-IO (PLACE) is ranked as least –violation as the place feature changes from input to output during assimilation and metathesis.

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SYMBOLS AND ABBREVIATIONS

*	constraint violation
*!	Fatal Constraint Violation
/ /	phonological transcription
[ ]	phonetic transcription
⟨ ⟩	segments elided in phonetic realization
“ ”	phonetic form
≫ or ⋙	≫ or ⋙ denotes domination
'	Stress
☞	harmonic or optimal candidate
C	Consonant
CAU	Causative
EP	Epenthesis
F	feminine
IPV	Imperfective
L	Light
H	Heavy
M	masculine
NEG	negative
NOM	Nominative
ORD	Ordinary
OT	optimality theory
PL	plural (for nouns)
PRV	Perfective
SG	singular (for nouns)
V	Vowel

CHAPTER ONE

INTRODUCTION

The purpose of this study is to provide a constraint-based syllable structure in Mecha Oromo. Using the frame work of Optimality theory (OT; Prince and Smolensky, 2004), the present study tries to account for the identification of basic syllable types and its possible distribution and related syllabification patter in Mecha Oromo.

This chapter deals with the background information about the Oromo people language which is known as 'Afaan Oromo' and different classification of dialects among the speakers according to different scholars view and deals with giving a brief description of Mecha Oromo phonological system. Statement of the problem, objectives of the study, research question, and scope of the study, significance of the study and methodology of the study are also described in this chapter.

1.1.Background of the study

The Oromo people speak the language known as "Afaan Oromo",[1] one of the Afro-Asiatic languages and the most widely spoken of the Cushitic family. It is one of the major indigenous African languages that are widely spoken in most parts of Ethiopia and some parts of the neighboring countries (Mekuria, 1994). However, the Oromo people speak Afaan Oromo language with different classifications of dialects because of the regional differences. Besides phonological differences, there are differences in pronunciation and vocabulary. Different scholars tried to classify the dialects of Afaan Oromo. Wako (1981) classified the language into five clusters: Southern (Arsi, Guji, and Borena), Central (Karayu and Selale), Mecha (Jimma, Wollega, and Illubabor), Eastern (Harar and Bale), Northern (Rayya and Wollo). However, in Kebede (2009) 's "Towards the Genetic classification of the Afaan Oromo Dialect'', the language has four clusters: Northwestern (Tulema and Mecha), Eastern (Harar, Arsi- Bale, and Wollo-Rayya), Central (Arsi-Zeway, Guji, Borena, Munyo and Orma), Southern (Waata).

[1] The term *Afaan Oromo* literally means 'mouth of Oromo, (Oromo language.'

It is obvious that Afaan Oromo has an official script known as “Qubee”, which is based on Latin orthography. As observed in the above and elsewhere, all the previous works have not seen the syllable structures of Afaan Oromo particularly Mecha Oromo using the optimality theory. Hence, the present study aims at describing briefly the syllable structure and analyzing the internal syllable structures of Mecha Oromo by using the optimality theory; the principle of constraint (CON) set.

1.2.Statement of the problem

There are a large number of researches conducted on the phonology, syntax, semantics and sociolinguistics of Afaan Oromo. For example, Temesgen (1993)’s *Word formation process in Mecha Oromo* attempts to describe how words are formed by the process of derivation and compounding. Wakwaya (2014)’s *Inflectional morphology in Oromo* describes the inflectional morphology in the language by identifying morphemes and drawing rules for the inflection in the language. Lloret (1997). ‘Oromo phonology” focuses on the representation of glottal in Oromo. Wako (1981)’s *The phonology of Mecha Oromo* mainly deals with descriptive study of the sound system of the dialect of Mecha including phonotactics, syllabification and morphemes.

Kebede[2] (1994)’s *Baate (Wollo) Oromo Phonology* presents palatalization of alveo-dental consonants and related issues. Habte (2003)’s *Analysis of Tone in Oromo* deals mainly on the significance of tone and its lexical and grammatical function. Moreover, the thesis tried to present the segmental phonology including the syllable structure and to explain the status and function of tone. Dejene (2010)’s *Kamise Oromo Phonology* describes the different phonological aspects of the dialect including the phonotactics and supra-segmental features. Jamaica, (2011)’s *The syllable structure and related phonological process in Harar Oromo* focuses on the syllable types using the perspective of the moraic approach. Though, such a large number of linguistic studies listed above were conducted on the Oromo language using different perspectives, all have never described the syllable structure of Mecha Oromo using optimality theory yet.

[2] The transliteration of the names of Ethiopian places and person varies. I have attempted to adopt consistent transcription throughout this thesis, except when quoting a period document, caption, or title.

The present study focuses on linguistic analysis and attempts to describe the syllable structure of Mecha Oromo using the optimality theory. This study is different from the previous studies in terms of the theory used to analyze the present data of the study. The researcher tried to list types of syllable structure, describe and analyze briefly the basic internal structure of the language using optimality theory focusing on the principle of constraint (CON) set. The purpose of the present study is to provide a comprehensible optimality theory analysis of syllable structure and syllabification pattern in Mecha Oromo. In sum, the result of the present study would contribute to the application of optimality theory to Afan Oromo language in general and to the syllable structure of Mecha Oromo in particular.

1.3.Objectives of the study

1.3.1. General objective

The general objective of this study is to describe the syllable structure of Mecha Oromo using optimality theory.

1.3.2. Specific objectives

The specific objectives of the study are: -

- To identify the basic syllable structures of Mecha Oromo.
- To explore the basic constraints of Mecha Oromo syllable structure and
- To analyze the syllables of Mecha Oromo using optimality theory.

1.4.Research questions

The present study will answer the following questions.

- What is the basic syllable structures of Mecha Oromo?
- What are the basic constraints of Mecha Oromo syllable structure?
- What are the syllables of Mecha Oromo using optimality theory?

1.5.Scope of the study

The study is delimited towards analyzing syllable structure of Mecha Oromo particularly spoken in Wollega, Jimma and Illubabor areas using optimality theory and principles of constraint (CON) sets. The researcher is a native speaker of the Mecha Oromo that an introspection method was used.

The researcher also used an elicitation method to collect appropriate and relevant data from active participation of native speakers of the language. Following the optimality theory principle of constraint sets, the study identified, categorized and analyzed types of syllable structures using faithfulness and markedness components of principles of constraint (CON) set

1.6. Significance of the study

Syllable is one important phonological phenomenon. Even though there are different previous studies of different linguistic analysis on Oromo language, syllable structure has not been studied so far in detail. The present study lies on the fact that the proper description of the syllable structure of Oromo in OT can make the following inputs. The first one is it will provide a further insight into the phonetics and phonology of the language. This will contribute significance for other researchers to the study of other areas such as morphology and syntax of the language since all linguistic elements integrate each other. Secondly, it will help for the academic purpose at various levels.

1.7.Organization of the thesis

This thesis is organized into five chapters. The first chapter presents the general background of the study, the consonant and vowel inventories of phonemes and its distribution in a word, statement of the problem, research objectives, and significance of the study, scope of the study and research methodology. The second chapter focuses on the theory and concepts of syllable structure and some related topics reviewed previous works on syllable structure of Afaan Oromo. Chapter three provides the analysis of syllable structure, basic syllable type, possible distribution of syllables, word structure and stress pattern in Mecha Oromo. The fourth chapter analyzes the syllable structure in Optimality theory. This chapter provides a detailed markedness and faithfulness constraint analysis of syllable structure of Mecha Oromo. The last chapter summarizes the results of the study and followed by conclusion.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter consists of two sections in which the first section mainly describes the previous works on syllable structure of Afaan Oromo, by using different examples as pointed by different scholars' view. The second section mainly involves the theoretical framework; the definition, concepts and components of optimality theory, the syllable in optimality theory and the definition, types and function of syllable are described by explaining and giving different examples from the views of different scholars.

2.1.Overview of the Phonology of Afaan Oromo

Presenting the detailed features of phonological system of Mecha Oromo is not the main objective of the present study but providing the readers with an input for concept to be used in the next chapter where the main subject matter of the research is treated. Hence, various linguistic works have been consulted to provide an overview of phonological aspects, syllable structures, phonological process and prosodies from different linguists (Wako, 1981; Lloret, 1997; Habte, 2003; Dejene, 2010; Jamaica, 2011 and Dejene & Devardhi, 2013). Depending on the findings of these phonological works, this section mainly focuses on the Mecha Oromo consonant and vowel phoneme inventory, description, and distribution of consonants and vowels with different examples. There are also several works in other dialects of Afaan Oromo including Teferi (2019)'s *A Grammar of Rayyaa Afaan Oromo: Documentation and Description*, Temesgen(1993)'s *Word Formation in Oromo* and Wakweya (2014)'s *Inflectional Morphology in Oromo.*

2.1.1. The Phonemes of Afaan Oromo

From the point of linguistics works in Afaan Oromo, phonological system of consonant and vowel phonemes was described in the language. Like other dialects of Afaan Oromo, Mecha Oromo consonant phonemes are described (Wako, 1981:12).

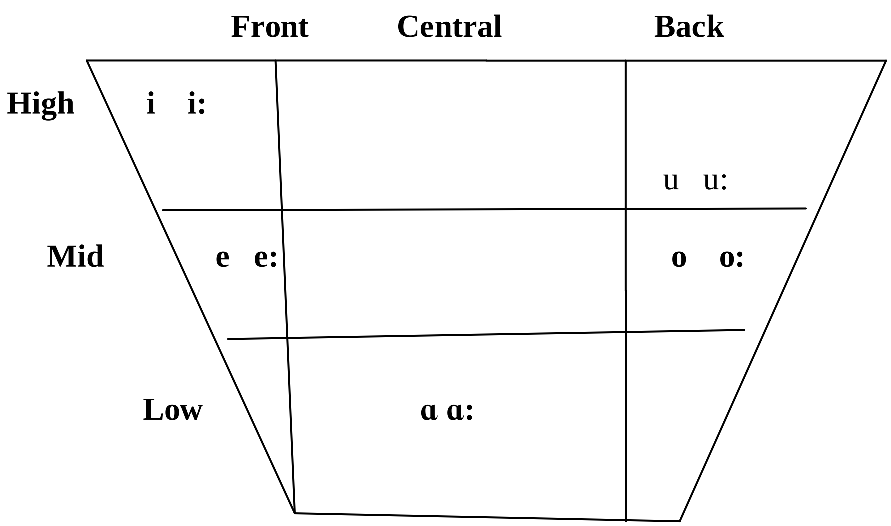
Table 1 Consonant phonemes

		Bilabial	Labio- dental	Alveolar	Palatal	Velar	Glottal
Stop	Voiced	b		d		g	
	Voiceless			t		k	ʔ
	Ejective	p′		t′		k′	
	Implosive			ɗ			
Fricatives	voiced						
	voiceless		f	s	ʃ		h
Affricates	voiced				dʒ		
	voiceless				tʃ		
	Ejective				tʃ′		
Nasals		m		n	ɲ		
Lateral				l			
Flap				r			
Semi- vowels		w			j		

(Adopted from Wako, 1981:12)

As shown in the above table, Afaan Oromo has the stop phonemes ***/ p', b, t', t, d, ɗ, k, k', g, ʔ***/, fricative phonemes /***f, s, ʃ, h*** /, affricative phonemes /***tʃ', tʃ, dʒ***/, nasal phonemes /***m, n, ɲ*** /, lateral /***l***/, Flap /***r***/ and semivowel /***w, j***/. In addition to the consonants, the language owns five long and short vowel phonemes. These are two front vowels / ***i, e*** /; two back vowels / ***o, u*** / and one central vowel / ***a*** / (Wako, 1981:10-30).

TABLE 2.VOWEL PHONEMES



(Wako, 1981:31)

2.1.2 Distribution of Phonemes in Words

Linguists have often observed absolute restriction in the patterning of phonemes in words/phrases as well in syllables (Kessler and Treiman, 1997). There are some phonotactic constraints on the possible combination of sounds functioning on units larger than its segment like syllable while phonemes come together in languages such as Afaan Oromo. For example, as described by several scholars (Wako, 1981; Habte, 2003; Dejene, 2010; Tariku, 2019), a cluster of consonants and gemination is not permissible both word-initially and finally but possible word medially as listed in the following examples.

Gemination	**Cluster of consonants**
/dʒɑbbi:/ ‘calf’	/kolfɑ/ ‘laugh’
/tʃʼɑbbi: / ‘ice’	/gɑmnɑ/ ‘wise’
/ʔɑnnɑn/ ‘milk’/	/ hɑrkɑ/ ‘hand’
/hɑmmɑtʃu:/‘hung’	/ʔɑrbɑ/ ‘elephant
/ʔɑkkɑ:tɑ:/ ‘according’, ‘condition’	/gɑrbɑ/ ‘ocean’, ‘slave’

In addition, all long and short vowels occur in only word medial and final position.

Short vowels		**Long vowels**	
/lɑfɑ/	'earth'	/lɑ:fɑ:/	'Smooth', 'soft'
/mɑnɑ/	'house'	/gɑ:ri:/	'best', 'fine', 'good'
/tʃ'ufe/	'enclosed'	/be:kɑ:/	'intelligent', 'wise
/feɗɑ/	'interest',	/ʔe:le:/	'baking pan'
/tʃ'imɑ:/	'strong'	/di:mɑ:/	'red'
/ʔɑtʃi/	'there'	/bɑri:/	'early'
/tole/	'ok'	/ro:bɑ/	'rain'
/bido:/	'sheep'	/bu:si:/	'contribution'
/dɑfino:/	'monday'	/bɑ:du:/	'cheese'

Wako (1981:28) claimed that the fricative glottal sound /h/ is restricted to initial position. However, the current researcher asserted that ***/h/*** can occur in word medial position in the case of /bɑhɑ/ 'east'; /bɑhi:/ 'outcomes'.

As described by Wako (1981), Habte (2003) and Dejene (2010), not all consonants but consonants such as /***m, n, r, l,s, f/*** more frequently occurs word finally and all nasal sounds except the palatal ***/ɲ /***can occur word-final position as given in the following examples.

[m] /kɑm/ 'which'
/ʔɑkkɑm/ 'how'
[s] /ʔɑkkɑs/ 'so'
[n] /fo:n/ 'meat'
/ʔɑnnɑn/ 'milk'
[f] /ʔof/ 'self'
[r] /bor/ 'tomorrow'

TABLE 3 .Distribution of Consonant phonemes

Consonant	word Initial	Word Medial	Word Final	Consonant	word Initial	Word Medial	Word Final
/p′/	----	/lɑ**p′**e:/ ‘heart’	/lip′/ ’blink’	/ʃ/	/**ʃ**ɑ:kɑlɑ ‘practice’	bi**ʃ**ɑ:n ‘water’	---
/b/	/**b**ɑrɑ/ ‘era’,’year’	/tɑ**bb**ɑ/ ‘hill’	/gɑ**b**/ ‘kept quite’	/h/	/hark ‘hand’	/bɑhɑ/ ‘east’	---
/t/	/**t**ʰe:sso:/ ‘address’,‘seat’	/**b**ɑ:ti:/ ‘moon’	/sɑdde:**t**/ ‘eight’	/tʃ/	---	/ʔɑ**tʃ**i/ ‘here’	---
/t′/	/**t′**uw:e:/ ‘pot’	/fɑn**t′**o:/ ‘syphilis’	/hɑ**t′**/ ‘cutting’, (suddenly)	/tʃ′/	/**tʃ′**ɑbbi:/ ‘snow’	/bo**tʃ′**ɑ/ ‘shape’	---
/d/	/**d**ɑ:rɑ:/ ‘ash’	/bɑ**d**ɑ:/ ‘bad’	/gɑ**d**/ ‘down’	/dʒ/	/**dʒ**abɑ: ‘strong’	/ʔi**dʒ**ɑ ‘eye’	---
/ɗ/	/ɗɑ**ɗ**ɑ: ‘butter’	/fu:**ɗ**ɑ/ ‘marriage’	---	/m/	/**m**ɑ:llɑk′ɑ/ ‘money’	/ lɑ**m**ɑ/ ‘two’	/jo:**m**/ ‘when’
/k/	/**k**ɑ:jjo:/ ‘aim’, ‘goal’,	/mu**k**ɑ/ ‘tree’	---	/n/	/**n**ɑmɑ/ ‘person’	/**n**ɑnno:/ ‘local’	/**ʃ**ɑn/ ‘five’
/k′/	/**k′**ɑ:mɑ/ ‘body’,’organ’,	/bɑ**k′**u:/ ‘to melt’	/wɑ:**k**/ ‘God’	/ɲ/	/**ɲ**ɑ:tʃu:/ ‘to eat’	/ʔe:**ɲ**:u/ ‘who’	---
/g/	/**g**orsɑ:/ ‘advisor’, ‘consultant’	/dɑ:n**g**ɑ:/ ‘boundary’	---	/l/	/**l**agɑ/ ‘river’	/go**l**ɑ/ ‘room’	/ʔo**l** / ‘up’
/ʔ/	/ **ʔ**ɑ:ngo: / ‘authority’, ’power’	/mo**ʔ**u: / ‘to defeat’	---	/r /	/**r**ɑ:fu:/ ‘cabbage’	/gɑ**r**ɑ: / ‘stomach ’	/ bo**r** / ‘tomorrow ’
/f/	/**f**uɲɑ:n /‘nose’	/ʔul**f**ɑ ‘pregenant’	/ʔo**f**/ ‘self’	/w/	/**w**ɑlaba ‘independent’	/go**ww**ɑ:/ ‘foolish’	---
/s/	/**s**o:ressɑ/ ‘rich’	/kɑnni:**s**ɑ/ ‘bee/s’	/ʔɑ**s**/ ‘here’	/j /	/**j**o:m/ ‘when’	/wɑ**j**jɑ:/ ‘clothes’	---

(cf. Tariku, .2019:12)

2.2.Previous works on syllable structure of Afaan Oromo

Previous works of different linguists tried to describe the syllable structure and the distribution of phonemes in syllable of Afaan Oromo language. According to Wako (1981:38), Habte (2003:21) and Dejene (2010:36), word initial cluster and word final cluster is not allowed in the language. That means, *COMPLEX^{ONS} and *COMPLEX^{COD} is inviolable and nucleus is obligatory in the language like the other languages. Gemination or cluster at word medial is divided up because of the restriction with a segment in a syllable structure as listed in the following examples.

Gemination	/tɑbbɑ/	/tɑb.bɑ/	'hill', 'mountain'	CVC.CV
	/ɗɑbbɑtɑ:/	/ɗɑb.bɑ:.tɑ:/	'Permanent'	CVC. CV.CV
Cluster	/hɑrkɑ/	/hɑr.kɑ/	'hand'	CVC.CV
	/mormɑ/	/mor.mɑ/	'neck'	CVC. CV
	/hɑlkɑn/	/hɑl.kɑn/	'night'	CVC. CVC

Regarding the distribution of phonemes within a syllable, Wako (1981:39) showed that the consonant phonemes such as ***/ɲ/***and ***/pʼ/*** do not occur before the vowel ***/i/***. The present study asserted that those phonemes cannot occur before the short vowel ***/i/*** in a syllable structure but they can occur before long vowel /***i:*** / in the dialect.

a).	[ɲ]	/sɑɲi:/	/sɑ.ɲi:/	'gene', 'species', 'kind'	CV.CV:
	[pʼ]	/hɑpʼi:/	/hɑ.pʼi:/'	light', 'thin'	CV.CV:
		/k'opʼi:/	/k'o.pʼi:/	'occasion', 'preparation'	CV.CV:
b).	[pʼ]	ɗipʼinɑ/	/ɗipʼ.ʔi.nɑ/	/ 'stress'	CVC.CV.CV

2.3.Theoretical Framework: Optimality Theory

Optimality theory was first introduced by Prince and Smolensky in the early 1990s as an alternative model of the organization of natural human language sound system. Optimality theory is a linguistic model proposing that the observed form of language arises from the optimal satisfaction of conflicting constraints as cited by Prince & Smolensky (2004:3).

According to, Archangeli (1999:533-534), Optimality theory proposes a single means of expressing which constraints are violable, namely constraint- ranking violation or lower- ranked constraints are tolerated in order to satisfy higher-ranked constraint. Optimality models grammars as a system that provides mapping from input to outputs. The inputs are conceived of as underlying representation and the output as their surface realization. The present study used the Optimality theory; constraint set (CON) principle to analyze the Mecha Oromo syllable structure.

2.3.1. The Syllable in Optimality Theory

Grammar is deceptively simple under OT. At universal level there is a set of constraints on phonological representation (CON), a means for generating relationships between an actual input and potential output (GEN) and simultaneously evaluating the potential out puts against the set of ranked constraints in order to choose the optimal output for the input in question (EVAL). As described by Archangeli, (1999:534).

2.3.1.1.Input and GEN: The candidate set

Optimality theory supposes that there is no language-specific restriction on the input. This is called richness of the base as cited by Prince and Smolinsky (2004). According to, Kager (2004:20), GEN is free to generate any possible output candidate for some input called freedom of analysis. Since, GEN generates all logically possible candidate analyses of a given input, the Optimality theory grammar needs no rewrite rules to map input into outputs that all structural changes are applied in one step in parallel. The Evaluation of this candidate analyses is the function of the Evaluator, the component of ranked constraint.

2.3.1.2.CON*:* The constraint set

The basic syllable structure constraints which generate the typology of syllable divided into two groups, namely the structural “markedness” those that enforce the universally unmarked characteristics of the structures and the faithfulness constraints those that constraint the relationship between output and input structure as cited by Prince and Smolensky (2004:106).

2.3.1.2.1. Markedness Constraint

Markedness constraint requires that the output forms meet some criterion of structural well-formedness. Such requirement may take the form of prohibitions of marked phonological structures, including prosodic structures or occurrences of segments type in specific position as cited by Kager, (2004:9).

Kager (2004:9)'s markedness constraints;

- Vowels must not be nasalised
- Syllables must not have codas
- Obstruent's must not be voiced in coda position
- Sonorants must be voiced
- Syllables must have onsets
- Obstruents must be voiced after nasals-change sounds.

Markedness constraints either demands unmarked configuration, such as ONSET, and PEAK or prohibited marked configurations such as NOCODA and COMPLEX as cited by Archangeli, (1999:536).

Prince and Smolensky, (2004:106);

- syllables begin with a consonant;
- Syllables have one vowel;
- Syllables end with a vowel;
- Syllables have at most one consonant at an edge;
- Syllables are composed of consonants and vowels.

TABLEAU 1MARKEDNESS CONSTRAINT

Name	Statements	Other names
NC	Syllables must have nuclei.	
−CODA	Syllables must have no codas.	NOCODA
ONS	Syllables must have onsets.	ONSET
HNUC	A nuclear segment must be more sonorous than another (from "harmonic nucleus").	
*COMPLEX	A syllable must be V, CV or VC.	
CODACOND	Coda consonants cannot have place features that are not shared by an onset consonant.	CODACONDITION
NONFINALITY	A word-final syllable (or foot) must not bear stress.	NONFIN
FTBIN	A foot must be two syllables (or moras).	FOOTBINARITY
PK-PROM	Light syllables must not be stressed.	PEAK PROMINENCE
WSP	Heavy syllables must be stressed (from "weight-to-stress principle").	WEIGHT-TO-STRESS

(Prince and Smolensky, 2004)

2.3.1.2.2. Faithfulness Constraint

According to, McCarthy (2002: 27), Faithfulness constraint is the observed surface form (output) matches the underling or lexical form (input) in some particular way. Constraint requires identity between input and output. According to Kager, (2004:10), faithfulness constraint requires that outputs preserve the properties of the basic (lexical) forms requiring some kind of similarity between the output and its input.

Kager (2004:10)'s faithfulness constraints;

- The output must present all segments present in the input; *MAX –no deletion*[3]
- Output segments must have counterpart in the input; *DEP -no* epenthesis[4]
- The output must preserve the linear order of segments in the input-*no metathesis*[5]
- Output segments and input segments must share values for [voice]

MAX and DEP replaces PARSE and FILL which stated; underlying segment must be parsed into syllable structure and syllable position must be filled with underlying segments respectively. PARSE and FILL declare the perfectly well- formed syllable structure are those in which input segments are in one-to- one correspondence with syllable position. When faithfulness dominates both markedness constraints, the primary of respecting the input will be to force violation of both ONS and – CODA. So, the string /V/ will be parsed as onset less syllable *ONS and the string /CVC/ will be parsed as a closed syllable – CODA. If a member of faithfulness family is dominated by one of the members of markedness constraints, a more violent parsing of the input will result as described by Prince and Smolensky (2004:106).

ONS ≫FAITH, (Onset dominates Faithfulness)

2.3.1.3.Evaluator (EVAL)

According to McCarthy, (2002:6-7), given two candidates, "A" and "B", "A" is better, or more "harmonic", than "B" on a constraint if "A" incurs fewer violations than B. Candidate A is more harmonic than "B" on an entire constraint hierarchy if "A" incurs fewer violations of the highest-ranked constraint distinguishing "A" and "B". "A" is "optimal" in its candidate set if it is better on the constraint hierarchy than all other candidates. For example, given the constraints C_1, C_2, $C_3$where C_1 dominates C_2, which dominates C_3 ($C_1 \gg C_2 \gg C_3$), "A" is optimal if it does better than B on the highest-ranking constraint which assigns them a different number of violations. If "A" and "B" tie on C_1, but "A" does better than "B" on C_2, "A" is optimal, even if "A" has however many more violations of C_3 than "B" does.

[3] Elision, omission of one or more sound in a word or phrase
[4]Addition of one or more sounds to a word, especially to the interior of a word.
[5]The transposition of sounds or syllables in a word or words in a sentence.

This comparison is often illustrated with a tableau. The pointing finger[6] marks the optimal candidate, and each cell displays an asterisk for each violation for a given candidate and constraint. Once a candidate does worse than another candidate on the highest- ranking constraint distinguishing them, it incurs a fatal violation (marked in the tableau by an exclamation mark and by shaded cells for the lower-ranked constraints). Once a candidate incurs a fatal violation, it cannot be optimal, even if it outperforms the other candidates on the rest of CON.

TABLEAU 2EVALUATOR (EVAL)

Input	CONSTRAINT 1	CONSTRAINT 2	CONSTRAINT 3
a. ☞ Candidate A	*	*	***
b. Candidate B	*	**!	

(McCarthy, 2002)

2.4.The Syllable and the Syllable Structure

2.4.1. Definition of Syllable

Different scholars define syllable. For instance, according to Goldsmith, (2011:164), syllable is one of the oldest constructs in the study of language that most studies of phonology have found a place for and it plays an important role in the expression of statements of phonotactics, the principle of language that describes which strings of basic sounds are found. The syllable study in current periods has been an integral part of the development of theories of phonological representation of the theory of rules, constraints, and their interactions. But the study of the syllable has moved in fits and starts, with movement in several directions, all at the same time.

According to Crystal, (2008:467), the syllable is an uninterrupted unit of utterances that is typically larger than a single sound and smaller or equal to word. Words can be divided into syllables that are referred to as syllabification or syllabication which helps to distinguish between monosyllabic, disyllabic, trisyllabic and polysyllabic word. According to Roach (2009:64), syllable can be strong or weak in which strong syllables are relatively longer, stronger, and different in quality as they appear in stressed position of a word whereas weak syllables are never stressed.

[6] The symbol is a typographic mark☞ to show index, or first

2.4.2. Function of Syllable

As a phonological unit the syllable performs several functions that may be combined into the main three: constitutive, distinctive and identificatory.

2.4.2.1.The Constitutive Function

The constitutive function of the syllable relates different aspects of phonological analysis. It plays important role in formulating those conditions on sound combination and distribution which are called phonotactic constraints. Indeed, syllable structure facilitates the formulation of phonotactic constraints of the sort of sounds /k/ and /n/ that cannot combine at the beginning of words as pointed by Benyoucef, (2019:423). Syllable has two main constituents: the onset and the rhyme. Each of them performs important function with the syllable and operates quite independently of each other. Onset is fundamental to alliteration, a literary technique where in words begin with similar sounds, as in ‘cash’ and ‘carry’. Rhyme consists of nucleus and coda. The rhyme plays important function in the placement of word stress, which is significant in many languages such as Arabic as described by Mohmoud (2012:1).

2.4.2.2.The Distinctive Function

The distinctive feature is the most basic unit of phonological structure which grouped into categories according to a set of phonemes in language of segments they describe. There are different features of distinctive, namely: major class features, laryngeal features, manner features, place features and voice space features as described by Gussenhoven and Jacobs, (2017:64-65).

According to, Gussenhoven and Jacobs, (2017:66-68), there are three major class features. The first one is [+/- consonantal] in which [+cons] their structure is in the vocal tract and those are plosives, affricates, fricatives, nasals, lateral and [***r***] while [-cons] are vowels, glides like [***j, ɥ, w***] and because their structure is in the larynx rather than the vocal tract [***h, ɦ ʔ***]. Based on the division of the consonantal features of classification Mecha Oromo includes [+cons] /***p', b, t, t' d, ɗ, k, k', g, f, s, ʃ, tʃ', tʃ, dʒ, m, n, ɲ, l. r***/ and [-cons] are vowels, ***/a, a: e, e:,i, i:, o,o:,u, u:/*** , the semi vowels,/***w, j***/ and the glottal sounds /***h, ʔ/.***

The second one is [+/- sonorant] in which [+son] are produced within a construction in the vocal tracts that allows the air pressure while [-son] segments have an oral construction which cause increases of the air pressure. The third one is [+/-approximant] in which [+approx] are segments which have a construction in the vocal tract that allows free (frictionless) escape of air while [-approx] are not. The [+son] in Mecha Oromo includes all vowels ***/a, a: e, e:, i, i:, o, o:, u, u:/*** the nasal / ***m, n, ɲ***/, liquid / ***l, r***/ and the glide /***w, j***/. The [-son] sounds includes stop / ***p', b, t', t, d, ɗ, k, k', g,*** /,fricative /***f, s, ʃ, h*** /, affricative phonemes /***tʃ', tʃ, dʒ***/ and the glottal /***h, ʔ/.***

The laryngeal features are used to specify the glottal states of sounds. [+/-voice] indicates the vibration of the vocal folds occurs with the articulation of the segments. [+/- Spread glottis] indicates the aspiration of segments and [+/- constricted glottis] indicates the degree of closure of the glottis as cited by Gussenhoven and Jacobs (2017:69-70).

The manner features are used to specify the manner of articulation. [+/- constituent] describes the passage of the air through the vocal tracts in which segments are produced by allowing air to pass through the vocal tract or blocking the air flow, [+/- nasal] describes the position the velum in which segments are produced by raising or lowering the velum, [+/- strident] is caused by high energy of unusual friction that is noisier than usual, [+/- lateral] describes the shape and position of the tongue with respect to the oral tract in which segments are produced at the center of the tongue rises to contact the roof of the mouth or blocking air flowing centrally through the oral tract and [+/- delayed released] used to distinguishes stops from affricates. Gussenhoven and Jacobs, (2017:70-71). The [+cons] sounds include in Mecha Oromo are***/f, s, h, r, w***/ and all vowels and the rest consonants are [-cons]. The [+ nasal] sounds are /***m, n, ɲ***/, the [+strident] sounds are /***f, s, ʃ, tʃ, dʒ***/, [+lateral] sound is /***l***/ and [+delayed] sounds are ***/tʃ',tʃ, dʒ***/

The place features are used to specify the place of articulation which includes: - [labial] which is articulated with lip, [coronal] with the tip and/or blade of tongue, [dorsal] articulated by the dorsum or the back of the tongue, [radical] sounds are articulated with the roof of the tongue and [glottal] are sounds that do not involves the tongue at all (Gussenhoven and Jacobs, 2017:75-79). The coronal sounds in Mecha Oromo includes [+coronal] /***t, t', d, ɗ, s, ʃ, tʃ', tʃ, dʒ, n, ɲ, l, r, j***/ and the vowels [+coronal] are***/ ii:, u u:***/. The dorsal sounds are [+dorsal] including / ***k, k', g***/. The voice space features are distinguished by [+/-back] back vowels, [+/- high] close vowels, [+/-low], low vowels and [+/- tense] tense vowels (Gussenhoven and Jacobs, 2017:79).

Table 4 Consonant phonemes and their distinctive features in Mecha Oromo

Consonant	Major class		Manner					Place				Voice
	[+/-cons]	[+/-son]	[+/-cons]	[+/nasal]	[+/-strid]	[+/delay]	[+/- lat]	[+/- lab]	[+/-cor]	[+/-dor]	[+/-glott]	[+/-voice]
p′	+	-	-	-	-	-	-	+	-	-	-	-
b	+	-	-	-	-	-	-	+	-	-	-	+
f	+	-	+	-	+	-	-	+	-	-	-	-
s	+	-	+	-	+	-	-	-	+	-	-	-
ʃ	+	-	-	-	+	-	-	-	+	-	-	-
tʃ′	+	-	-	-	-	+	-	-	+	-	-	-
tʃ	+	-	-	-	+	+	-	-	+	-	-	-
dʒ	+	-	-	-	+	+	-	-	+	-	-	-
t	+	-	-	-	-	-	-	-	+	-	-	-
t′	+	-	-	-	-	-	-	-	+	-	-	-
d	+	-	-	-	-	-	-	-	+	-	-	+
ɗ	+	-	-	-	-	-	-	-	+	-	-	+
k	+	-	-	-	-	-	-	-	-	+	-	-
k′	+	-	-	-	-	-	-	-	-	+	-	-
g	+	-	-	-	-	-	-	-	-	+	-	+
h	-	-	+	-	-	-	-	-	-	-	+	-
ʔ	-	-	-	-	-	-	-	-	-	-	+	-
m	+	+	-	+	-	-	-	+	-	-	-	+
n	+	+	-	+	-	-	-	-	+	-	-	+
ɲ	+	+	-	+	-	-	-	-	+	-	-	+
l	+	+	-	-	-	-	+	-	+	-	-	+
r	+	+	+	-	-	-	-	-	+	-	-	+
w	-	+	+	-	-	-	-	-	-	-	-	+
j	-	+	-	-	-	-	-	-	+	-	-	+

(Tariku 2019)

Table 5 Distinctive features of vowel Consonant phonemes

Vowels	[+/-round]	[+/-high]	[+/-back]	[+/-low]	[+/-long]
i	-	+	-	-	-
i:	-	+	-	-	+
e	-	-	-	+	-
e:	-	-	-	+	+
ɑ	-	-	-	+	-
ɑ:	-	-	-	+	+
u	+	+	+	-	-
u:	+	+	+	-	+
o	+	-	+	-	-
o:	+	-	+	-	+

(Tariku, 2019)

2.4.2.3.The Identificatory Function

According to Gussenhoven and Jacobs, (2017:7), the identificatory function of the syllable is conditioned by the hearer's perception of syllables as entire phonetic units with their concrete allophones and syllabic boundaries. In fact, psycholinguists have shown that during speech perception, listeners do hear strings of sounds in side words as possible words, but this happens very briefly and below our awareness.

Word strings across word boundaries may also 'activate' words that were never said, such as *income in mastering compassion (...muster income passion),* but because of the particular ways in which sounds combine into words, cross-words strings of sounds are less likely constitute words. Indeed, languages vary in the way their speakers perceive word boundaries depending on the phonological symmetries that apply to word boundaries.

2.5.Types of Syllables

Syllable type also called syllable are common configuration of letter sound. According to Knight-McKenna (2008:19), there are six types of syllables.

2.5.1. Closed Syllable

Closed syllable has a single vowel followed by one or more consonants. The vowel is closed in by the consonant and generally short. Most of three letter words (consonant- vowel-consonant) are closed syllable).

e.g., English word “cat” CVC

There are also more than one consonant following the vowel.

e.g., “melt” CVCC

For need not be an initial consonant

e.g., “up”, VC “on”, VC

Many long vowels are made up of two or three closed syllables

e.g., “pic/nick, CVC.CVC

2.5.2. Open Syllable

Open syllable end with single vowel is usually long. The vowel is not closed in by consonant, it is left open. Several common single words are open syllables.

e.g., English words like, “so”, “my”, “be”, “to”, etc.

2.5.3. Vowel Consonant -Silent e

A syllable with single vowel followed by a consonant, then the vowel e. The first vowel is usually long and the final e in the syllable is silent.

e.g. In English word “bone”, “tone”, “hole”

2.5.4. Vowel Team Syllable

Vowel team syllable has two adjacent vowels. This type of syllable has two major categories. Two vowels representing the long vowel and of the first vowel.
According to Knight-McKenna (2008:19) There is a saying on this concept, "when two vowels go walking, the first does the talking."

e.g., English word, "rain" CV:C
Two vowels represent a variant sound.

2.5.5. R- Controlled syllable

R-Controlled syllables have vowel sounds that are neither long nor short. The letter *r* changes the vowel sound. This is when the vowels are followed by *r*.

e.g., English word, "dollar", "girl", "market", "car"

2.5.6. Final stable syllable

Final stable syllables are found in multisyllabic words and have several different configurations. One set includes syllable that ends with: -consonant -le (Knight-McKenna, 2008:19):

e.g., English word, /table/ ta-ble CV-CV-e

/purple/ pur-ple CV-CV-consonant-al

e.g., English word, /global/ glob-al CCVC-al

/dental/ den-tal CVC-CVC

dent-al CVCC-al

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the research methodology dealing with design, population of the study, sampling techniques, methods of data collection, procedures of data collection, and data analysis procedures.

3.1 Research design

This study presents an analysis of syllable structures of Mecha *Oromo* using Optimality Theory. In this study, a descriptive qualitative research design was used in order to collect the desired data that answers the research questions. In this study primary data were collected from field work which is the main data collection instrument. Primary data helps the researcher to collect authentic data in the study area.

According Creswell (1994), qualitative research is purposefully used for selecting informants and information (people, documents or visual materials) that will be the best answers to the research questions. Such a descriptive method is used to get certain information such as linguistic data by describing, interpreting and explaining them in their real contexts.

3.2 Study population

The target population of this study comprises the native speakers of Mecha Oromo who live in Nekemt town and surrounding areas. From the study population, twelve native speakers including seven females and five males above age of 25 years old were purposefully selected to participate in study for elicitation session. The researcher is also a native speaker of the Mecha Oromo dialect through whom the introspective method was along with elicitation method. Various previous works of scholars on Afaan Oromo phonology were also consulted to have the overall understanding of the study.

In this study, non-probability, purposive sampling technique was used to select relevant data for the study and to organize the information effectively as well as to select relevant participants who are native speakers of the Mecha Oromo.

3.3 Sampling technique

The researcher used purposive sampling technique to collect the data. Hence, twelve native speakers comprising seven females and five males above age of 25 years old purposefully participated in study for elicitation session and wordlist survey. The informants of the study were literate native speakers who were purposively selected based on the researcher's personal judgment through her introspective approach.

3.4 Data Collection tools

In this study, three data gathering techniques were used. Primary data were collected from the field using elicitation, wordlist and linguistic judgement. Through elicitation and wordlist survey, relevant linguistic data were collected through audio-recorder along with intensive note-taking. Linguistic judgment was also incorporated to cross-check the accuracy and relevance of the data based on certain principles. By all these methods of data collection, more than 200 basic words were collected and organized for the analysis.

3.4.1 Elicitation

An elicitation method was also used to collect relevant information from the twelve participants of the study. During elicitation session, the researcher used a set of possible questions, and a list of words in the source language guided by introspection.

The first elicitation session was conducted in April from 12 to 20/ April 2021. This helped the researcher to have a preliminary data on the phonology of Afaan Oromo. The second elicitation session was conducted in May from 15 to 30/ 2021 to check the data quality for analysis. Finally, all the relevant phonological data were collected, organized, recorded, transcribed and analyzed.

3.4.2 Wordlist

For this study, the researcher collected a list of more than 200 basic words that deals with identifying the syllable structures of Mecha Oromo. The collection of wordlist goes with several fieldworks. During collecting and analyzing a word list, the researcher used some of the following principles proposed by Chelliah (2013:68):

_ Field notes in notebooks where words were first written down in IPA
_ Pictures of speakers who provided the data with other relevant metadata (e.g., age, gender, dialect, proficiency)
_ Scans of field notes
_ Audio and video recordings of that field session
_ An elicitation schedule, with selected words for recording words in controlled phonetic context
_ Recordings of words in context
_ Output of a speech analysis program on these data
_ PowerPoint presentation on these data for a conference
_ Related articles or data from related languages with cognates
_ Digital backup files

Based on the above principles, the word lists were used to collect relevant data that helped the researcher to describe Mecha Oromo syllable structures and to analyze them using the optimality theory of markedness constraint and faithfulness constraint components.

3.4.3 Linguistic Judgment

Linguistic judgement is used as a data collection tool in this study. This quite differs from discipline to discipline.

According to Schütze and Sprouse, (2013:30), there are five major respects in which typical informal linguistic judgment gathering tends to differ from standard practice in psychology. It typically involves:

1) relatively few speakers (fewer than ten),
2) linguists themselves as the participants,

3) relatively impoverished response options (such as just “acceptable,” “unacceptable,” and perhaps “marginal”),
4) relatively few tokens of the structures of interest, and
5) relatively unsystematic data analysis.

Among the above principles, the first two principles ones were employed by the present researcher.

CHAPTER FOUR

THE SYLLABLE STRUCTURE OF MECHA OROMO

4.1 Introduction

This chapter mainly focuses on detailed analysis of syllable types and possible distribution of syllable structure of Afaan Oromo, particularly Mecha Oromo. Arguments of previous works on syllable structure of the Mecha Oromo are brought together to propose a coherent analysis of syllable structure and constraint set based analysis of syllable structure of Mecha Oromo is described. This chapter is organized with different section including the syllable types and their distribution, word structure and stress pattern are described

4.2 The Syllable structure in Mecha Oromo

In this section, the basic syllable types in Mecha Oromo are presented. Under this topic the internal structure of light and heavy types of syllables are described. Additionally, the possible distribution of the structure of syllables is presented. Finally, the restricted syllable structures in Mecha Oromo are described.

4.2.1 Basic Syllable Types in Mecha Oromo

Mecha Oromo has four basic syllable types like many other dialects in Afaan Oromo as described by previous researchers (Wako, 1981; Habte, 2003; Dejene, 2010 and Jamaica, 2011)[7].

i. CV Light open syllable

ii. CV: Heavy open syllable

iii. CVC Light closed syllable

iv. CV: C Heavy closed syllable

A shown in the above syllable structures , syllables of the form CV or CVC with one vowel in the nucleus coda are called light syllables whereas the syllable CV: or CV:C with long vowels in

[7] Contrary to these scholars and the present one, Melaku (1980:23) concluded that V, VC, CV and CV are the only syllables in Oromo where the first two syllables are vowel initial syllables.

the nucleus is called a heavy syllable (Crystal, 2008:520). Similarly, a syllable that ends with a vowel is an open syllable whereas that ends with no vowel is called closed syllable.

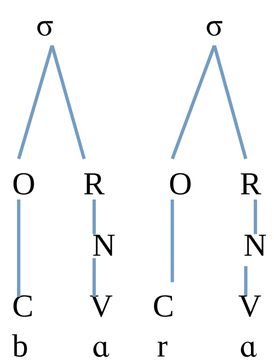
The internal structure of syllable is divided into onset represented by consonant C preceding rhyme which is subdivided into nucleus and coda. The shape of the syllable entirely indicates both onset and nucleus are obligatory while coda is optional. Onset is inviolable because the glottal stop /ʔ/ always is inserted to form an onset by filling in the gap when words begin phonemically with a vowel. CV: C is the maximum syllable structure where (C) is a consonant and (V :) is a long vowel.

4.2.1.1 The CV syllable structure

This is the syllable structure that is stated as the onset syllable. In Mecha Oromo, the CV syllable structure has one consonant phoneme and one vowel element. The CV syllable structures occur in disyllabic, trisyllabic and quadrisyllabic words except monosyllabic words both in initial, medial and final position as described in figure below.

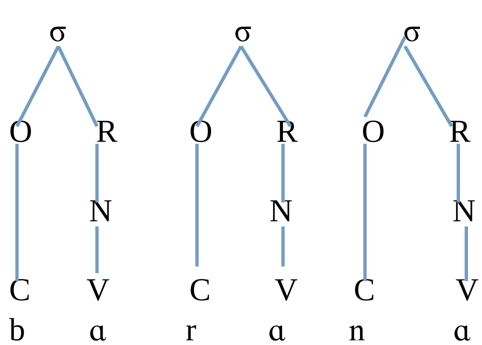
a). CV.CV /bɑ. rɑ/ ‘year’ ‘era’

a)



b). CV.CV.CV /bɑ.rɑ.nɑ/ ‘this year’

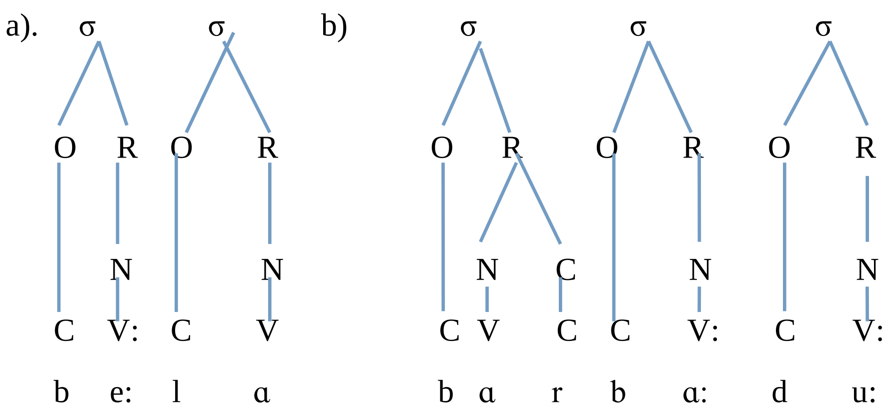
b)



4.2.1.2 The CV: Syllable Structure

The CV: syllable types have one consonant followed by two vowels. More than two vowels and diphthongs are not allowed in the language. The CV: syllable structure can occur in disyllabic, trisyllabic and quadrisyllabic words in the language.

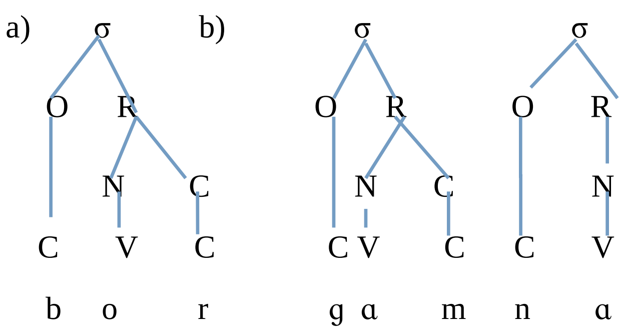
a). CV:.CV/be:.lɑ/ ‘hunger’ b). CVC.CV:.CV: /bɑr.bɑː.duː/ ‘finds’



4.2.1.3 The CVC Syllable Structure

The CVC syllable structure is a syllable which consists Onset, Nucleus and Coda. In Mecha dialect, the CVC syllable structure can occur in monosyllabic, disyllabic, trisyllabic and quadrisyllabic words both in word initial, medial and final position.

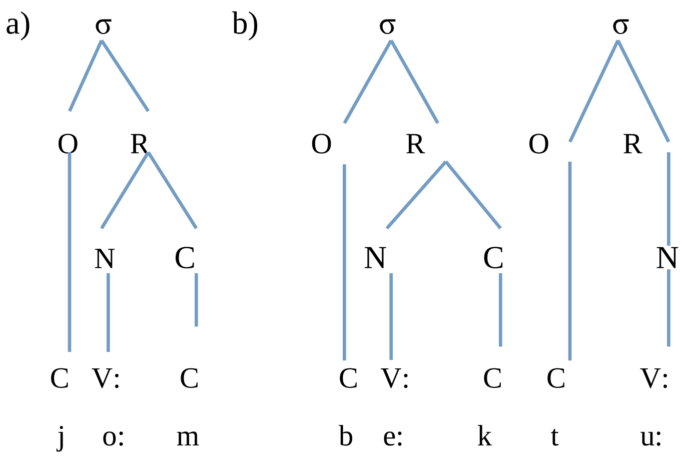
a). CVC/bor/‘tomorrow’ b) CVC.CV /gɑm.nɑ/‘wise’



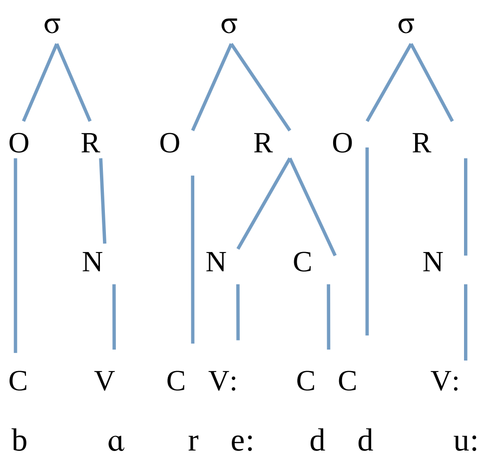
4.2.1.4 The CV: C Syllable Structure

The CV:C syllable structure consists onset, nucleus (long vowel) and coda. This syllable structure can occur in monosyllabic, disyllabic and trisyllabic words in both word initial and medial positions.

a) CV:C /joːm/ 'when' b). CV: C.CV /beːk.tuː/ 'intelligent (for females)'



c). CV.CV:C.CV:/bɑ.reːd.duː/ 'beautiful'



4.3 The Distribution of Basic Syllable type in Mecha Oromo

All those four types of syllables can occur word initially, word medially and word finally. According to Habte (2003:20), the segments /***n, l, r. m, s, f*** / occupies the coda position when a word ends with a closed syllable, but in the words of initial and medial of the coda of closed syllable any consonant can be occur except /***h***/ and /***ʔ***/.

Wako (1981:39), asserted that the nasal palatal consonant phoneme /***ɲ***/ and the ejective bilabial consonant phoneme /***p′***/ do not occur before the vowel /***i***/. The present study contends that the phonemes /***ɲ***/ and /***p′***/ can occur before the long vowel /***i:*** / but do not occur before short vowel /***i***/ in a syllable as in the case of the following examples.

/ɲ/	/sɑ.ɲi: /	'gene', 'species', 'kind'
/p′/	/hɑ.p′i:/	'light', 'thin'
	/k′o.p′i:/	'occasion, preparation'

Wako also claimed that the consonant phonemes /***b, t, k, s, tʃ′, ɲ, w***/ do not occur after the vowel /***e***/. However, the phonemes / ***b, t,k***/ can occur after the vowel phoneme /***e***/ in words of syllables rarely in the dialect.

/b/	/ʔe:b.bɑ/	'blessing'
	/ʔeb.lɑ/	'April'
/t/	/sɑd.det/	'eight'
/k/	/ʔek.ʔe.rɑ:/	'Apparition, Ghost'

Table 6 Distribution of Basic Syllable Types

Type	Initial words	Medial words	Final words
CV	/**ʔɑ**.nɑ/ ‘me’ /**bɑ**.rɑ/ ‘year’ ‘era’ /**bɑ:**.tʃ′o:/ ‘joke’ /**bɑ**.du:/ ‘disappear’ /**bɑ**.hɑ/ ‘east’ /**bi**.do:/‘sheep’ /**tʃ′ɑ**.ki:/ ‘hoe’ /**fɑ**.go:/ ‘distant’ , ‘far’ /**fu**.ɲo:/‘rope’ /**gɑ**.bɑ:/ ‘market’ /**gu**.tʃ′ɑ/ ‘torch’ /**hɑ**.k′ɑ/ ‘justice’ /**ko**.p′e:/ ‘shoes’ /**lɑ**.fɑ/ ‘earth’ /**mɑ**.nɑ/ ‘house’ /**nɑ**.mɑ/ ‘man’ /**sɑ**.re:/ ‘dog’	/ʔɑ.**mɑ**.nu:/ ‘believe’ /bɑr.**tʃ′u**.mɑ/ ‘seat’ ,’chair’ /bo.**bɑ**.ʔɑ/ ‘fuel’, ‘gasoline’ /tʃ′ɑ.**lɑ.**lu:/ ‘refine’, ‘screening’ /dɑ.**ɗɑ**.bu:/ ‘tired’ /dɑ.**fi.**no/ ‘monday’ /gɑ.**bɑ**.te:/ ‘board’ /gɑ.**nɑ**.mɑ/ ‘morning’ /gɑl.**gɑ**.lɑ/ ‘night’ /dʒɑl.**k′ɑ**.bɑ/ ‘beginning’, ‘first’	/ba: .**lɑ**/ ‘leaf’ /be:.**lɑ**/ ‘hunger’ ,’famine’ /dïr.**sɑ**/ ‘husband’ /gɑ.bɑ.**te**/ ‘board’ /gɑ.nɑ.**mɑ**/ ‘morning’ /gɑl.gɑ.**lɑ**/ ‘night’ /dʒɑl.k′ɑ.**bɑ**/ ‘beginning’,
CV:	/**bɑ:**lɑ/ ‘leaf’ /**be:**lɑ/ ‘hunger’ /**tʃ′ɑ**:. bi:/ ‘bowl’ /**dɑ**:.ku:/ ‘flour’ /**fɑ**:.ji.dɑ:/ ‘advantage’ /l**ɑ**:.fɑ:/ ‘smooth’	/bɑr.**bɑ**:.du:/ ‘find’ /tʃ′ɑr.**rɑ**:.k′ɑ/ ‘effort’ /fɑ.**ke**:.ɲɑ/ ‘figurative’	/di.**ke**:/ ‘compost’ /lo:.**gi**:/ ‘bias’, discrimination’ /go:.**tɑ**/ ‘hero’
CVC	/**ʔɑr**.bɑ/ ‘elephant’ /**bɑr**.tʃ′u.mɑ/ ‘seat’ ,‘chair’ /**dʒɑl**.k′ɑ.bɑ/‘beginning’ ‘first’ /**gɑl**.mɑ/ ‘hall’ ‘achieve’ /**hɑr**.kɑ/ ‘hand’ /**mor**.mɑ/ ‘neck’	/do.**gog**.go.rɑ/ ‘error’, ‘wrong’ /dor.**gom**.mi:/ ‘competition’ /gɑr.**gɑr**.sɑ./ ‘help’ /go.**rom**.sɑ/ ‘heifer’ /k′ul.**k′ul**.lu:/ ‘holy’, ‘clean’ /nɑ.**mum**.mɑ:/‘humanities’, ‘personality’	/ʔɑ.**kɑs**/ ‘so’ /ʔɑ.**nɑn**/ ‘milk’ /hɑl.**kɑn**/ ‘night’ /sɑd.**de**t/ ‘eight’

CV:C	/**be**ː**k**.tuː/ 'intelligent' /**be**ː**k**.siː.sɑ/'advertisement /**tʃ'ɑ**ː**s**.lu.gɑ/ 'grammar' /**fo**ː**n**/ 'meat' /**jo**ː**m**/ 'when' /**lo**ː**n**/ 'cattle'	/ʔɑb.**bo**ː**m**.sɑː/ 'attribute' /bɑ.**re**ː**d**.duː/ 'beautiful'	/bi.**ʃɑːn**/ 'water' /ʔɑn.**nɑːn**/ 'milk'

(Wako, 1981)

4.4 Restricted Syllable structure in Mecha Oromo

4.4.1 Vowel –initial syllable structure

The phonetic realization of onset less syllable shows that vowels are variably preceded by an epenthetic glottal stop /**ʔ**/ which constitute a syllable onset.

/adu/ [ʔɑdu] 'sun'

/aːnnan/ [ʔɑːnnɑn] 'milk'

/ilma/ [ʔilmɑ] 'son'

This insertion is more likely to happen in utterance initial or in most final position. This might suggest that the preferred syllable structure requires onsets.

4.4.2 Syllable with Consonant Cluster in Word Initial and Word Final

In Afaan Oromo consonant cluster is forbidden both in word initial and final, but allowed in word medial. Some of previous works like (Wako, 1981:34; Habte, 2003:19 and Tariku, 2019:21), on syllable structure of Afaan Oromo language claimed that complex consonant in onset position and coda position is restricted but not more than two different consonant phonemes can occur to form clusters in word medial. *COMPLEX^{ONS} and *COMPLEX^{COD} inviolable in phonology of Mecha Oromo.

The consonant cluster in word medial can be split into syllable segments and the first phoneme of consonant cluster can be the coda of the first segment and the second phoneme of the consonant cluster can be the onset of the second segment in a syllable. Some of the consonant cluster in word medial and the syllabification of such words into syllable segments are shown as follows.

Word medial cluster	**Syllable structure**	**Syllable shape**	**Gloss**
/ʔarɑ**bs**ɑ/	/ʔɑ.rɑ**b.s**ɑ/	CV.CVC.CV	'mock'
/do**k'n**ɑ/	/do**k'.n**ɑ/	CVC.CV	'greedy'
/dʒi**lb**ɑ/	/dʒi**l.b**ɑ/	CVC.CV	'knee'
/gɑ**mn**ɑ/	/gɑ**m**.**n**ɑ/	CVC.CV	'subtle', 'wise'
/gɑ**rg**ɑ**rs**ɑ/	/gɑ**r.g**ɑ**r.s**ɑ/	CVC.CVC.CV	'help'
/hɑ**rk**ɑ/	/hɑ**r**.**k**ɑ/	CVC.CV	'hand'
/ko**lf**ɑ/	/ko**l.f**ɑ/	CVC.CV	'laugh'

4.5 Word Structure in Mecha Oromo

In words of Afaan Oromo, monosyllabic, disyllabic, trisyllabic and quadrisyllabic are found but majority of the words in the language are disyllabic and trisyllabic.

4.5.1 Mono Syllabic Words

Mono syllabic words are words containing a single syllable. The analysis of the syllable structure of monosyllabic words in Mecha Oromo is shown in table 7. In the language, mostly CVC and CV:C syllable structures occurs in monosyllabic words.

Table 7 Syllable Structure of Monosyllabic Words

Syllable type	Lexical item	Gloss
CVC	/ʔɑs/	'here'
CVC	/bor/	'tomorrow'
CVC	/ʔol/	'above'
CVC	/kɑm/	'which'
CV:C	/fo:n/	'meat'
CV:C	/jo:m /	'when'

4.5.2 Disyllabic Words

Table 8 illustrates disyllabic words. In Mecha Oromo, majority of words are disyllabic structure. All the basic types of syllable structures; CV, CV:, CVC and CV:C can occur possibly in disyllabic words in the language.

Table 8 Syllable Structure of Disyllabic Words

Syllable type	Lexical item	Gloss
CV.CV	/ʔɑ.nɑ/	‘I’
CV.CV:	/ʔɑ.nɑ:/	‘district’
CV:.CV	/ʔɑ:rɑ/	‘smoke’
CV:.CV:	/bɑ:du:/	‘cheese’
CVC.CV	/mor.mɑ/	‘neck’
CV:C.CV	/be:k.tu/	‘intelligent, wise (female)
CVC.CVC	/hɑl.kɑn/	‘night’

4.5.3 Trisyllabic Words

Trisyllabic words are words with three syllables. This study identified that like disyllabic words, trisyllabic word structure exists mostly in Mecha Oromo. CV, CV: CVC and CV: C were found to be common syllable structures observed in Mecha Oromo. Table 9 shows the different syllable structures observed for trisyllabic words in the language.

Table 9 Syllable Structure of Trisyllabic Words

Syllable type	Lexical item	Gloss
CV.CV.CV	/gɑ.nɑ.mɑ/	‘morning’
CV.CV.CV:	/tʃ ′ɑ.fɑ.k′uː/	‘crush’
CV:.CV.CV:	/bɑ:di.jɑ:/	‘rural’
CVC.CV.CV	/gɑl.gɑ.lɑ/	‘evening’
CVC.CV:.CV	/bɑr.no:.tɑ/	‘education’
CVC.CVC.CV:	/ʔɑd.dur.re:/	‘cat’
CVC.CV:.CV:	/ʔɑb. dɑ:ri:/	‘spiritual area’
CVC.CV.CV:	/ɗɑk′.ɗɑ.k′i:	‘swamp’
CV:.CVC.CV	/be:.kum.sɑ/	‘ knowledge’
CV:C.CV.CV	/fuːl.du.rɑ/	‘forward’, ‘front’,future’

4.5.4 Quadrisyllabic Words

Quadrisyllabic words are words with four syllables. This study asserted that quadrisyllabic word structure exists rarely in Mecha Oromo. The syllable structures; CV, CV: and CVC are common syllable structures occurs in quadrisyllabic words in the Mecha Oromo. Table 10 exemplifies different syllable structure of quadrisyllabic words in Mecha Oromo.

Table 10 Syllable Structure of Quadisyllabic Words

Syllable type	Lexical item	Gloss
CV.CV:.CV.CV	/ʔɑb.bo:mɑ.mɑː/	'obedient'
CV.CV:.CV.CV	/bɑ.re:di.nɑ/	'beauty'
CVC.CV:.CV.CV:	/bɑr.bɑ:tʃi.sɑː/	'essential', 'important'
CV.CVC.CV.CV	/do. gog.go. rɑ/	'error', 'wrong'

4.6 Stress Pattern in Mecha Oromo

Stress is the greater prominence that a given syllable receives over the rest of the syllable in domain. This domain is the prosodic words in the case of word -level stress. According to Roach (2000:85), stress can be studied from its production and perception. The production of the syllable implies a greater muscular energy than the production of unstressed syllable. The perception implies that the stressed syllables are prominent (loudness, length, pitch and quality). There are three possibilities of stress in a word namely; -

- ✓ Primary stress, which is characterized by prominence and basically by a rise fall tone.
- ✓ Secondary stress; - is weaker than primary but stronger than unstressed syllable.
- ✓ Unstressed syllable; - is the absence of any prominence and normally have the short-closed vowels ***/i/*** or ***/u***/ and schwa.

(a) Word stress is common in Afaan Oromo that depends on prominent of sounds. In Mecha Oromo, in word structure of CV.CV and CV: .CV the first syllable of the word is stressed while in word structure of CV.CV: and CV: .CV: the second syllable of the word is stressed. The stressed syllable is shown in the following examples:

CV.CV (LL)

/'k′i.t′ɑ/ ‘direction’, ‘equal’
/'lɑ. gɑ / ‘river’
/'lɑ.fɑ/ ‘earth
/'bo.nɑ/ ‘summer’
/ 'lo.lɑ/ ‘battle, ‘fight’
/'k′o.rɑ/ ‘question’

CV:CV: (HH)

/'mɑ.lɑ/ ‘method’
/lɑ:'fɑ:/ ‘smooth’
/bo:.'nɑ:/ ‘proud’
/so:.'ru:/ ‘to feed’
/ k′o:.'rɑ: / ‘dry’
/tʃ′ɑ:'lɑ:/ ‘better’

CV. CV: (LH)

/lo.'lɑ:/ ‘erosion, ‘flood’
/bɑ.'dɑ:/ ‘bad’
/bɑ.'lɑ:/ ‘accident’, ‘crisis’
/gu.'bɑ:/ ‘hot’, ‘fever’
/ho.'ɗu:/ ‘suck’
/ k′ɑ.'rɑ: / ‘path’, road’
/ k′u.'fɑ: / ‘cough’

/mɑ.'lɑ:/ ‘pus’
/ mɑ.'dɑ: / ‘wound’
/ so. 'dɑ:/ ‘fear’, anxiety’
/so.'ru:/ ‘to clean’

CV:.CV, (HL)

/'bɑ:.lɑ/ ‘leaf’
/'k′u:.fɑ/ ‘satisfaction’

(b). In consonant clusters of word medial, the first syllable of a word is stressed if the second syllable of the word ends with short vowel but the second syllable is stressed if it ends with long vowel.

CVC.CV (LL)

/'gɑd.dɑ/ ‘sad’
/'mɑd.dɑ/ ‘origin’, ‘source’
/'mor.mɑ/ ‘neck’
/'k′ɑr.rɑ / ‘door’, ‘gate’

CVC.CV: (LH)

/bɑd.'dɑ:/ ‘highlands’
/tʃ′ɑl.'lɑ: / ‘cash’, ‘cereal’
/gub.'bɑ:/ ‘over’, ‘up’
/hoɗ.'ɗu:/ ‘sew’
/ dʒɑl. 'lɑ: / ‘bend’
/ k′it′.'t′ɑ:/ ‘bread’
/k′or.'rɑ:/ ‘cold
/mor.'mu: / ‘argue’, ‘contend’
/ sod.'dɑ: / ‘brother -in -law’

c) In trisyllabic words if the last syllable ends with short vowel the second syllable is stressed. While if the syllable ends with long vowel in trisyllabic words the final syllable is stressed.

CV. CV.CV: (LLH)	CVC.CV.CV:(LLH)
/ gɑ.bɑ.'teː / 'board', 'chart'	/ gɑb.ba.'te/ 'fertile

CHAPTER FIVE

THE SYLLABLE STRUCTURE OF MECHA OROMO IN OPTIMALITY THEORY

This chapter provides a detailed constraint–based, i.e., markedness constraint and faithfulness constraint analysis of syllable structure of Mecha Oromo based on markedness and faithfulness constraint principles proposed by Prince and Smolensky (2004), McCarthy and Prince (2004), and Kager (2004). Some of the argument of previous works on syllable structure are also presented to offer a consistent analysis of syllable structure of Mecha Oromo.

5.1 Markedness Constraint-Based Analysis of Mecha Oromo

According to Prince and Smolensky (2004), McCarthy and Prince (2004), and Kager (2004). the basic syllable structure constraints are the structural or markedness constraint and the faithfulness constraint. Markedness constraints are constraints that enforces the universally unmarked characteristics of the structure that involves the following:

a. ONSET

***[σV ('a syllable must have an onset.')**

As described by Kager (2004:91), this constraint requires that syllable must have an initial consonant that must not begin with vowels. It is satisfied by only syllables that have initial consonants. Since Mecha Oromo syllable typology are CV, CV:, CVC and CV: C. Vowel initial is prohibited that to satisfy this constraint, the glottal stop */ʔ/* is epenthesis to break a vowel initial in a syllable structure.

/ɑːn.goː/	[ʔɑngoː]	'power'
/ɑb.bɑː/	[ʔɑbbɑː]	'father'
/il.mɑ/	[ʔilmɑ]	'son'
/ob.sɑ/	[ʔobsɑ]	'patience'
/ul.fɑ/	[ʔulfɑ]	'pregnant'

In the above example the glottal stop /ʔ/ is epenthesis to fill the onset less syllable structure. The language requires, there be at least a consonant in the prevocalic position. So, ONSET is inviolable because of the insertion of the glottal in the prevocalic position.

The tableau (3) sows that the interaction between ONS and DEP-IO constraints.

TABLEAU 3ONSET DOMINATES DEP-IO, ONS≫ DEP-IO

Input / ɑdu: / 'sun'	ONS	DEP-IO
a. ɑdu:	*!	
b. ☞ʔɑ. du:		*

b. NOCODA

***C]σ ('Syllables must not have Coda'.)**

According to Prince and Smolensky (2004:92), McCarthy and Prince (2004:12) and Kager (2004:93), this constraint requires that syllable must not end in a consonant or must not have coda. Since there are syllable forms of CVC and CV: C in Mecha Oromo, the dialect allows coda at syllable final position. So, this constraint is least ranking violation. The following tableau shows the markedness constraints ONSET and NOCODA.

TABLEAU 4 ONSET AND NOCODA CONSTRAINT RANKING

(i).Input /mɑnɑ/ 'house'	ONSET	NOCODA
a. man.ɑ	*	*
b. ☞mɑ.nɑ		
(ii). Input /be:kumsɑ/ 'knowledge'		
a. be: k. um.sɑ	*	* *
b. be: k. ʔum.sɑ		**
c.☞be: kum.sɑ		*
(iii). Input /be: ktu:/'intelligent'		
a. be: ik.tu:	*	
b. ☞be: k. tu:		*

The conclusion to be drawn from the above tableau is that (CV) and (CVV) are the perfect syllable shapes, while the remaining shapes (V), (CVC) and (CVVC) are less perfect because of lacking onset or having coda.

c. *COMPLEX ^{ONS} and *COMPLEX ^{COD}

***[σ CC ('Onset is simple')**

***CC] σ ('Codas is simple')**

Language in the world may differ along dimension of complexity of syllable margin. Some languages may allow onset but allow or disallow complex onset. On the other hand, there may be language that allows coda but allow or disallow complex coda. According to Prince and Smolensky (2004:92), McCarthy and Prince (2004:12) and Kager (2004:93), in optimality theory of constraint set, syllables must not have complex onset and complex coda.

Indeed, many languages restricts the complexity of syllable margin, *COMPLEX^{ONS} are universally marked to simple Onset; COMPLEX^{COD} are marked as compared to simple codas. In Mecha Oromo, complexity in initial and final position of the words are restricted but allowed not more than two consonants in word medial. Consonant clusters are allowed in word medial when words are separated to syllable segments where the first member of consonant cluster is the coda of the first segment and the second member of consonant is the onset of the second segment in syllable structure as in / ɑbboːmsɑ/ [ʔab.bo:m.sa] ' gloss' and on the other hand to avoid complex cluster of consonants vowel epenthesis can be used.

- Avoiding of complex margin by vowel epenthesis in initial position.

/tru:/ [tiru:] 'liver'

/tkse:/ [tikse:] 'herdsman'

/brɑ/ [birɑ] 'beside

The following tableau shows the interaction between DEP-IO and *COMPLEX. The epenthesis of the vowel ***/i/*** between the consonant clusters dominates complexity of consonants.

TABLEAU 5 DEP-IO ≫ *COMPLEX

(i). Input: /tru:/ 'liver	ONSET	NOCODA	DEP-IO	*COMPLEX
a. tru:				*
b. tr. u:	*!	*		*
c. ☞ ti.ru			*	
(ii). Input: /tlmɑmɑ/ 'estimation'				
a. tl.mɑ.mɑ		*		*
b. tl.mɑm.		**		*
c. ☞til.mɑ.mɑ		*	*	
(iii).Input /tkse:/'herdsman'				
a. tk.se:		*		*
b. ☞ tik.se:		*	*	
(iv). Input /brɑ/ 'beside'				
a. brɑ				*
b. ☞bi.rɑ			*	

In the above tableau 5: In input (i), candidate (a) and candidate (b) is the loser because of in Mecha Oromo syllable with onset less and complex consonant in initial position is prohibited. Candidate (b) is the optimal candidate that satisfies ONSET, NOCODA and *COMPLE

d. CODA CONDITION

[NOCODA σ *PLACE]

***C] σ[PLACE]seg**

Coda constraint has place features that are not shared by an onset consonant. A segment which is both in coda position and an allowed of place feature will incur a violation of coda condition as described by several scholars in the area.

According to Prince and Smolensky (2004), there are two dominant and competing, strategies used to account for Onset/Coda asymmetries known as positional faithfulness and positional markedness. Proponent of positional faithfulness, onset/coda asymmetries exist not because of place features are prohibited in codas, but rather they are better preserved onset. On this account faithfulness constraints such as IDENT are influenced into those that refer to onset position and those that do not.

- Positional faithfulness constraints
  a) IDENT - ONSET (PLACE)
     A segment in the onset of a syllable and its input correspondent must have identical place specifications.
  b) IDENT (PLACE)
     Correspondent segment have identical place specification.

TABLEAU 6 IDENT^{ONS} (PLACE) ≫ IDENT (PLACE)

The features of onset must take precedence over the feature of coda

Input: /son.bɑ/ 'lung'	*DORSAL	*LABIAL	*CORONAL	IDENT (PLACE)
a.Son.bɑ		*	*	
b.soɲ.bɑː		*	*	
c.☞som.bɑ:		**		*

As discussed in Chapter 2, the distribution of phonemes in words) not all consonants allowed in word final or the coda position of final segments position. It is restricted to the coronal place features */n, r, l, s/* and the labial place feature */m, f/*. So, in Mecha Oromo, place features in word final position are limited and in word medial position all place features are permissible.

❖ Ranking for Mecha Oromo word medial codas

IDENT - ONSET (PLACE) ≫*DORSAL, *LABIAL≫ *CORONAL≫ IDENT (PLACE).

TABLEAU 7 CODA ASSIMILATION

I. Input: /son.ba/ ‘liver’	ID -ONSET (PLACE)	*DORSAL	*LABIAL	*CORONAL	IDENT(PLACE)
a.son.bɑ			*	*	
b.☞som.bɑ			*		*
II.input:/hɑn.gɑ/					
a.hɑn.gɑ		*		*	
b. ☞hɑɲ.gɑ		*		*	
c.hɑm.gɑ		*	*		*
III.input: /ɗɑg.nɑ/ ‘body’					
a. ɗɑg.nɑ		*		**	
c. ☞ɗɑk′.nɑ		*		**	
d. ɗɑɲ.nɑ				**!	*

Tableau (7) :Input (i) the output or the optimal candidate (b) dominates the input by changing the place feature from coronal to labial. In input (iii) candidate (c) is the optimal candidate.

5.2. Faithfulness constraint-based analysis of Mecha Oromo

The faithfulness constraint is those that constraints the relationship between input structure and output. According to Prince and Smolensky: 2004, Kager, 2004:10)’s faithfulness constraints,

- DEP-IO: - every segment in the output must have a correspondent in the input. (No epenthesis)
- MAX-IO: - every segment present in the input must have a correspondent in the output. (No deletion).
- IDENT (PLACE): -Distribution of place feature in the input and output is identical.

a) **DEP-IO**

Output segment must have input correspondents (no epenthesis).

This constraint is violated by any output segments that lacks a correspondent in the input. Such violation is incurred by epenthetic the glottal consonant ***/ʔ/***and the vowel ***/i/*** as described in the following tableau.

As we discussed before in section (4.2.) the onset less syllable structure is prohibited in the language. The glottal sound /ʔ/ is epenthesis to satisfy onset. So, ONSET is ranked above DEP – IO.

TABLEAU 8 ONSET ≫DEP –IO

I. Input: /ul.fɑ/ 'pregnant'	ONSET	DEP –IO
a. ul.fɑ	*!	
b.☞ʔul.fɑ		*
II. Input: /il.kɑːn/ 'teeth'		
a.il.kɑːn	*!	
b.☞ʔil.kɑːn		*

In the above tableau of (i) candidate (b) is optimal and the optimal candidate in (ii) is candidate (b) that it satisfies ONSET but violates the faithfulness constraints DEP-IO by adding of the glottal stop /***ʔ/*** since onset less is not permitted in the language.

AS discussed in section (3.4.2.) like in most dialects of Afaan Oromo, also in Mecha Oromo consonant cluster in initial and final position is restricted. So that to break the consonant clusters both in initial and final position vowel epenthesis is allowed.

As shown in the tableau (9):the ranking of both the markedness constraints ONSET, NOCODA, *COMPLEX above the faithfulness constraint DEP-IO motivates epenthesis as a resolution to words with consonant cluster both in initial and final position and to resolve onset less words.

TABLEAU 9 EPENTHESIS IN INPUTS WITH WORD INITIAL ONSET AND WORD FINAL CODAS

I. Input: /tru:/ ‘liver’	ONSET	NOCODA	*COMPLEX	DEP –IO
a. /tru:/			*	
b./tr/		*		
c.☞[ti.ru:]				*
II.Input: / fir/ ‘product’				
a./fir/		*		
b./fr/			*	
c.☞[fi.ri]				*
III.Input:/ ɑch/ ‘there’				
a./ɑtʃ /	*!	*		
b.☞[ʔɑ.tʃi]				*
c./ɑtʃ.i/	*!			*

b) MAX-IO

Every segment present in the input must have a correspondent in the output.

(No deletion).

Mostly in Afaan Oromo deletion of consonants and vowels from input segment to output is not familiar in basic words but it occurs in nouns to make singular from plural. So, MAX-IO is optimal in Mecha Oromo.

TABLEAU 10 ONSET, MAX-IO ≫ DEP-IO

Input: /ib.sa:/ 'light'	ONSET	MAX-IO	DEP-IO
a. ib.sɑ:	*!		
b.☞ʔib.sɑ:			*
Input:/ir.sɑ/ 'husband'			
a. ir.sɑ	*!		
b. ʔir.sɑ			*
c.☞ɗir.sɑ			*

The candidate (b) in Tableau 10) is the winner because it obeys ONSET by supplying a glottal consonant (ʔ) to the ONSET of the first syllable [ʔib.sɑ:]. Candidate (a) loses because it does not satisfy ONSET, despite obeying MAX-IO. MAX-IO does not have a preference between the winner and the loser.

c) IDENT-IO (PLACE)

Correspondents in input and output have identical place features.

According to Kager (2004:52) the faithfulness constraint allowing a limited set of structural changes such as deletion, insertion, fusion and feature changes. In this section we will look at nasal substitution in Mecha Oromo and the interaction between markedness constraints and faithfulness constraint.

Nasal substitution in Mecha Oromo, when the input contains a sequence of nasal plus a voiceless obstruent, place feature changing occurs in the output (cf. Melaku 1980:24). As listed in example (a), the labial consonant /m/ in the input is changed to the coronal /n/ in the output. As described in example (b), the nasal plus voiced obstruent in the input changes the place feature from coronal to labial in the output. So, in this case the faithfulness constraint, IDENT (PLACE) is violated. But in the example (c) and (d) the place features are the same in the input and the output correspondent.

a. /tʃʼu:m.fɑ:/ [tʃʼu:n.fɑ:] ‘juice’
/gu.dum.fɑ:/ [gu.dun.fɑ:] ‘conclusion’
/ɑ.lɑm.fɑ.tʃu:/ [ʔɑ.lɑn.fɑ.tʃ u:] ‘chew’
/ɗum.fɑ:/ [ɗun.fɑ:] ’individual’
/gɑ:m.fɑ/ [gɑ:n.fɑ] ‘horn’

b. / tʃʼu:n.bo:/ [tʃʼu:m.bo:] ‘bread’
/dɑn.bɑ.li:/ [dɑm.bɑ.li:] ‘wave’

c. / bi.ne:n.sɑ/ [bi.ne:n.sɑ] ‘animal’
/ɗo.hin.sɑ:/ [ɗo.hin.sɑ] ‘explosion’

d. /hɑn.gɑ/ [hɑɲ.gɑ] ‘amount’
/ɗɑn.gɑ:/ [ɗɑn.gɑ:] ‘food’
/un.ka/ [ʔuɲ.ka] ‘form’

The coalescence is trigged by a prohibition against a sequence of nasal and voiceless obstruent as contextual markedness constraints.

d) *NC̥
No nasal plus voiceless obstruent

Faithfulness constraints

- LINEARITY I-O
  The output reflects the precedence of structure of the input, and vice versa. It is violated when the order of some segment is changed. (against metathesis).
- UNIFORMITY I-O
  Violated when two or more segments are realized as one (against fusion).

The faithful candidate [tʃʼun.fɑ:] is less harmonic than the coalesced candidate [tʃʼuf.fɑ:]. From this, the LINEARITY I-O (the constraint that is violated in ‘losing’ candidate [tʃʼuf.fɑ:] dominates *NC̥ (the constraint that is violated in the ‘winning’ candidate [tʃʼun.fɑ :].

TABLEAU 11LINEARITY≫ *NC̥

Input: /tʃʼum.fɑ:/ ‘juice’	*NC̥	UNIFORMITY I-O
a. tʃʼuf.fɑ:		*
b.☞tʃʼun.fɑ:	*	

5.3. An Optimality Theory Account of Stress Pattern in Mecha Oromo

This section provides stress pattern in Mecha Oromo in perspective of Optimality theory. This section deals with lexical or word stress. Stress is a feature of a syllable, while focusing and accentuation are the features of word and foot respectively. As discussed in section 4.6, the position of stress in Mecha Oromo is not fixed; it occurs in different position according to syllables weight. We have seen some important rules for stress placement in the Mecha Oromo. An Optimality theory can account for stress assignment as syllable weight, syllable position within a word and extra-metrically through presenting a number of violable constraints.

a. NONFINALITY (NONFIN):-A word final syllable must not bear stress, Prince and Smolensky (2004:48).
b. WETHGT – TO – STRESS PRINCIPLE (WSP):- Heavy syllables are stressed/ prominent on the foot structure, Prince and Smolensky (2004:63).
c. GrWd=PrWd:- A grammatical word must be a prosodic word ,Kager (2004:152).
d. DEPμ-IO:- Output moras have input correspondents ,Kager (2004:156).
e. MAX μ-IO:-Every mora in the input has a correspondent in output (no mora deletion).
f. *MORA [V]:-No mora is associated with vowel.
g. NOCLASH: - Foot heads are not adjacent.
h. *FINAL-C-μ: - Word final coda consonant is weightless.
i. SYLMON:- Syllables are monomoraic.
j. WEIGHT-BY-POSITION(WBP):- Coda consonants are bimoraic, Kager (2004:147).
k. FOOTBINARITY (FTBIN):- A foot must be two syllables or moras, Kager (2004:161).

The following tableau presents the monosyllabic words in Mecha Oromo in outlook of *PrWd, MAX μ-IO and *MORA [V]. In fact, monosyllabic words identified in the Mecha Oromo takes the shapes of CVC (light syllable) and CV:C (heavy syllable). Each syllable shape is analyzed according to the following tableau respectively.

TABLEAU 12 MAX M-IO≫*PRWD,*MORA [V]

Input: /CVC/, /CμC/	*PrWd	MAX μ-IO	*MORA [V]
a. ☞ [CVC], [CμC]	*!		*
b./ CVC/, /Cμμ/			*

The optimal candidate (a) violates the high ranked constraint *PrWd. It is considered as the winner candidate since it satisfies the high ranked constraint MAXμ-IO. Candidate (b) satisfies the *PrWd and MAX μ-IO. In general, the Syllable shape CVC violates the word minimality of bimoraic.

TABLEAU 13 *PRWD, MAXM-IO >>*MORA[V]

Input: /CV:C/, / CμμC /	*PrWd	MAX μ-IO	*MORA [V]
a.☞[CV:C], [CμμC]			**
b./ CV:C /, /CμVC /	*!	*	*

Though candidate (a) in tableau (13) violates the low ranked constraint *MORA[v], it is considered as the winner candidate since it satisfies the high ranked constraint MAXμ-IO. Candidate (b) loses since it incurs violations of all three constraints *PrWd, MAXμ-IO and*MORA[v] respectively

Moreover, stress assignment of disyllabic words of the shape /CV. CV:/ as in the word /mɑdɑː/ ‘wound’ necessitate the adoption of the *PrWd constraint. In the shape of /CVC.CV/ as in the word of /mɑddɑ/ , ‘origin’. ‘source’ it violates *PrWd constraint.

TABLEAU 14 *PRWD, * MAX M -IO , DEPμ-IO>>*MORA [V]

Input:/mɑdɑː/ ‘wound’ /mμ.dμμ/	*PrWd	MAX μ -IO	DEPμ-IO	*MORA [V]
a.☞[mɑ. 'dɑː], [mμ. 'dμμ]				***
b. /mɑ. 'dɑː/ , /mμ. 'dμɑ/	*!	*		**
c. /mɑː. 'dɑː/, /mμμ. 'dμμ/			*	****
d. / 'mɑ.dɑ/, / 'mμ. dɑ/	*!	*		*

As shown in tableau (14), in disysyllabic words of the shape of /CV. CVː/ the second syllable is stressed. Candidate (a) [mɑ. 'dɑː], contains more than two moras. So, candidate (a) is the optimal candidate which satisfies the high ranked constraint *PrWd , MAX μ -IO and DEPμ-IO. On the other hand, candidate (b) and (d) incur fatal violation of *PrWd .

TABLEAU 15 DEPμ-IO, >>*PRWD

Input:/mɑddɑ/ ‘source’ /mμd.dμ/	*PrWd	MAX μ -IO	DEPμ-IO	*MORA [V]
a.☞ ['mɑd.dɑ], ['mμd. dμ]	*!			**
b. /'mɑd.dɑ, /'mμd. dμμ/			*	** *
c. /mɑː. 'dɑː/, /'mɑd. 'dμ/	*!	*		*

As shown in tableau (15), in disysyllabic words of the shape of /CVC. CV/ the initial syllable is stressed. The optimal candidate (a) ['mɑd.dɑ] violates the *PrWd since it contains one mora in each of the syllables.

Words that consist of two or more than two syllables demand FOOTBINARITY (FTBIN) which requires foot to be bimoraicor disyllabic. On the other hand, words that are composed of less than two moras such as those of the shape /CV/ and /CVC/ types considered as a violation of FTBIN.

In disyllabic word either the left-edge or left-edge syllable is stressed. This can changes the meaning of words .If the stressed syllable is aligned in right-edge, it requires the adoption of the

IAMBIC Constraint which states that unstressed syllable is followed by stressed syllable. The following tableau (15) shows the disyllabic words of (LL)Shape of CV.CV as in the word .☞ ['lo.lɑ]‘fight’ and light – heavy shape of CV.CVː as in the word [lo. 'lɑː], ‘erosion’

TABLEAU 16 FITBIN, NONFIN>>IAMBIC IN WORD STRESS OF (LL)

Input: /lolɑ / ‘fight’	IAMBIC	FITBIN	NONFIN
a.☞ ['lo.lɑ]	*!		
b. /lo. 'lɑ/		*!	*
c. / lo. 'lɑː/		*!	*

As shown in tableau (16) in disyllabic words consisting of light syllables where the first Syllable is stressed as shown in the words of ['lo.lɑ] ‘fight’, IAMBIC dominated by NONFIN, Since NONFIN states that a word final syllable must not be stressed.So candidate (a) is the optimal candidate which is ranked above IAMBIC.

In disyllabic of the shape of CV.CVː as a word of [lo. 'lɑː], ‘erosion’, it requires the adoption of the IAMBIC Constraint as given in the following tableau (17).

TABLEAU 17 IAMBIC, FITBIN>>NONFIN IN WORD STRESS OF (LH)

Input: / lolɑː / ‘erosion’	IAMBIC	FITBIN	NONFIN
a. /'lo.lɑ /	*!		
b.☞ [lo. 'lɑː]			*
c. lo. ('lɑː)		*!	*

As shown in tableau (17), the analysis of disyllabic words of the (LH) type requires the adoption of the IAMBIC constraint which states that the prominent foot including the stressed syllable should be aligned on the right edge.

In disyllabic words of (LH) form, the second syllable is stressed as we discussed in section (3.6). These forms of syllable structure satisfy WSP as this constraint states that heavy syllable must be stressed. In Mecha Oromo heavy syllables are stressed. This also requires ranking the WSP constraint higher than the NONFINALITY a constraint which disallows stress of word final syllable.

TABLEAU 18 WSP>> NONFINALITY IN WORDS OF (LH)

Input:(i) /CV.CV:/, /gubɑ:/ ‘hot’,‘fever’	FTBIN	WSP	NONFIN
a.☞ [gu.'bɑ:]			*
b. /’gu.bɑ: /		*!	
c. /gub. 'bɑː/			*
d./gu. 'bɑ/	*	*!	*
Input:(ii),/CVC.CV:/ /gubbɑː/ ‘up’ ‘above’			
a.☞ [gub. 'bɑː]			*
b. / ’gub. bɑː /		*!	
c. / gu.'bɑ:/			*
d. /gu. 'bɑ/	*	*!	*

As shown in tableau (18) ranking the WSP constraint higher than the NONFIN, the low ranked constraint favors candidate (a) over candidate (b) which incurs a violation of the WSP constraint. Both in input (i) and input(ii), candidate (d) incurs violation of FTBIN,WSP and NONFIN.

In disyllabic of (HH) the words are usually stressed on the second right most syllables. This requires the presentation of the EDGEMOST (pk; L/R; Word) constraint. The EDGEMOST (pk; L/R; Word) states that the stressed syllable or foot should be aligned at the left or the right edge of the word. Therefore, every syllable or foot that intervenes between the prominent (i.e., stressed) syllable or foot and the edge will count as a violation of this constraint. Meanwhile in Mecha Oromo, in the form of heavy syllables, the second syllable or the right-edge syllable receives stress as the words like,[lɑː'fɑ:],‘smooth’,[bo:.'nɑ:], ‘proud’,[tʃ'ɑː'lɑ:], ‘better’ , etc.

EDGEMOST (pk; L/R; Word): a peak of prominence lies at the L/R edge of the word. (Prince and Smolensky, 2004)

Tableau 19 EDGEMOST ('σ; R; Word) >>NONFIN in words of (HH).

Input:/lɑ:fɑ:/, 'smooth'	FTBIN	WSP	EDGEMOST ('σ; R; Word)	EDGEMOST ('σ; L; Word)	NONFIN
a. / 'lɑ.fɑ /		*!	*!		
b. / 'lɑ:fɑ: /			*!		
c.☞ [lɑ:'fɑ:]				*	*

As it is shown in tableau (19), candidate(c) satisfies FTBIN since they involve a binary foot and WSP constraint as it contains stressed heavy syllable. However, candidate (b) is the optimal one as it satisfies the high ranked constraint EDGEMOST ('σ; R; Word). Taking into account the constraint ranking proposed above, candidate (c) violations of the EDGEMOST ('σ; L; Word) and NONFINALITY constraints do not affect its overall performance.

In trisyllabic forms of (LLL) and (LHL), the second syllable is stressed while in (LLH), (LHH), (HHH) and (HLH), the final syllable is stressed. In other words, in trisyllabic forms of (HLL) the initial syllable is stressed.

Tableau 20 EDGEMOST ('σ; R; Word)>>NONFIN in words of (LLH)

Input: /gɑbɑteː / 'board', 'chart'	WSP	EDGEMOST ('σ; R; Word)	NONFIN
a.☞ [gɑ.bɑ.'teː]			*
b. / 'gɑ.bɑ.teː /	*!	**'σ	
c./gɑb.'bɑ.te/	*!	*'σ	

As shown above in tableau (20), candidate (a) is the winner that EDGEMOST ('σ; R; Word is ranked above NONFIN. Candidate (b) incurs fatal WSP that this constraint states heavy syllables must be stressed.

Tableau 21 EDGEMOST ('σ; R; Word)>>WSP in words of (LLL)

Input: /gαbbαte/ 'become fertile'	WSP	EDGEMOST ('σ; R; Word)	NONFIN
a.☞[gαb.'bα.te]	*!	*'σ	
b./gαb.bα.'teː/		* *'σ	*
c./gα.bα.'teː/			*

The optimal candidate (a) violates the high ranked constraint WSP, since the heavy syllable is stressed. This raises the need to rank the EDGEMOST ('σ; R; Word) constraints higher than WSP.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary

The study is mainly dealt with two major issues concerned to Mecha Oromo. The syllable structure and the syllable structure in Optimality theory, constraint-based approach. Optimality theory is a model which deals with the syllable structure and proposes a single means of expressing which constraint are violable (constraint –ranked violation or lower - ranked violation) constraint are tolerated in order to satisfy higher – ranked constraints. It is a linguistic model proposing that the observed form of language arises from the optimal satisfaction of conflicting constraints. In this regard, one can propose that the syllable structure of Mecha Oromo is best analyzed using optimality theory

The thesis is organized to five chapters including this chapter. Chapter one discussed the background of Afaan Oromo and its dialects, phonemes, and the distribution of phonemes as described by reviewing the previous works.

Mecha Oromo has twenty four native consonant phonemes and five short and long vowels. From these consonant phonemes the stop sounds are, /p′, b, t, t′, d, ɗ, k, k′, g, ʔ / and fricative sounds, /f, s, ʃ, h /, affricates, / tʃ′ , tʃ′ ′, dʒ /, nasal /m, n, ɲ / approximant sounds /l, r / and semivowels /w, j /. Additionally, there are two front vowels. /i, e/, back vowels, /o, u/ and one central vowel /ɑ/. Chapter two discussed the previous works on syllable structure of Afaan Oromo and the general background about optimality theory of syllable and syllable structure are discussed.

In chapter three the syllable structure and possible distribution of syllable in words of Mecha Oromo are discussed. The basic syllable type in Mecha Oromo are CV, CV: CVC and CV: C. The internal structure of the syllable consist Onset and Rhyme (nucleus and coda). The CV and CV:syllable structure in Mecha Oromo occurs in disyllabic, trisyllabic and quadrisyllabic in word initial, medial and final positions. The CVC and CV:C syllable structures occur in monosyllabic, disyllabic, trisyllabic and quadrisyllabic words both in initial, medial and final positions.

In this chapter the restricted syllable structure and Mecha Oromo are also discussed. Vowel initial syllable structure and syllable with consonant cluster in word initial and word final are restricted. Only a maximum of two consonants are allowed in word medial position and this consonant cluster in word medial can be divided into syllable segments where the first consonant can be the coda and the second consonant can be the onset of the syllable.

Finally, stress pattern in Mecha Oromo is also discussed in this chapter. In this dialect in word, structure of syllable ends with short vowel (CV.CV and CVV.CV), the first syllable of word is stressed. If a syllable ends with long vowel (CV.CVV and CVV.CVV), the second syllable of the word is stressed. In consonant cluster of word medial ends with short vowel (CVC.CV) the first syllable of a word is stressed. Consonant cluster of word medial ends with long vowel (CVV.CVV) the second syllable of word is stressed. In trisyllabic words, if the last syllable ends with short vowel (CV.CV.CV and CVC.CV.CV) the second syllable is stressed while the syllable ends with long vowel (CVC.CV.CVV and CV.CVV.CVV) the final syllable is stressed.

In Chapter four optimality theory constraint based (nakedness and faithfulness) constraint analysis of syllable structure of Mecha Oromo is provided. According to Prince and Smolensky (2004), MC Cathy (2004) and Kager (2004), markedness constraint: -Syllable must have onset, Syllable must not have coda, complex onset and complex codas are not allowed and coda constraint have place features that are not shared by onset consonant.

According to present result from this analysis, in Mecha Oromo vowel initial is prohibited. Even if there are words that begin with vowel, the glottal stop /ʔ/ is epenthesis to break vowel initial position to satisfy ONSET. So, the conclusion here is ONSET is inviolable because of the insertion of the glottal stop /ʔ/ in the prevocalic position. The other markedness constraint is syllable must not have coda *CODA. Majority of words in Mecha Oromo ends with vowels but a few words are ends with consonant sounds. But in a syllable structure there are a typology CVC and CV:C syllable structure that can occur in word initial, medial and final position. So *CODA constraint ranked as least -violation in the language. Additionally, $\text{COMPLEX}^{\text{ONS}}$ and $\text{COMPLEX}^{\text{COD}}$ are restricted in the language and this constraint is optimal.

Faithfulness constraint is a constraint in which the input and the output are identical. Epenthesis and deletion are prohibited in faithfulness constraints. In faithfulness constraint three major constraints are discussed. DEP-IO (Every segment in the output must have a correspondent in the input, (no epenthesis). MAX-IO (Every segment present in the input must have a correspondent in the input (no deletion). IDENT (PLACE), (Distribution of place feature in the input and the output is identical,

As discussed before to satisfy ONSET a glottal stop /ʔ/ is inserted to initial position of a word and to break consonant cluster in word initial and final position vowel epenthesis is permitted that DEP-IO is ranked as least- violation in the language and deletion of consonants and vowels are not common in Mecha Oromo in lexical words or basic words but it may occur in words with morphemes. So, in lexical words, deletion is prohibited but epenthesis is permitted to satisfy ONSET and *COMPLEX in onset and coda position. From this, analysis, in Mecha Oromo DEP-IO is ranked as least-violation and MAX-IO is optimal. Finally, in the language assimilation and metathesis are common. Changing the place feature from input to output can occur in the case of assimilation and metathesis. So, in the Mecha Oromo, IDENT-IO (PLACE) is ranked as least –violation.

In the last part of chapter four, the stress pattern in perspective of optimality theory that can account for stress assignment as a syllable weight, syllable position through presenting a number of violable constraints is discussed. The last chapter provides the summary and conclusion of the analysis of syllable structure of Mecha Oromo using the optimality theory.

6.2 Conclusion

In Mecha Oromo vowel initial is prohibited. Even if there are words that begin with vowel, the glottal stop /ʔ/ is epenthesis to break vowel initial position to satisfy ONSET. So, the conclusion here is ONSET is inviolable because of the insertion of the glottal stop /ʔ/ in the prevocalic position. The other markedness constraint is syllable must not have coda *CODA. Majority of words in Mecha Oromo ends with vowels but a few words are ends with consonant sounds. But in a syllable structure there are a typology CVC and CVVC syllable structure that can occur in word initial, medial and final position. So *CODA constraint ranked as least -violation in the language. Additionally, $\text{COMPLEX}^{\text{ONS}}$ and $\text{COMPLEX}^{\text{COD}}$ are restricted in the language and this constraint is optimal.

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6.3 Recommendation

Even if there are a lot of researches conducted on Oromo phonology in general by using of different theories, syllable structure is not further studied on language of Afaan Oromo. Since this thesis covers the syllable structure of Afaan Oromo, Mecha Oromo in Optimality theory, it recommends further studies on syllable structure of other Afaan Oromo dialects by using Optimality theory for comparative purpose. Such studies would fill in the gap of applying theory of generative phonology at advanced level.

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APPENDIX: GLOSSARY

This glossary comprises the list of about 201 basic words used in the study. The Mecha Oromo wordlist with their English glosses are presented in alphabetic order.

bɑ:du: ‘cheese’
bɑ:**t**i: ‘moon’
bɑ:lɑ ‘leaf’
bɑdɑ: ‘bad’
baddaa ‘highlands’
bɑhɑ ‘east’
bɑhi: ‘out comes’
bɑk′u: ‘to melt’
balaa ‘accident’
bɑrɑ ‘era’, ’time’,’year’
bɑrɑnɑ ‘this year’
bɑrbɑ:du: ‘find’
bɑrbɑ:tʃ′ ′isɑ ‘important’
bɑre:d:u: ‘beautiful’
bɑre:dɑ: ‘handsome’
bɑri: ‘early’
bɑrno:tɑ ‘education’
bɑrtʃ′ umɑ ‘seat’, ‘chair’
bɑtʃ′ o: ‘joke’
be:kɑ: ‘intelligent’,’ wise
be:ksi:sɑ ‘advertisement’
be:ktu: ‘intelligent’ (for female)
be:kumsɑ ‘knowledge’
be:lɑ ‘hunger’
bido: ‘sheep’
bine:nsɑ ‘animal’
birɑ ‘beside’
biʃɑ:n ‘water’
bobɑʔɑ ‘fuel’, ‘gasoline’
bonɑ ‘summer’
bonɑ: ‘proud’
bor ‘tomorrow’
botʃ ′ɑ ‘shape’
bu:si: ‘contribution’
bunɑ ‘coffee’
dɑ:rɑ: ‘ash’
dɑ:ku ‘flour’
dɑ:ng: ‘boundary’
ɗɑb:tɑ: ‘permanent’
ɗɑɗɑ: ‘butter’
dɑɗɑbu: ‘tired’
dɑfino: ‘Monday
dɑk′dɑki: swamp’
dɑm:ɑ ‘honey’
dɑmbɑli: ‘wave’
ɗɑngɑ: ‘food’
di:mɑ: ‘red’
ɗibe: ‘disease’
dike: ‘compost’
ɗip′inɑ ‘stress’
ɗirsɑ ‘husband’
dogog:orɑ ‘error’, ‘wrong’
ɗohinsɑ ‘exposition’
dok′nɑ ‘greedy’
ɗunfɑ: ‘individual’, ‘private’
dʒɑb:i: ‘calf’
dʒɑlk′ɑbɑ ‘beginning’ ,’first’
dʒilbɑ ‘knee’
fɑ:jidɑ: ‘advantage’
fɑgo: ‘distant’, ‘far’
fɑke:ɲɑ ‘figurative’, ‘example’
fɑnt′o: ‘syphilis’
fɑr:ɑ ‘anti’
fɑrso: ‘tella’
eɗɑ ‘ interest’
firi ‘product’
fo:n ‘meat’
fu:ɗɑ ‘marriage’
fu:lɑ ‘face’
fu:ldur ‘forward’, ‘future’
fuɲo: ‘rope’
gɑ:ri: ‘good’, ‘fine’,
gɑ:fɑ ‘horn’
gɑb ‘kept quite’
gɑbɑ: ‘market’
gɑbɑte: ‘board’ ‘down’
gabbate: ‘become fertile’
gɑlgɑlɑ ‘evening’
gɑlmɑ‘hall’, ‘achieve’
gɑmbo: ‘jar’
gɑmnɑ ‘wise’
gɑnɑmɑ ‘morning’
gɑnfɑ: horn’
gɑrɑ: ‘stomach’
gɑrbɑ ‘ocean’
gɑrgɑrsɑ: ‘help’

go:tɑ 'hero'
golɑ 'room'
goromsɑ 'heifer'
gow:ɑ: 'foolish'
gubɑ: 'hot'
gubbɑ: 'up', 'above'
gudunfɑ: 'conclusion'
gutʃ'ɑ 'torch'
hɑk'ɑ 'justice'
hɑlkan 'night'
ham:tʃ'u: ' hung'
hangɑ' 'amount'
hap'i: 'light'
hɑrgɑnu: 'breath'
hɑrkɑ 'hand'
hɑt 'cutting (suddenly)'
ho:lɑ 'sheep'
hoɗɗe: 'sew'
hoɗe 'suck'
jo:m 'when'
kɑ:j:o: 'aim', 'goal',
k'ɑ:mɑ 'body'
kan:sɑ 'bee/s'
k'i t'ɑ 'direction'
k'it't'ɑ: 'bread'
kolfɑ 'laugh'
kop'e: 'shoes'
kop'i: 'occasion',
k'orɑ 'question'
k'orrɑ 'cold'
ku:fɑ 'satisfaction'
k'ufɑ: 'cough'
k'ulk'ul:u: 'holy', 'clean'
lɑ:fɑ: 'smooth', 'soft'
lɑfɑ 'earth'
lɑgɑ 'river'
lamɑ 'two'
lap'e: 'heart'
lo:gi: 'bias'
lo:n 'cattle'
mɑ:l:k'ɑ 'money'
mɑdɑ: 'wound'
maddɑ 'source', 'origin'
mɑlɑ 'solution'
mɑlɑ: 'pus'
manɑ 'house'
mormɑ 'neck'
mukɑ 'tree'
ɲɑ:tʃ':u: 'to eat'
namɑ 'person'
namum:ɑ: 'humanity',
nan:o: 'local'
rɑ:fu: 'cabbage'
ʃɑ:kɑlɑ 'exercise',
sadde:t 'eight'
saɲi: 'gene'
sare: 'dog'
so:res: 'rich'
so:ru: 'to feed'
sodɑ, 'fear'
soddɑ: 'brother in law'
sombɑ 'lung'
soru: 'to clean'
tab:ɑ 'hill', 'mountain'
t^he:s:o: 'address',
tikse: 'herdsman'
tiru: 'liver'
tʃ' ɑ:bi: 'bowl'
tʃ' ɑ:slugɑ 'grammar'
tʃ' ɑfɑk'u: 'crush'
tʃ' ɑki: 'hoe'
tʃ' ɑlɑlu: 'refine', 'screening'
tʃ' ɑr:ɑ:k'ɑ 'effort'
tʃ' imɑ: 'strong'
tʃ' u:mbo: 'cultural bread'
tʃ' u:nfɑ: 'juice'
tʃ' ufe 'enclosed'
tʃ' ɑb:i: 'ice'
t'uw:e: 'pot'
wɑj:ɑ: 'clothes'
wɑlɑbɑ 'independent'
ʔɑ:ngo: 'authority', 'power'
ʔɑ:rɑ 'smoke'
ʔɑb:ɑ: 'father'
ʔɑb:o:mama: 'obedient'
ʔɑb:o:msɑ: 'attribute'
ʔɑbdɑ:ri: 'spiritual area'
ʔɑd:ur:e: 'cat'
ʔɑdu: 'sun'
ʔɑk: ɑm 'how'
ʔɑk:as 'so'
ʔɑk:ʔɑ:tɑ: 'according', 'condition'
ʔɑlanfatʃ'u: 'chew'
ʔɑmanu: 'to believe'
ʔɑn:an 'milk'
ʔɑnɑ 'me'
ʔɑrɑbsɑ 'mock'
ʔɑrbɑ 'elephant'
ʔɑs 'here'
ʔɑtʃ' 'i 'there'
ʔe:le: 'baking pan'
ʔe:b:ɑ 'blessing'

ʔeːɲːuː 'who'
ʔeblɑ 'April
ʔekʔerɑ 'apparition, 'Ghost'
ʔibsɑː 'light'
ʔidʒɑ 'eye'
ʔilkɑːn 'teeth'

ʔilmɑ 'son'
ʔobsɑ 'patience.
ʔof 'self'
ʔol 'up'
ʔulfɑ 'pregnant'
ʔunkɑ 'form'