## MORPHOPHONOLOGICAL PROCESSES IN THE VERB: A CASE STUDY OF THE MAAY DIALECT OF SOMALI

BY

**UGAS ABDIRAHMAN MOHUMED** 

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#### DECLARATION

This thesis is my original work and has not been presented in any other University.

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Ugas Abdirahman Mohumed

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

Signature \_\_\_\_\_

Prof. Kithaka wa Mberia

Signature \_\_\_\_\_

Dr. Helga Schroeder

Date: \_\_\_\_\_

Date: \_\_\_\_\_

#### **DEDICATION**

This thesis is dedicated to:

my late father,

Abdirahman Mohamed, may Allah rest his soul in paradise

my lovely mother,

Abdia Maalim

my dear wife, Isnina,

my lovely children,

Samaha and Abdirahman

and

all my brothers and sisters.

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#### ABSTRACT

The main aim of the study was to investigate morphophonological processes in the verb of the Maay dialect of Somali. Specifically, the study was aimed at analysing some aspects of phonology and morphology of the Maay dialect that are directly related to the morphophonological processes in the verb. The second objective was to identify the various morphophonological processes that affect the consonants of the Maay dialect and analyse the environment in which they occur. Finally, the study was aimed at identifying the various morphophonological processes that affect the vowels of the Maay dialect and analyse the environment in which they occur. The result of the data analysis concluded that the Maay dialect is characterized by morphophonological processes both in the consonants and the vowels which arise due to the influence of tense, aspect, mood and other vowels and consonants which occur in the immediate environment. Vowel processes which include glide insertion, glide formation, and vowel harmony were found to be as a result of the influence of tense, aspect and mood. The suffixes that mark tense, aspect and mood begin with vowels that influence the vowels in the root. Similarly, consonant processes such as spirantization, velar fronting, and consonant deletion are influenced by tense, aspect and mood. Homorganic nasal assimilation, consonant coalescence and consonant lengthening are as a result of other consonants that occur in the immediate environment. The theory of Natural Generative Phonology was used to analyse the data.

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## **DEFINITION OF TERMS**

Morphophonological:	The	phonemic	variations	which	morphemes	undergo	in
	comb	ination with	one anothe	r. (Malmk	tjær 2004:361)		
Morphophonemic rules (MP-	-rules): catego	These are r ories, such a	ules that ref s plural, pas	er to morj st, or nour	phological or s n, verb. (Hoope	yntactic er 1976:15)	)
Phonological rules (P-rules):	These will b	are rules the manifestee	at describe 1 in a phone	the way st	urface contrast nment. (Hoop	tive feature er 1976:16)	s )
Sandhi rules:	These modif (2004	are rules th fication of (362)	at attempt t forms jo	o account	s for the phone one another	blogical ∵. (Malmk	jær
True generalization condition	n: A rul the ph	le expressed sysical detai	in phonetic ls of articul	e terms mu ation. (Ho	ust actually con oper 1976:16)	rrespond to	
Vowel harmony:	This is usuall (Lade	a process w y the we foged 2010:	here all vov ord, share 244)	vels withi certain	n certain desig phonologica	nated doma	ain, ies.
Spirantization:	It is a (Camp	process wl bell: 1998:4	nere an aff 2)	ricate or	a stop becom	es a fricati	ive.
Circumfixation:	A pro beginn	ocesses who	ere a morp ne end of a i	heme wi coot or a s	th two parts tem.	occurs at	the
Complementary distribution	:Арі	ocess wher	e two sour	nds are fo	ound in mutu	ally exclus	sive

phonetic environment.

### LIST OF SYMBOLS AND ABBREVIATIONS USED IN THE STUDY

С	consonant
V	vowel
1sg	first person singular
2sg	second person singular
3Msg	third person male singular
3Fsg	third person female singular
1pl	first plural
2pl	second plural
3pl	third plural
ATR	advanced tongue root
NGP	Natural Generative Phonology
syll	syllabic
Masc	masculine
Fem	feminine
Def	definitive
Con.	conditional
Reflex	reflexive
Cause	causative

Dir	directionality
Imp	imperative
Neg	negation
IND	indefinite
m.voice	middle voice
imm.Futu	immediate future
obj	object
>	Becomes or changes to
	Remains the same
#	Word boundary
[]	Phonetic boundary of surface forms
{ }	indicates alternatives
Ø	Null segment
//	Phonetic boundary of underlying forms
:	Long vowel or consonant
/	Phonetic environment
+	Morpheme boundary

#### **CHAPTER 1: INTRODUCTION TO THE STUDY**

#### **1.0 BACKGROUND TO THE STUDY**

Somali language belongs to the lowland East Cushitic family of Afro-Asiatic language. Other languages in the East Cushitic family include Afar, Oromo, Rendille and Boni. The diagram below illustrates the classification of Cushitic languages:

Diagram 1: The Classification of the Cushitic languages



Saeed (1999:548) identified three main Somali dialect groups namely: Northern, Banadir and Maay. According to Saeed (1999:548), the Northern dialect group forms the basis of the standard Somali used officially in Somalia and is the most geographically widespread. Lamberti (1986) quoted by Landifino<sup>1</sup> (2011:7) classified Somali dialects into five groups:

- 1. Northern Somali dialect group which includes the Ogaden dialect spoken in Garissa.
- 2. The Benadir dialect group spoken in areas such as Mogadishu and the Middle Shebelle region of Somalia.
- 3. The Ashraf dialect group spoken along southern Somalia coast by the Ashraf clan.
- 4. The Maay dialect group spoken in the southern part of Somalia.
- 5. Digil dialects spoken in southern Somalia.

The Maay dialect features in both Saeed and Lamberti's classification of Somali dialects. The *May* or *Maay* dialect is also known as *Af Rahweyn*. In this study, *Rahweyn* or *Maay* will be used interchangeably to refer to the same dialect.

The Somali dialects in Kenya generally fall into two groups: the *Af Maay* and the *Af Mahatiri*. *Af Mahatiri* dialect is the dialect Lamberti (1986) classified as the Northern dialect group and is the most common dialect spoken by Kenyan Somalis. The Maay dialect is distinct from other dialects of Somali in terms of its morphology, phonology and sentence structure. The mutual intelligibility between the Maay and the Northern dialect group (the Standard dialect) is low but there is high mutual intelligibility between Maay, Digil and Ashraf dialect groups.

In Kenya, speakers of the Maay dialect are mainly found in Mandera County which is located in the North Eastern part of the country. However, the majority of the speakers of the Maay dialect live in the southern part of Somalia.

According to Saeed (1999:48), "The May (Maay) dialects are spoken in southern part of Somali from Ethiopian border to behind the coastal strip between Mogadishu and Kismayu, including the city of Baydhoba (Baidoa)." The speakers of the Maay dialect refer to their dialect as *Af Reewing* which means "the language of the *Reewing* people." *Rahweyn* or *Reewing* refers to both the tribe and the speakers of the Maay dialects even though there are speakers who do not belong

<sup>&</sup>lt;sup>1</sup> A Norwegian Organization called the Country of Origin Information Centre

to the *Rahweyn* clan but speak the Maay dialect. The term '*Maay*' or '*Af Maay*' seems to be an appropriate reference to this dialect since there are speakers of this dialect who may not necessarily belong to the Rahweyn community.

There are morphophonological processes that are found in the verb of the Maay dialect of Somali. These morphophonological processes include palatalization, vowel lengthening, glide formation, nasal assimilation among others. This study aims to provide an in-depth analysis of the morphophonological processes involved in the verb of the Maay dialect of Somali. The Natural Generative Phonology theory will be used to analyse the morphophonological processes in the verb.

#### 1.1 STATEMENT OF THE RESEARCH PROBLEM

The Maay dialect is characterized by morphophonological processes in the verb. Consider the following data:

(1) Qaad ! /ga:d/
Carry !
Qaadh-i /ga:ði/
carry-1sg/3Msg/past
I/ He carried.

The suffix /d/d at the end of the root of the word has changed to  $/\partial/d$  in the past tense.

Little research has been carried out to investigate the morphophonological processes that affect the verb of the Maay dialect. Hence, there is insufficient knowledge and the present study will fill in this knowledge gap. The Natural Generative Phonology theory (NGP) will be used to analyse the morphophonological processes in the verb. The study will be guided by the following research question:

- 1. What are the morphophonological processes that affect the verb of Maay dialect of Somali?
- 2. Do the morphophonological processes affect the affixes or the roots?
- 3. What are the phonological rules that are responsible for the morphophonological processes?

#### **1.2 GENERAL OBJECTIVE OF THE STUDY**

The overall objective of the study is to analyse morphophonological processes in the verb of the Maay dialect of Somali. This study seeks to achieve the following specific objectives:

- **1.** To analyse some aspects of phonology and morphology of the Maay dialect that are directly related to the morphophonological processes in the verb.
- 2. To identify the various morphophonological processes that affect the consonants of the the Maay dialect and analyse the environment in which they occur.
- **3.** To identify the various morphophonological processes that affect the vowels of the Maay dialect and analyse the environment in which they occur.

#### **1.3 RESEARCH HYPOTHESES**

The study hypothesizes the following:

- 1. Maay dialect of Somali exhibits morphophonological processes in the verb.
- 2. Sound changes in the consonants of the Maay dialect are as a result of the influence of tense, aspect, mood and other consonants which occur in the immediate environment.
- **3.** Sound changes in the vowels of the Maay dialect are as a result of the influence of tense, aspect, mood and other vowels which occur in the immediate environment.

#### 1.4 JUSTIFICATION OF THE STUDY

Very little research has been undertaken in the Maay dialect of Somali and hence, this study will provide information that will be useful for researchers and promote the documentation, revitalization and development of the Maay dialect. This research will also create awareness about the morphophonological processes in the verb of the Maay dialect and the underlying representation of allomorphs and general phonological rules.

#### 1.5 SCOPE AND LIMITATION OF THE STUDY

The study is limited to the morphophonological processes in the verb of Maay dialect of Somali as it is used in Mandera County. Although there are variations within the Maay dialects, this study will mainly focus on the Maay dialect as it is used in Mandera County. The study will not cover other varieties of the Maay dialects that are spoken in some parts of Somalia.

The theoretical framework of this study will be limited to the theory of Natural Generative Phonology.

#### **1.6 LITERATURE REVIEW**

In an MA thesis entitled "The Inflection Morphology in Oromo", Olani (2014) analyses verb inflections in Oromo. Olani's study is important to this research because Oromo and Somali belong to the same language family of Cushitic languages and share many features. However, the present study will be different from Olani's because it will mainly focus on the morphophonological processes in the verb of the Maay dialect using the theory of Natural Generative Phonology.

Some scholars conducted a research on the Phonology of the Oromo language. Such scholars include Hoskins (2011). Hoskin's study was mainly a description of the consonants and vowels found in Oromo. Since Oromo and Somali belong to the same Cushitic language family, his study is useful to this research because he highlighted some morphophonemic processes of Oromo language such as assimilation, epenthesis, metathesis and dissimilation.

Lampitelli (2011) wrote an article about the Morphophonology of Somali Nouns. According to him, the Somali nominal system is characterized by the presence of inflectional classes. Lampitelli discussed gender plurality in the nominal system of Somali. His study was very brief and limited to a few morphophonological processes in the noun. The present study will present a detailed analysis of the morphophonological processes in the verb. However, some of the data presented in Lampitelli's article is significant to the present study.

The issue of verb inflection in Somali was extensively discussed by some scholars. Saeed (1999) in his book, *Somali*, discussed the morphology of the standard Somali language (the Northern dialect). His book is useful to this research because of his insightful discussions about inflections and derivations in the standard Somali dialect (Northern dialect group). However, the present study will be different from Saeed's since it will mainly focus on the morphophonological processes of the Maay dialect which is distinct from the Northern dialect group.

There are a few scholars who carried out a study on Somali dialects very closely related to the Maay dialect. Tosco (1997) published a book about "*Af tunni*" (A Digil dialect group of Somali). He discusses inflectional and derivational morphology of Tuni. Tosco's book is useful because this dialect (*Af tuni*) is close to the Maay dialect group. However, Tosco's work was basically descriptive and was not based on any theoretical framework. This study will carry out an indepth analysis of the morphophonological processes in the verb of Maay dialect using the theory of Natural Generative Phonology.

Verbs in Somali are generally inflected through suffixation. Some scholars tried to study a few prefix-conjugated verbs. Banti (1988) carried out a study entitled "Reflections on Derivation from Prefix-conjugated verbs in Somali." Banti's study focused on a small group of prefix-words in Somali such as the present tense of the verb *og* (know) and *yahay* (he is). He discusses the verbs in derivational forms and compares them with similar verbs in the Beja language. Banti's study was limited to some unique types of verbs found in the Northern dialect of Somali. However, Banti's work is significant to the present study because he discusses the alternations in the verbs which can be attributed to morphophonological processes.

Scholars of the Somali language have different views on the number of dialects of Somali. Lamberti (1984) in his book "*Die- Somali Dialecte*" discusses the major dialects of Somali language. His classification of Somali dialect groups and how close they are to one another is very useful to this research. Lamberti (1983a:439) quoted by Tosco (1997:2) noted that *Tunni* dialect shares with *Maay* the highest number of common innovations both presumably genetic and areally induced. Lamberti's study was basically focused on the classification of Somali dialects and has been useful in the background study of this research.

Cushitic languages such as Somali and Borana share 'middle voice'. Scholars like Bruno and Puglielli (1984) conducted a study on middle voice in the Northern dialect group of Somali. They stated that Somali verbal system is characterized by three way voice opposition: active, middle and passive each of which is morphologically distinct and marked by the presence of a different root extension. Bruno and Puglielli's study was very narrow and limited to the middle

voice of verb derivation. However, the data they used in their analysis will be useful to this study.

Some studies have been conducted to investigate the issue of morphophonemics of the verb in Rendille. Sim (1981) conducted a study on the morphophonemics of the verb in Rendille. According to him, the verbs in Rendille are treated as simple stems consisting of a root plus an extension affix. Sim's study focused on suffix extension which relate to reflexive middle, causative and agentive. However, Sim's study was very brief and had a number of loose ends as he himself acknowledged it. On the other hand, Sims' study is significant to this study because of his discussions of certain morphophonemic processes he identified in Rendille such as epenthesis, metathesis, vowel deletion and assimilation.

The phonetics of the Somali language has been studied by different scholars. Armstrong (1964) in his book *The Phonetic Structure of the Somali language* discusses the consonants and vowels of Somali. Although some of the vowels he stated such as  $/\infty$  / are not common in most dialects of Somali, his analysis of the vowel system such as the presence of a centralized vocalic phone  $/\partial$ / in the Maay dialect will be useful in the transcription of the data. Even though Armstong's work basically focused on the phonology of Somali language, his discussion of some morphophonological processes such as consonant lengthening will be useful to this study.

#### **1.7 THEORETICAL FRAMEWORK**

The study will use the Natural Generative Phonology theory (NGP) to analyse the morphophonological processes in the verb of the Maay dialect.

#### 1.7.1 THE NATURAL GENERATIVE PHONOLOGY

Natural Generative Phonology (NGP) dates back to a number of papers written by Vennemann in the early 1970s and subsequently expounded by Hooper in 1976. According to Vennemann, if a morpheme showed no alternation then its underlying form is identical to its surface form and if there is an alternation then the underlying form must be identical to one of the surface allomorphs (Clark & Yallop 1990:341).

The theory of Natural Generative Phonology emerged out of the weaknesses of the Standard Generative Phonology developed by Noam Chomsky and Morris Halle in 1968 in the Sound Pattern of English. According to Hooper (1976:5), Generative Phonology is characterized by abstractness of underlying systematic phonemic representations. Hooper (1976:5) states that there is nothing explicit in the theory of Generative Phonology that specifies how different underlying forms may be from surface forms. Generative Phonology is so powerful that it describes phenomena that never occur in natural language. Hence GP needs to be constrained (Hooper 1976:5). The natural generative Phonology was mainly developed in an attempt to constrain abstractness in phonology (Hooper 1976:12).

#### 1.7.2 PRINCIPLES OF NATURAL GENERATIVE PHONOLOGY

The following are the main principles of the theory of the Natural Generative Phonology:

#### **1.7.2.1 THE TRUE GENERLIZATION CONDITION**

The true generalization condition specifies how a rule should be formulated. Hooper (1976:13) states that "It is not unreasonable to try to restrict the rules of grammar to generalizations whose predictions are testable and to generalizations that speakers could reasonably formulate, given the surface forms of the language." One of the ways of achieving this restriction is by formulating rules that do not allow abstractness at all. This constrain requires that all rules express transparent surface generalization. The generalizations should be true for all surface forms and should express the relation between surface forms in a very direct manner. This condition is known as the true generalization condition (Hooper 1976:13).

According to the true generalization condition, "The rules speakers formulate are based directly on surface forms and that these rules relate one surface form to another, rather than relating underlying to surface form" (Hooper 1976:13). According to Hooper true surface generalizations are more natural and should form the basis for rule formulation. This condition restricts abstractness in the theory since it restricts the number of possible grammars for any given body of data. This is because under the true generalization conditions no rule could refer to a nonexistent segment (Hooper 1976:14).

Clark and Yallop (1990:342) define the true generalization principle as follows:

Within the NGP rules are regarded generalization across surface forms rather than as the means for generating surface forms. --- The major claim of natural generative phonology is that speakers construct only generalization that is surface-true and transparent. --- An important feature of the surface-true generalization is that they are all falsifiable in a way that the more abstract generalizations of generative phonology are not. (P.342)

#### 1.7.2.2 NO-ORDERING CONDITION

According to this condition rules are not extrinsically ordered, rather they apply in random sequential order whenever their structural description is met. Phonetic motivation of phonological rules is always observable at the surface phonetic level and all the surface forms must conform to the constraints expressed in the phonological rules (Hooper 1973:25).

#### 1.7.2.3 THE STRONG NATURALNESS CONDITION

According to Vennemann (1973) quoted by Hooper (1973:21) "The strong naturalness condition requires that the underlying forms of non-alternating morphemes be identical to their phonetic representations." For example, if a morpheme has more than one allomorph, one of the surface allomorphs is listed in the lexicon and the other forms are derived from it.

#### **1.7.3 NATURAL GENERATIVE PHONOLOGY RULES**

NGP operates on the following rules:

#### **1.7.3.1 PHONOLOGICAL RULES (P-RULES)**

These are rules that refer to only phonetic information and reflect the 'automatic' pronunciation habit of a speaker (Clark & Yallop 1990:341). Examples of phonological rule include the aspiration of voiceless stops when they occur at the onset of a stressed syllable in English and the automatic neutralization, such as syllable-final devoicing of obstruents in German (Hooper 1976:14).

#### **1.7.3.2 MORPHOPHONEMIC RULES (MP-RULES)**

These are rules that refer to grammatical or lexical contexts and often do admit exception (Clark & Yallop 1990:342). According to Hooper (1976:15,) MP-rules refer to morphological or syntactic categories, such as plural, past, or noun, verb, or the rules refer to arbitrary lexical categories, such as conjugation classes or classes designated arbitrarily by diacritics. An example of MP-rule is the voicing of obstruents in certain English plural such as wife, wives, house, hou[z]es.

Hooper (1976:16) states that the main difference between P-rules and MP-rules is that P-rules describe processes governed by the physical properties of the vocal tract and these processes are not random and totally language-specific and their form and content can be predicted on universal principles. On the other hand, "MP-rules take part in sound-meaning correspondence of a language and are therefore language specific." Morphophonemic rules will be useful in analyzing morphophonological processes in the verb of the Maay dialect.

#### 1.7.3.3 VIA-RULES

Mberia (1993:33) defined via rules as rules that "express phonological relationship in a situation whereby none of the two or more related forms can justifiably be said to be underlying and the other(s) derived from it."

#### 1.7.3.4 SANDHI RULES

According to Malmkjær (2004:362) sandhi rules attempts to accounts for the phonological modification of forms joined to one another. There are two types of sandhi rules: external sandhi and internal sandhi. External sandhi occurs across word boundaries by linking words within phrases. On the other hand, internal sandhi occurs within word boundaries. According to Hooper (1976:17) sandhi rules constitute a class that is intermediate between P-rules and MP-rules and the rule contains a word boundary but no other non-phonetic information. The following data from the Maay dialect shows that when the masculine definite article /kə/ is attached as a suffix to a noun the following phonological changes take place:



The data shows that the definite article for masculine /k/ undergoes phonological changes when it is suffixed to the root of the noun and it is realized as [kə], [və] or [gə] depending on the environment.

#### 1.7.3.5 SYLLABIFICATION RULES

According to (Hooper 1976:18), syllabification rules assign syllable boundaries to the phonological string. Goldsmith (2011:174) states that Hooper (1976) presents an argument in favour of syllable analysis utilizing a formal symbol such as \$ to mark syllable division. According to Goldsmith (2011) Hooper (1976) notes:

The assimilation of nasals for point of articulation is found not simply when a nasal is followed by a segment specified for a point of articulation but rather when the nasal is at the end of a syllable, and followed in the next syllable by an element with a point of articulation. (Pg. 174)

According to Goldsmith (2011:176), some of the syllabification rules that Hooper proposed include the assertion of # between adjacent syllabics and in a VCV sequence you insert # to form V#CV.

#### **1.7.3.6 MORPHOLOGICAL SPELL-OUT RULES**

Morphological spell-our rules are used to give a phonological shape to abstract morphemes. For example, English plural +Z + (Hooper 1976:18)

#### 1.7.3.7 WORD FORMATION RULES

These are rules that specify the order and type of morphological elements that constitute a word (Hooper 1976:18). Word formation processes include inflection and derivation. According to Plag (2002:26), inflectional morphemes encode grammatical categories such as plural. For example, he states that "There is a grammatical rule in English that demands that a third person singular subject is followed by a verb that is also marked by a third person singular." Derivational morphemes on the other hand change the category of word. For example, if you add the nominal suffix *–ism* to the word terror it becomes terrorism (Plag 2002:27).

#### **1.8 METHODOLOGY**

#### **1.8.1 DATA COLLECTION**

The data to be used in this study will be mainly verbs. As a native speaker of the Maay dialect, I will generate relevant data to be used in this research. Three other native speakers of this dialect will also be sources of data generation. The choice of the three informants was mainly based on convenience sampling. The data the researcher generates will be counterchecked with the three identified informants aged between 30-60 years because at this age the informants are believed to be competent in their dialect. All the three informants are from Mandera County. The collected data will be written in the standard Somali orthography and translated into English. The data will also be transcribed using the IPA symbols where necessary.

Another method of data collection used in this study is the technique of naturalistic observation. The researcher will listen to dialogues between speakers of the Maay dialect without eliciting specific information. Relevant data acquired from the speakers of the Maay dialect in the course of their conversation will be recorded and analysed according to the specific objectives of the study.

#### 1.8.2 DATA ANALYSIS

The collected verbs will be used in tenses, aspect, mood and applicatives to see how the sounds will change. Morphemes will be fully segmented and glossed for general observations and conclusions about the morphophonological changes that take place. The influence of tense, aspect and mood in the morphophonological processes of the verb will be analysed. The sound

changes that occur in the consonants and vowels of the Maay dialect will be analysed. General rules that motivate the morphophonological processes will be formulated. Where necessary the data will be presented in summary tables. The hypotheses will be tested using inferences from the result of the findings of the analysed data.

#### 1.9 CONCLUSION

This chapter has presented the background to the study which includes the Cushitic language families together with the various dialects of Somali. The speakers of the Maay dialect and their geographical location were extensively discussed. The chapter also presented the objectives and hypotheses of the study. The statement of the problem which is mainly based on the morphophonological processes of the Maay dialect was presented clearly.

The chapter also presented the literature review and the theoretical framework to be used in this study. The main principles of the theory of Natural Generative Phonology which will be used in this study were discussed briefly. Finally, the methodology to be used in this study was outlined clearly. The main approaches to data collection which include introspection and naturalistic observation were briefly described. The methods of data analysis were also outlined clearly.

# CHAPTER 2: SOME ASPECTS OF PHONOLOGY AND MORPHOLOGY OF THE MAAY DIALECT

#### 2.0 INTRODUCTION

In order to understand the morphophonological processes in the verbs of the Maay dialect, it is important to understand some aspect of the Maay dialect phonology and morphology. In section 2.1, the chapter will discuss the vowel system of the Maay dialect while in section 2.2 the consonant inventory of the dialect will be analysed. In section 2.1.5 and 2.2.4, the distinctive feature matrix of the Maay dialect vowels and consonants will be analyzed respectively since they are crucial when writing the rules that lead to morphophonological processes. The chapter will also discuss the main type of verbs in the Maay dialect in section 2.3 and the morphological structure of the verb will be presented in section 2.4. Finally, a summary of the whole chapter will be presented in section 2.5.

#### 2.1 THE VOWEL SYSTEM OF THE MAAY DIALECT

Somali language scholars generally agree that Somali has five short pure vowels: a, e, i, o and u with their corresponding long ones. Paster (2006:76) states that the vowel inventory of Lower Juba Maay dialect is identical to those of both Central Somali and Standard Somali dialect except a sixth high central vowel which exist in Central Somali dialect. The Central Somali dialect mentioned by Paster is similar to the Maay dialect used in Mandera County which is analysed in this study.

There are some scholars who have extensively researched on the phonology of some of the dialects of Somali. Such scholars include Tosco (1997) who studied the phonology of *Af Tuni*, a dialect closely related to the Maay. Tosco (1997:14) identified ten short vowels with a corresponding ten long ones of *Tuni* dialect. He treated the long vowels as a sequence of two identical segments. This study identifies nine short vowels with a corresponding nine long ones and a central vowel (schwa). The following diagram illustrates the vowels of the Maay dialect as it is used in Mandera County:



Diagram 2: The short vowel system of Maay dialect

Diagram 3: The long vowel system of the Maay dialect



Diagram 2 and 3, show that Maay dialect has 9 short vowels with their corresponding long ones and a central vowel. The illustrated vowels are front vowels, back vowels and a central vowel.

#### 2.1.1 FRONT VOWELS

Front vowels are vowels produced in the front of the mouth. The Maay dialect has two high front vowels, [i] and [1]. The vowel [i] is [+ATR] while [1] is [-ATR]. Other front vowels include a mid high font vowel [e] and a mid-low front vowel, [ $\epsilon$ ]. There is also a low front vowel, /a/. All the front vowels in the Maay dialect have their corresponding long ones and they are all unrounded. The following data illustrates the front vowels in the Maay dialect using minimal pairs:

(3)	Phoneme	Orthography	Transcription	Gloss
	[i]	hir	/hir/	wave
	[i:]	hiir	/hi:r/	shave
	[I]	hir	/h⊥r/	disciples
	[1:]	hiir	/h1:r/	fat
	[e]	ger	/ger/	edge
	[e:]	qeer	/ge:r/	a young she camel/cow.
	[3]	jer	/d3ɛr/	a mature domestic animal
	[:3]	jeer	/dʒɛ:r/	a hippo
	[a]	sar	/sar/	a building
	[a:]	saar	/sa:r/	put/ a traditional dance

#### 2.1.2 BACK VOWELS

In producing the back vowels, the tongue is close to the upper or back surface of the vocal tract. The body of the tongue is higher in the high back vowel, [u] and lower in the low back vowel, [a] (Ladefoged 1982:12-13). The Maay dialect has two high back vowels, [u] and [ $\upsilon$ ] with their corresponding long ones, [u:] and [ $\upsilon$ :]. The [u] is a tense back rounded vowel while [ $\upsilon$ ] is a lax back rounded vowel. The dialect also has two mid back vowels, [o] and [ $\upsilon$ ] with their corresponding long ones. The vowel [ $\upsilon$ :] can be described as a tense mid-high back rounded vowels while [ $\upsilon$ ] is a lax mid-low back rounded vowel. The following data illustrates back vowels in the Maay dialect using minimal pairs:

(4)	Phoneme	Orthography	Transcription	Gloss
	[u:]	buur	/bu:r/	mountain
	[u]	bur	/bur/	hill/ a morsel of food
	[ʊ]	sung	/soŋ /	poison
	[U:]	suung	/sv:ŋ/	belt
	[0]	og	/?og/	know
	[0:]	oog	/?o:g/	flame
	[၁]	ol	/?ə1/	war
	[ɔ:]	ool	/?ɔ:l/	amniotic fluid

The data in (4) shows that in the Maay dialect, the length of the vowel creates change in meaning. The vowels [i, e, u, o] are [+ATR] while [I,  $\varepsilon$ , a,  $\varepsilon$ ,  $\upsilon$ ] are [-ATR]. According to (Tosco 1997:16), the central vowel /ə/ is exceptional in so far as the plus or minus [ATR] tract is irrelevant to it. It can also be observed from the data that the orthography of the language is underrepresented since vowels which are contrastive are written in the same way. Hence, the

writing system of this language can be misleading. The use of diacritic marks on some of the vowels could solve this problem.

#### 2.1.3 THE CENTRAL VOWEL -/Ə/

According to Tosco (1997:16), the centralized vocalic phoneme, /ə/ is found in the *Tuni* dialect which is closely related to the Maay dialect. He states that /ə/ is found in word final position and occasionally word internally, but never word initially. In the Maay dialect spoken in Mandera the central vowel /ə/ is a short form of /a/. The following data illustrates words with this phoneme:

(5)	Orthography	Transcription	Gloss		
	qaraaba	/ gara:βə/	relatives		
	lamma	/lam:ə/	two		
	barra	/bar:ə/	tomorrow		

#### 2.1.4 DIPHTHONGS

Diphthongs refer to movement from one vowel to another within a single syllable (Ladefoged 1982:26). According to Catford (1988:116) a diphthong is not perceived as two separate vowels, it is perceived as, a transitional, gliding, sound starting at the first element and gliding towards the second element. In the Maay dalect, a diphthong involves a sequence of a long vowel and a short vowel or a sequence of two short vowels. The dialect has got both long and short diphthongs. The following data illustrates seven long and six short diphthongs:

Long Diphthongs

(6)	Phoneme	Orthography	Transcription	Gloss
	[e:i]	eey	/?e:i/	dog
	[ <b>a:</b> ʊ]	aau	/? <b>a:</b> ʊ/	father
	[1:3]	eey	/∫εlε:ι /	yesterday
	[a:1]	aay	/d <b>3</b> a:1/	gravel
	[o:u]	OOW	/o:ukə/	tonight
	[o:i]	ooy	/ho:i/	dwelling
	[0:1]	ooy	/kɔ:1/	come

Short Diphthongs

(7)	Phoneme	Orthography	Transcription	Gloss
	[ei]	ey	/deimə/	glance
	[ <b>a</b> U]	au	/?av/	thatches
	[13]	ey	/hɛıs/	drizzle
	[a1]	ay	/baīlə/	neglected
	[ou]	ow	/gou/	edge
	[၁ʊ]	ow	/ucb/	hit

#### 2.1.5 DISTINCTIVE FEATURE MATRIX OF THE MAAY VOWELS

The distinctive features of the vowels of the Maay dialect are significant in analyzing rules that affect morphophonological processes. As indicated earlier, the Maay dialect has both long and short vowels. This study treats length as a feature and will consider the Maay dialect long vowels as having an underlying sequence of two identical vowels. Similarly, the study will not treat diphthongs as separate vowels but rather as a combination of two short vowels or a sequence of a

long and a short vowel. Table 1 below highlights the distinctive features of the vowels of the Maay dialect:

	i	Ι	e	3	а	u	σ	0	Э	ə
High	+	+	-	-	_	+	+	-	-	-
Back	_	_	_	_	_	+	+	+	+	-
Low	_	_	_	_	+	_	_	_	_	-
Central	-	_	-	-	_	-	-	-	-	+
ATR	+	_	+	_	_	+	_	+	_	

Table 1: The distinctive features of the vowels of the Maay dialect

#### 2.2 CONSONANTS

The consonant inventory of the Maay dialect is different from the standard Somali dialect. This is because the Maay dialect does not have the voiceless and the voiced pharyngeal fricative,  $/\hbar/$ / $^{C}$ /, and the voiceless uvular fricative, /x/, which are very common in the Standard Somali. This study identifies thirteen obstruents, two semi vowels, /w, j/, two liquids, /l, r/ and four nasals /m, n, p, ŋ/ as shown by table 2 below. The study also identifies five pre-nasalized consonants.
Table 2: The	inventory of	of the Maay	/ dialect	consonants
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	Bi-	Labio-	Dental	Alveo-	Alveolar	Palato-	Palatal	Velar	Glottal
	Labial	dental		dental		alveolar			
Plosive	b			d				g	
				t				k	2
Nasal	m				n		'n	ŋ	
Fricative	β		ð					Y	
		f			S	ſ			h
central							j	W	
Approx.									
Lateral					1				
approx.									
trill					r				
pre- nasalised consonant	mb				nd3, ms, nt			ŋk	

Table 2 above shows that the Maay dialect has the following nine places of articulations: bilabial, labio-dental, dental, alveo-dental, alveolar, palato-alveolar, palatal, velar and glottal. The table also shows the dialect has six plosives and seven fricatives. The Maay dialect has both voiced and voiceless consonants. Table 3 indicates examples of words illustrating the Maay dialect consonants.

IPA Symbol	Orthography	Phonetic Transcription	Gloss
[b]	b	/bari:s/	rice
[t]	t	/t̪oːrə /	knife
[d]	d	/d̪amɛ:r/	donkey
[k]	k	/kal/	pestle
[9]	g	/gurə/	house
[m]	m	/mi:s/	table
[n]	n	/nɔlal/	life
[ɲ]	n	/ɲa:ɲʊ:r/	cat
[ŋ]	ng	/saŋ/	nose
[f]	f	/far/	finger/handwriting
[ð]	d	/haðag/	a rope
[s]	S	/sinid/	year
[ʃ]	sh	/ʃɛlɛ:ɪ /	yesterday
[Y]	q	/mɛvɛd̯/	leather
[h]	h	/hɛ:s/	song
[j]	У	/jer/	small
[w]	W	/wala:1/	brother
[r]	r	/eriŋ/	goats
[1]	1	/haðal/	talk
[β]	b	/saβu:1/	maize cob
[5]	a	/?ar:ə/	soil
[nk]	nk	/ŋka:r/	curse
[nd <b>3</b> ]	nj	/ndʒir/	lies (noun)
[ms]	ms	/msa:r/	axe
[nt]	nt	/nțır/	fumble
[mb]	mb	/mba:r/	ring worm

Table 3: Examples of words showing the Maay dialect consonants

The plosives /t/ and /d/ are alveo- dental in the Maay dialect. In their articulation, the tip of the tongue touches the inner surface of the upper teeth while the blade of the tongue touches the alveolar ridge. When the voiced plosive consonants [d, b, g,] occur at the end of a word, they are often unreleased in the sense that the articulators do not come apart. For example,

(8)	Orthography	Transcription	Gloss
	laab	[la:B]	corner
	shiid	[∫i:d̪ ]	stone
	lug	[lបថ្វ]	leg

The voiceless alveolar plosives, /t/ and /k/ become exploded when they occur as a final stop at the end of a word producing an extra vowel (shwa). For example,

(9)	Orthography	Transcription	Gloss
	bakta	[bakt <sup>h</sup> ə]	corpse
	qaata	[qa:t <sup>h</sup> ə]	spoon
	shooka	[∫ɔ:kʰə]	axe
	tooka	[tə:k <sup>h</sup> ə]	shift

In the Standard Somali dialect, the voiceless stops become aspirated when they occur in initial position and before other consonants (Gabbard 2006:7). Gabbard used a spectrogram to analyse his data. In the Maay dialect, voiceless plosives become aspirated when they occur in initial position and when followed by the central vowel, *shwa* (ə) at the end of a word. Examples of aspirated voiceless plosives in initial position are:

- (10) [k<sup>h</sup>o:b] mug
  - [t<sup>h</sup>uf] spit (verb)

The voiceless plosives are not aspirated when they occur in medial position or when they occur at the end of a word before long and short vowels. For example,

(11) /farto / one finger

/bike:rə/ a cup

Each of the phonemes, /t/ and /k/, has two allophones which are in a complementary distribution since they occur in different environment.

(12)  $/t/ \longrightarrow [t], [t^h]$  $/k/ \longrightarrow [k], [k^h]$ 

The following rule illustrates aspiration in the Maay dialect:



The above phonological rule states that voiceless plosives become aspirated at word-initial or at word-final.

According to Paster (2006:75) the phoneme [ $\beta$ ] and [ $\delta$ ] occur only in surface forms and are not posited as phonemes in the Maay dialect spoken in the Lower Juba of Somalia. The phoneme [ $\beta$ ] is an allophone of the sound /b/ in both Maay and standard Somali dialect used in Kenya. The two phonemes are in complementary distribution. The phoneme /b/ becomes [ $\beta$ ] when it occurs between vowels. The following rule illustrates this phenomenon:

(14) /b/  $\longrightarrow$  [ $\beta$ ]/ [+syll]  $\longrightarrow$  [+ syll]

The above rule can be formally written as follows:



The phoneme  $[\delta]$  occurs as an allophone of / d/ and occurs as a phoneme on its own in the Maay dialect used in Mandera County. The following data illustrates that the phoneme  $[\delta]$ also occurs as an underlying form in the Maay dialect used in Mandera County since it occurs in the root of the following words:

(16) /biðe:r/	bald
/ka:ðə/	urine
/hoðə /	ghost
/bʊðə/	powder

The phonemes /d/ and  $/\partial/$  are in complementary distribution.  $/\partial/$  occurs only between vowels while /d/ occurs in other contexts. This information can be represented as follows:

(17)  $/d/\longrightarrow$  [ð]/ [+ syll] \_\_\_\_ [+ syll]

The above rule can be formally written as follows:



The sound [v] occurs as a surface form which is derived from the underlying phoneme of /g/. The two phonemes /g/ and [v] are in complementary distribution since /g/ occurs in word initial or before other consonants while [v] occurs between two vowels. The following rule illustrates change of /g/ to [v]:

(19) 
$$/g/ \longrightarrow [v] / [+ syll] \longrightarrow [+ syll]$$

The above rule can be formally written as follows:

$$(20) \left( \begin{array}{c} - \operatorname{son} \\ - \operatorname{cont} \\ - \operatorname{del rel} \\ + \operatorname{back} \\ + \operatorname{voice} \end{array} \right) \longrightarrow \left( + \operatorname{cont} \right) / [+ \operatorname{syll}] \longrightarrow [+ \operatorname{syll}]$$

The two semi-vowels in Maay dialect /w/ and /j/ occur in the same phonetic environment such as word initial and medial position but not in word-final. The following examples illustrate occurrence of semi-vowels:

(21) /war/	news
/awodٍ/	power
/jer/	small
/haßarjɛr/	maternal aunt

In the Maay dialect, the glottal stop [?] occurs in word initial, word-medial, and word-final. For example,

(22)	/?ahə/	mother
	/ba?aʊ/	a cursed person
	/gu?/	autumn

### 2.2.1 AFFRICATE

The Maay dialect has only one affricate, [dʒ] which occurs in initial and medial position of the word but not in word final. The following are words that have this phoneme:

(23)	Orthography	Transcription	Gloss
	jaajuus	/dʒa:dʒʊ:s/	spy
	jiis	/d <b>3</b> i:s/	cripple
	raja	/rad3ə/	a child who lost his mother

# 2.2.2 PRE-NASALISED CONSONANTS

Herber (1975, 1977) quoted by Tak (2011:129) defines prenasalised consonants as a nasal followed by a consonant, which function unitarily as a single segment. This study identifies five pre-nasalised consonants that behave like single consonants and normally occur in word initial position. The following data illustrates these pre-nasalised consonants in the Maay dialect:

(24)	Phoneme	Transcription	Gloss
	[nk]	/ŋka:r/	curse
	[nt]	/nțır/	fumble
	[nd <b>3</b> ]	/nd3ir/	lies
	[ms]	/msa:r/	axe
	[mb]	/mba:r/	ring worm

The above data shows that the prenasalised consonants in the Maay dialect involve a sequence of nasal + voiced or voiceless consonants. The nasal is also homorganic with the following consonant. A part from the various consonants discussed above, the Maay dialect also has implosives which undergo morphophonological process. Paster (2006:75) identified three types of implosives which are found in the Maay dialect used in the Lower Juba of Somalia: the voiced

velar implosive, [g], the voiced palatal implosive [f] and the voiced alveolar implosive, [d]. These implosives are also found in the Maay dialect spoken in Mandera County and they occur in word initial and medial position but not in word final. The following data illustrates the three types of implosives:

(25)	Orthography	Transcription	Gloss
	qara	/garə/	water melon
	baqal	/bagal/	horse
	jiif	/fi:f/	sleep (noun)
	tooja	/ t̪ɔ:ʃə/	a wild cow/camel that cannot be milked
	dhooba	/dˈɔ <b>:βə</b> /	mud
	qandha	/gandə/	fever

# 2.2.3 LONG CONSONANTS

The Maay dialect has long consonants. Some of these long consonants are phonemic while others are not. The following data illustrates long consonants /r:/ and /l:/ using minimal pairs:

(26)	Orthography	Transcription	Gloss
	farag	/farag/	the edge of a cloth
	farrag	/far:ag/	forested valley
	ira	/irə /	sun
	irra	/ir:ə /	grey hair
	hala	/halə /	she camels
	halla	/hal:ə /	the she camel

The above data illustrates that changing the length of the consonants /l/ and /r/ creates change in meaning. Other consonants which are lengthened include /t:/, /d:/, /g:/, /n:/ and /m:/ For example,

(27)	Orthography	transcription	Gloss
	harta	/hartə /	husband
	Hatta	/hat:ə /	now
	god	/ god/	hole
	qudda	/gudːə/	committee
	hoog	/ho:g/	strength
	hegga	/heg:ə/	there
	binang	/b1na:ŋ/	outside
	dannə	/ d̪an:ə/	a type of tree
	timir	/timir/	dates
	lamma	/lam:ə/	two

# 2.2.4 Distinctive feature matrix for the Maay dialect consonants

The distinctive features of the Maay consonants are important in analyzing the morphophonological processes that affect the verb. The study will not consider long consonants as separate phonemes but rather a combination of two short segments and hence length will be treated as a feature. Table 4 below shows the distinctive features of the consonants of the Maay dialect:

	Pho	nem	es &	the	eir fo	eatu	res															
	b	t	d	k	g	5	β	f	s	ſ	h	ð	Y	d3	1	r	m	n	ŋ	ŋ	w	j
voice	+	_	+	_	+	_	+	_	_	_	_	+	+	+	+	+	+	+	+	+	+	+
cons	+	+	+	+	+	_	+	+	+	+	_	+	+	+	+	+	+	+	+	+	_	_
syllabic	_	_	_	_	_	_	_	_	_	_	_	_	_	_	+	+	+	+	_	_	_	_
nasal	_	_	_	_	_	_	_	_	_	_	I	_	_	_	_	_	+	+	+	+	_	
cont	_	_	_	_	_	_	+	+	+	+	+	+	+	_	+	+	_	_	_	_	+	+
high	_	_	_	+	+	_	_	_	_	+	_	_	+	+	_	_	_	_	+	+	+	+
back	_	_	_	+	+	+	_	_	_	_	+	_	+	_	_	_	_	_	+	_	+	-
low	_	_	_	_	_	+	_	_	_	_	+	_	_	_	_	_	_	_	_	_	_	-
sono	_	_	_	_	_	+	_	_	_	_	+	_	_	_	+	+	+	+	+	+	+	+
lateral	_	_	_	_	_	-	_	-	_	_		_	_	_	+	_	_	_	_	_	_	-
sibilant	_	_	_	_	_	_	_	_	+	+	_	_	_	_	_	_	_	_	_	_	_	_
ant	+	+	+	_	_	_	+	+	+	_	_	+	_	_	+	+	+	+	_	_	_	_
_	_	+	+	_	_	_	_	_	+	+	_	+	_	+	+	+	_	+	_	_	_	_
strident	_	_	_	_	_	_	_	+	+	+	_	_	_	_	_	_	_	_	_	_	_	_

Table 4: The distinctive feature matrix of the Maay dialect consonants

# 2.3 THE VERBAL TYPES

The types of verbs in the Maay dialect include main verbs, infinitive verbs and auxiliaries.

# 2.3.1 MAIN VERBS

The main verb is generally composed of the root of the verb. A root refers to a base that cannot be analysed any further into constituent morphemes (Hasbelmath & Sim 2010:21). In the Maay dialect, most of the verb roots can stand on their own. The imperative form of the verb is similar to the root of the verb. The following data illustrates some verb roots:

(28)	Orthography	Transcription	Gloss
	fur	/for/	open
	waraab	/wara:b/	drink
	gal	/gal/	enter
	sug	/sug/	wait

### 2.3.2 INFINITIVE VERBS

To form the infinitive verb you attach the morpheme /-o/ to the end of the root of the verb. For example,

(29)	Orthography	Transcription	Gloss
	a. sug-o	/suvo/	to wait
	b hiir-o	/hi:ro/	to shave
	c. fur-o	/foro/	to open
	d. waraab-o	/wara:βə/	to drink

The above data illustrates that the attachment of the infinitive marker /-o/ to the root of the verb leads to a root controlled vowel harmony. The infinitive marker /-o/ changes depending on the [ATR] quality of the root of the verb attached to it. In example (29a) and (29b), the infinitive

marker is attached to a root with [+ATR] vowel and becomes [+ATR]. However, in example (29c) and (29d) the infinitive is attached to a root with [-ATR] vowel and changes to its variant of [-ATR].

# 2.3.3 AUXILIARY VERBS

Auxiliary verbs are dependent verbs which cannot stand on their own. In the Maay dialect, auxiliary verbs indicate mainly the future tense and the present continuous aspect. For example,

(30) a) Gal-n-i. 'We entered'. enter-1pl-past
b) Gal-a doong-n. "We will enter." enter -futu-1pl

In the above sentences the morphemes /-*i*/ marks the past tense in example (30a). In (30b) the auxiliary verb *doong* is used to indicate the future. Additionally, the marker /-a/ marks future on the main verb.

### 2.4 The Morphological Structure of the Verb of the Maay Dialect

Mberia (1993:73) while analyzing Kitharaka language states that Kitharaka verbs may be seen in terms of a series of slots which accommodate morphemes of different paradigms. Similarly, the verb stem of the Maay dialect of Somali can have a number of suffixes, prefixes and circumfixes. The prefix, suffix and circumfix slots are occupied by different morphemes which mark negation, gender, subject, object, postpositions, tense, aspect, mood, middle voice etc which are explained below:

1. Gender morpheme: The third person female singular is generally marked for gender in Somali and mainly occupies the first slot in the suffix position of the verb. For example, the following data illustrates the marking of gender on the third person singular.

(31) Waraab-t-i "She drank." drink- 3Fsg-past Arag-t-i "She saw." see-3Fsg-past

It is evident from the data that the phoneme /-t-/ marks the third person singular female. There are cases where the third person singular female is marked by /-s-/as shown by the following sentence in the past progressive:

(32)	Amina beer-a fal-aa- <b>s</b> -i	"Amina was digging a farm."
	Amina farm dig-3Fsg-past prog.	

2. The subject morpheme: The Maay dialect marks first, second and third person obligatorily for number. The subject morpheme mainly occupies the first slot after the verb. The data below shows the subject slot in the verb for singular persons:

(33)	a) 1sg.	roor-i	/rɔ:ri/	I ran.
		run-1sg/past		
	b) 2sg.	roor-t-i	/rɔ:rti/	You ran
		run- 2sg-past		
	c) 3Msg.	roor-i	/rə:ri/	He ran.
		run-3Msg/past		
	d) 3Fsg.	roor-t-i	/rə:rti/	She ran.
		run-3Fsg/past		

The above data illustrates that the first person singular and the third person singular male are marked by /-i/ which also marks the past tense, underlying the fusion of the two morphemes. The second person singular and the third person singular female are marked by /-t-/. The following data illustrates the subject position in the verb for plural persons:

(34)	a) 1Pl.	iyaar-n-i	/ija:rn1/	"We played."
		play-1pl-past		
	b) 2Pl.	iyaar-t-eng	/ijar:tɛŋ/	"You played."
		play- 2pl-past		
	c) 3Pl.	iyaar-eng	/ija:rɛŋ/	"They played."
		play-3pl/past		

The first person plural is marked by /-n-/, and the second person plural is marked by /-t-/ while the third person plural and the past tense are fused together in /-eng/.

3. Tense morpheme: In the Maay dialect, the past tense is generally marked by /-*i*/ except for the second and the third person plural which is marked by /-*eng*/ as shown by the above examples. The subject morpheme and the tense morpheme are fused together in the first person singular and the second person singular male.

4. Aspect morpheme: The aspect morpheme indicates a completed or an uncompleted action. In the Maay dialect, the completed action is indicated by the past tense marker (Refer to the tense morpheme). The imperfective markers include the continuous aspect suffix. For example,

(35) Usa kooy-a haay "He is coming." he come-pres.prog.

The continuous aspect is marked by the auxiliary verb '*haay*' together with the suffix /-a/ marked on the main verb as shown by the above data.

5. Causative suffix: The causative verb means Y causes X to achieve state S' (Saeed 1999:570). In the Maay dialect, the causative marker occupies the first suffix slot which is immediately after the main verb. The following data shows that the causative in Maay dialect is marked by /-si/ or /-i/:

(36)	a) War-ka faf-i.	"Spread the news."
	news-Def spread-cause	
	b) John unug-a dereer-si-yi.	"John made the child walk

b) John unug-a dereer-si-yi. "John made the child walk." John child-Def walk-cause-past 6. The middle voice morpheme: The middle voice describes an action that is inherently reflexive, that is, where the subject is both the agent of the action and the entity affected or patient (Saeed 1997: 572). In the Somali language, the middle voice is formed either by a nominal or verbal root followed by the optional causative root extension, followed in turn by the root extension that is the morphological marker of middle voice (Bruno and Puglielli 1984:515). The following data from the Maay dialect illustrates the slot of the middle voice:

(37) a) Roog-s-oi. "Stop yourself." stop -2sg-M.voice
b) Fur-oi "Open it for yourself" open -M.voice

The above data shows that the middle voice is marked by */-oi* / and occupies the second slot as in example (37a) or the second slot as in the example (37b). The data also shows that the middle voice is found mainly in the commands unlike the reflexive which is found in both commands and statements. For example,

(38) Ana is-bar-i "I taught myself." I -refl-teach-past

7. The object marker: The morpheme that marks the object occupies the first prefix slot of the main verb. The data below shows the object slot for singular and plural persons:

(39) a) 1Sg.	Ali <b>i</b> -tum-i.	"Ali beat me."
	Ali me-beat-past	
b) 1Pl.	Ali <b>nə</b> -tum-i	"Ali beat us."
	Ali us-beat-past	
c) 2sg.	Ali <b>kə</b> -tum-i.	"Ali beat you."
	Ali you-beat-past	
d) 2Pl.	Ali <b>siin</b> -tum-i	"Ali beat you."
	Ali you (pl.)-beat-past	

The object slot for the first person singular and plural is marked by /i-/ and /n-/ respectively. The second person singular is marked by /k-/ while the second person plural is marked by /siin/. The third person singular and plural is unmarked. The object slot for the third person is sometimes occupied by a noun hence conforming to the norm. For example,

3Pl. Ali tuugə tum-i "Ali beat thieves." Ali thieves-beat-past

8. Postpositions: A postposition is like a preposition, except that it comes after the noun, (*post-*) rather that before it, (*pre-*). Languages with SOV order are likely to have postpositions (Haspelmath & Sim 2010:152). The dominant word order in Somali is SOV, hence postpositions are placed in immediate preverbial position. The following data illustrates postpositions in the Maay dialect:

(41) a) 1sg.	Tom irid-a <b>o</b> -fur-i	"Tom opened the door for me."		
	Tom door-Def me/for-open-past			
b) 1Pl.	Tom irid-a <b>no</b> -fur-i	"Tom opened the door for us."		
	Tom door-Def us/for-op	en-past		
c) 2sg.	Tom irida <b>ko</b> -furi	"Tom opened the door for you."		
	Tom door-Def you/for-	open-past		
d) 2Pl.	Tom irida siin <b>ku</b> -fur-i	"Tom opened the door for you."		
	Tom door-Def you (pl.)	)-for-open-past		
e) 3sg/3Pl. Tom irid-a <b>ku</b> -fur-i "Tom opened the door for him/them.				
Tom door-Def him/her/them/for-open-past				

The data in example (41) shows that the postpositions and the benefactive are marked in the same way. The postposition is not marked independently but it is fused with the benefactive pronoun except for the second person plural where the postposition is marked by */ku/ and* the second person plural is marked by *siin* in example (41d). The postposition for the third person

singular and the third person plural are marked in the same way. Postpositions which are not marked on the benefactive pronouns are independent. For example,

- (42) a) Ana Ida **ku** koy-i "I came from home." I- home-from -come-past
  - b) Ana usa **la** koy-i. "I came with him." I -him -with -come-past

The postpositions, /ku-/ (with) and /la-/ (from) are independent, and occur in the preverbial after the noun position, they are called postpositions because they follow the noun.

9. Negation: When negating the future tense and the present progressive aspect, the particle *lmal* is prefixed to the main verb as in the following examples:

(43)	(a) Ali	Kooy-a	haay	"Ali is coming."				
	Ali	come-pre	es.prog					
	Ali	ma Kooy-	a haay	"Ali is not coming."				
	Ali l	Neg-come-	pres.prog					
	(b) Ali kooy-a doon "Ali will come."							
	Ali	come-Futu	ure					

Ali **ma** kooy-a doon "Ali will not come." Ali-Neg.-come-Future

Circumfixation is used in the negation of the past progressive and the past tense as shown by the following data:

(44)	a) Amina <b>ma</b> roor-a- <b>na</b>	"Amina was not running."
	Amina Negrun-past.pro	g-Neg
	b) John <b>ma</b> -kooy- <b>na</b>	"John did not come."
	John Negcome-Neg	

The data in (44a) and (44b) shows that in the negation of the past tense and the past progressive, the root of the verb is prefixed with /ma/ and suffixed with /ma./ to express negation.

10. Directionality: The direction towards the speaker is marked by the particle */ha/* which occurs in the prefix position of the verb as shown by the following examples,

- (45) a) Tuur! "Throw!" Imp –throw/2sg
  b) Ha tuur! "Throw towards me." Direc-imp-throw
  c) Tuur-a! "All of you throw it." Imp –throw-2pl
  - d) Ha tuur-a "All of you throw towards me."Direc-imp-throw-2PL

11. Conditional prefix: The following data illustrates conditional prefix in the Maay dialect:

- (46) a) Ho kooy-a and behe "If he comes, I will go." cond-come-pres- I-go
  - b) Ho kooy-i arag-a fad-ni "If he came, we would have seen." cond.- come-past see-would-1pl
  - c) Ho kooy-a lahaay araga fad-ni. "If he had come, we would have seen him." cond.- come-past. perf see-would-1pl

The conditional prefix is marked by the particle /ha/ and expresses a hypothetical situation in the present, past and the past perfect. It can be used in both singular and plural forms.

12. The reflexive morpheme: This is a morpheme that indicates that the subject and the patient are coreferential. For example,

(47) a) Ali **is**-gub-i "Ali burnt himself." Ali reflex-burn-past

b) Gabar-ta is-gub-t-i "The girl burnt herself." girl-Def reflex-burn-3Fsg-past

In the Maay dialect, the reflexive marker */is-/* occupies the first prefix slot. Other prefixes which occupy this slot include the object marker and postpositions. Whereas the middle voice indicates an action that someone does for his own benefit, the reflexive shows an action that the agent does by himself with the exclusion of others. The data in example (47) shows that the agent burnt himself or herself, indicating that no one else was involved in this action other than the agent. However, middle voice in the Maay dialect usually occurs in commands or instructions where the agent is either warned or advised to do something that will benefit him/her instead of depending on others. Both reflexives and reciprocals are marked in the same way in the Maay dialect.

#### 2.5 CONCLUSION

Phonology and morphology both play a role in morphophonological processes. Hence, this chapter has discussed the consonantal and vowel inventory of the Maay dialect. The study has identified thirteen obstruents, two semi-vowels, two liquids, and four nasals. Long consonants in the Maay dialect were also discussed. Implosives which include, voiced palatal implosive /f/, voiced velar implosive /g/, and voiced alveolar implosive, /d/ were briefly mentioned. The study identified nine short vowels with their corresponding long ones and a central vowel. The vowels [i, e, u, o] are [+ATR], while [1,  $\varepsilon$ ,  $\Im$ , a,  $\mho$ ] are [-ATR]. The central vowel, / $\vartheta$ / is neither plus or minus [ATR]. The study did not consider long vowels as distinct phonemes but rather a combination of two identical vowels. The distinctive features of the consonants and the vowels were analysed. The chapter has also briefly discussed the verbal types of the Maay dialect and highlighted the morphological structure of the verb.

# CHAPTER 3: MORPHOPHONOLOGICAL PROCESSES IN THE CONSONANTS OF THE MAAY DIALECT

# **3.0 INTRODUCTION**

This chapter will identify and analyse the morphophonological processes in the consonant of the Maay dialect. The various types of consonant morphophonological processes will be identified and supported with data from the dialect. The major morphophonological processes that will be analysed in this chapter include consonant weakening and strengthening. In section 3.1 the study will discuss consonant weakening processes such as spirantization, consonant deletion and word-final obstruent devoicing. Consonant strengthening processes such as consonant lengthening and consonant coalescence will be discussed in section 3.2. In section 3.3 and 3.4 the study will analyse palatalization and velar nasal fronting respectively. Homorganic nasal assimilation will be discussed in section 3.5 and a conclusion of the whole chapter will be presented in section 3.6. The Natural Generative Theory will be used to analyse the morphophonological consonant processes that affect the verb. General rules that cause the morphophonological processes will be analysed using the distinctive features outlined in chapter 2.

# **3.1 CONSONANT WEAKENING**

Consonant weakening also called lenition refers to "A variety of kinds of changes in which the resulting sound after the change is conceived of as somehow weaker in articulation than the original sound" (Campbell 1998:41). Consonant weakening in the Maay dialect include spirantization, consonant deletion and word-final obstruent devoicing.

# **3.1.1 SPIRANTIZATION**

Spirantization is a process where an affricate or a stop becomes a fricative. (Campbell: 1998:42) Oral stops such as /b/, /d/, /g/, /t/ and /k/ becomes fricatives in the Maay dialect. The data in (48) illustrates how the voiced bilabial plosive, /b/ changes to voiced bilabial fricative, [ $\beta$ ] between vowels:



The data in (48) above indicates that /b/ changes to  $[\beta]$  when it is preceded by a vowel and followed by a suffix starting with a vowel such as the past tense suffix for singular /i/ or /1/ or the past tense suffix for the third person plural /eŋ/ or /ɛŋ/. The phoneme /b/ remains the same when it is followed by a consonant as shown by the following data:



The information in the data (49) can be summarized as follows:

(50) /b/  $\longrightarrow$  [ $\beta$ ]/ V  $\longrightarrow$  V

The following data in (51) shows that /g/ changes to [Y] between vowels:

(51) /du:g + i / → [du:vi] I/he buried. bury-1sg/3Msg/past



The data in (51) shows that the phoneme /g/ changes to [v] when it occurs in intervocalic position. The velar plosive /g/ does not change when it is followed by another consonant. For example,



The information in the data (51) can be illustrated as follows:

(53)  $/g/ \longrightarrow [v] / V \longrightarrow V$ 

The phoneme d/d changes to  $[\delta]$  when it occurs between vowels as shown by the following data:

(54)  $/ \operatorname{rid} + i / \longrightarrow [ri\partial i]$  I/he dropped. drop-I/3Msg /past  $/ \operatorname{rid} + en / \longrightarrow [ri\partial en]$  They dropped. drop-3pl /past  $/ d3i:d + en / \longrightarrow [d3i:\partial en]$  They pulled. pull-3pl /past  $/ \mathfrak{g}a: \mathfrak{g} + \mathfrak{I} / \longrightarrow [\mathfrak{g}a: \mathfrak{d}\mathfrak{I}]$  I/he carried. carry-1sg/3Msg/past

The phoneme /d/ does not change when it is followed by a consonant such as /n/. Consider the data in (55):



The information in the data (54) which shows the change of /d/ to  $[\delta]$  can be summarized as follows:

(56)  $/d/ \longrightarrow [ð] / V \longrightarrow V$ 

In all the above cases of spirantization, the voiced plosives change to fricatives. However, there are certain cases where the voiceless plosive /t/ and /k/ changes to fricatives. The /t/ in the Maay dialect marks the second person singular/ the third person female singular and the second person plural. The phoneme /t/ changes to /ð/ when the root word ends in a vowel and it is then followed by another vowel as shown by the example in (57):

(57)  $/s_{I} + \underline{t} + \underline{i} / \longrightarrow [s_{I}:\tilde{\mathbf{0}}_{I}]$  She/you gave. give -3Fsg/2sg-past  $/s_{I} + \underline{t} + \varepsilon_{I} / \longrightarrow [s_{I}:\tilde{\mathbf{0}}_{\varepsilon_{I}}]$  You gave. give -2pl.-past  $/b_{I} + \underline{t} + \underline{i} / \longrightarrow [b_{I}:\tilde{\mathbf{0}}_{I}]$  She/you paid. pay -3Fsg/2sg.-past



The information in (57) above can be summarized as follows:

(58)  $/ t / \longrightarrow [\tilde{d}] / V \longrightarrow V$ 

The /t/ does not change to  $/\delta/$  if it does not occur between vowels as shown by the following data:



The /k/ in the Maay dialect marks masculine gender. While the feminine marker /t/ is marked on both verbs and nouns, the masculine marker /k/ is only marked on nouns. When the morpheme /k/ occurs in intervocalic position it changes to [x] as shown by the following data:

(60)	/ salə + kə /	→	[saləvə]	The mat.
	mat-Masc/Def			
	/ gurə + kə /	•	[gurə¥ə]	The house.
	house-Masc /Def			
	/ korsə + kə /		► [korsə¥ə]	The chair.
	chair-Masc /Def			

 $/ hartə + kə / \longrightarrow [hartəvə]$  The man/husband.

Man/husband-Masc/Def

The data in (60) shows that when the morpheme /k/ which marks masculine and definiteness is suffixed to nuns ending in a vowel and followed by another vowel, it changes to [v]. If /k/ does not occur between two vowels it does not change to a fricative as shown by the following data:

(61) / god + kə / \_\_\_\_\_ [godkə] The hole.
hole-Masc /Def
/ sal + kə / \_\_\_\_\_ [salkə] The bottom.
bottom-Masc /Def
/ mi:s + kə / \_\_\_\_\_ [mi:skə] The table.
table-Masc /Def

The information in the data (60) can be summarized as follows:

(62) 
$$/k/ \longrightarrow [v] / V \longrightarrow V$$

The spirantization rule in the Maay dialect is morphophonological since it arises when the verb is inflected for the past tense. The following informal rule summarizes the information of the change of plosives to fricatives:



Hyman (1975: 63) formulated the following morphophonological rule that converts /b, d, g/ into  $[\beta, v, \delta]$ :



The study posits the following rule for spirantisation in the Maay dialect:



### 3.1.2 CONSONANT DELETION

In the Maay dialect, the voiceless alveolar dental /t/ marks feminine gender. When the suffix /t/ is attached to roots ending in /d/ the /t/ is deleted as shown by the following data:



It is important to note that the data in (65), /d/ does not change to a fricative when it occurs between two vowels because in its underlying form, it does not occur in intervocalic position.

The /t/ is not deleted when it is attached to roots ending in other consonants. For example,

(66)  $/ \operatorname{ror} + t + i /$  [rort i] She/you ran. run-3Fsg/2sg-past  $/\operatorname{ton} + t + \varepsilon_{\Pi} /$  [tont  $\varepsilon_{\Pi}$ ] You beat. beat-2pl -past  $/ \operatorname{gub} + t + \operatorname{en} /$  [gubten] You burnt. burn-2pl -past

The information in the above data can be summarized as follows:

(67)  $/t/ \longrightarrow \emptyset / [d] \# - [+ syll]$ 

The above rule can be formally written as follows:

(68) 
$$\begin{pmatrix} - \sin \\ - \cot \\ - \det re \\ + ant \\ + \cot \\ - voice \end{pmatrix} \rightarrow \emptyset / \begin{pmatrix} - \sin \\ - \cot \\ - \det re \\ + ant \\ + cor \\ + voice \end{pmatrix} \# ---+ [syll]$$

In the Maay dialect, the voiceless glottal fricative /h/ is deleted when it is followed by a consonant. The deletion of the glottal fricative can be considered a weakening process since it is a reduction as a result of the weakening of the sound. Consider the data in (69):

(69)  $/ \operatorname{kah} + n + 1 / \longrightarrow [\operatorname{kan} 1]$  We got up. get up-1pl-past  $/ \operatorname{kah} + \underline{t} + 1 / \longrightarrow [\operatorname{ka} \underline{t} 1]$  She/you got up. get up-2sg/3Fsg-past



The data in (69) above shows that /h/ at word-final is deleted when it is followed by an alveolar consonant such as /n/ which marks the first person plural, and /t/ which marks the second person singular, the third person female singular and the second person plural. The deletion of the consonant /h/ leads to root modification and avoids a cluster of a voiceless glottal fricative and a consonant which makes the articulation of the sound difficult. When the glottal fricative /h/ is followed by a vowel it is not deleted as shown by the following data:



The rule for the deletion of the glottal fricative can be informally written as follows:

(71) 
$$/h/ \longrightarrow \emptyset / \longrightarrow \# + [+ cons]$$

The study posits the following rule for the deletion of the glottal fricative in the Maay dialect:



# **3.1.3 WORD-FINAL OBSTRUENT DEVOICING**

Paster (2006: 84) states that in the Maay dialect used in Lower Juba of Somalia, "Word final dental stops tend to sound like /t/, and word final velars sound like /k/, while word-final labial stops vary between /b/ and /p/". In the Maay dialect used in Mandera County, /t/ and /d/ are both alveo-dentals. The two phones contrast in word initial, and word medial. When /d/ occurs at word-final it is pronounced like / t/ hence becoming devoiced as shown by the following data:



The opposition of voicing between the phonemes, /t/ and /d/ is neutralized in word-final position, in the sense that the pronunciation of /d/ occurring at word-final is similar to /t/. The phoneme /d/is the underlying form because the /d/ surfaces when it is followed by /t/ which marks the feminine gender as shown by the following data:



The data in (74) shows that the /d/ is the underlying form since it surfaces after the deletion of the consonant. Similarly, /k/ and /g/ are contrastive in word initial position, word-medial, but not in word-final. In the Maay dialect, when /g/ occurs at word-final it is pronounced like /k/ as shown by the following data:



The /g/ is the underlying form because it surfaces when it is followed by a suffix starting with a voiced consonant. For example,

(76)	/ ho:g + d̪ərə /	 •	[ho:gd̪ərə]	luck of strength.
	strength-luck			
	/ta:g + dorə / — ability-luck	 ->	[ta:gd̪ɔrə]	inability
	/ ha:g + dorə / —	<b>→</b>	[ha:gd̪ɔrə]	injustice
	justice-luck			

Some of the informants of this study could not definitely say for sure when asked to pronounce the words ending in the velar plosive whether they pronounce them with /g/ or with /k/. Out of the three informants one said he pronounces them as /g/, and two said they pronounce them as /k/. Similarly, when the informants were asked whether they pronounce words ending with /d/ as either /d/ or /t/, two said they pronounce with /t/, and one said he pronounces as /d/.

Hyman (1975:70) quoting Trubeztkoy (1939:78) states:

In neutralizable distinctive opposition, perception fluctuates: in positions of relevance both opposition members are clearly distinguished; in positions of neutralization, on the other hand it is often not possible to indicate which of the two had just been produced or perceived.

The above statement supports the perception of the informants of this study about the devoicing of obstruents at word-final in the Maay dialect. Obstruent devoicing rule is phonological since it contains only phonetic information. The phonological rule for obstruent devoicing at the end of a word can be informally written as follows:

(77) 
$$\begin{cases} / \mathfrak{g} / \\ / \mathfrak{g} / \end{cases} \longrightarrow \left[ \begin{bmatrix} \mathfrak{t} \\ [\mathfrak{k}] \end{bmatrix} \right] / \longrightarrow \#$$

Katamaba (1989:130) posits the following rule for obstruent devoicing:

[- Sonorant] \_\_\_\_\_ [- voice]/ \_\_\_\_\_ #

### 3.2 CONSONANT STRENGTHENING

Consonant strengthening also called fortition refers to a loosely defined notion that after the change the resulting sound is somehow stronger in articulation than the original sound was (Campbell 1998:41). Consonant strengthening in the Maay dialect include consonant lengthening and consonant coalescence.

### 3.2.1 CONSONANT LENGTHENING

Consonant lengthening refers to an increase in the duration of consonant pronunciation. Geminates, or long consonants, are formed by holding the articulatory position steady for two timing units rather than one (Alkire and Rosen 2010:44). Long consonants are known as geminates while short consonants are called singletons. In the Maay dialect, geminate consonants include /1: /, /r: / and /n: /. These geminates have their singleton counterparts which are /l/, /r/ and /n/. Gemination in the Maay dialect is phonemic. The data in (78) below illustrates the lengthening of the alveolar lateral, /l/:

(78)	$/h\epsilon l + t + I / \longrightarrow [h\epsilon l:I]$	She/you got.
	get- 2sg/3Fsgpast	
	$/ h\epsilon l + t + \epsilon \eta / \longrightarrow [h\epsilon l:\epsilon \eta]$	You got.
	get –2Plpast	
	$/ fal + t + I / \longrightarrow [fal:I]$	She/you dug.
	dig-2sg/3Fsg-past	
	$/ \operatorname{fal} + t + \varepsilon \mathfrak{g} / \longrightarrow [\operatorname{fal}:\varepsilon \mathfrak{g}]$	You dug.
	dig-2pl-past	
	/ gal + t + 1 / [gal:1]	She/you entered.
	enter-2sg/3Fsg-past	
	$/ \operatorname{gal} + t + \varepsilon \mathfrak{g} / \longrightarrow [\operatorname{gal}:\varepsilon \mathfrak{g}]$	You entered.
	enter-2pl-past	

The data in (78) shows that /l/ occurring at word-final is lengthened when it is followed by /t/ that marks the second person singular/ third person female singular, and the second person plural. The voiceless alveo-dental plosive /t/ assimilates in voicing to /l/ which occurs in the stem-final of the verbs. The following schema illustrates the assimilation of /l/ and /t/:

(79) 
$$lt > ll$$

The alveolar lateral, /l/ is also lengthened when it is followed by the alveolar nasal /n/ as shown by the following data:



The alveolar lateral /l/ is not lengthened when it is followed by a vowel as shown by the data in (81):



The data in (78) and (80) illustrates that /l/ is geminated when it is followed by the consonants /t/ and /n/. This information can be summarized as follows:

$$(82) \quad /l/ \longrightarrow [1:] / \longrightarrow \begin{bmatrix} t \\ n \end{bmatrix}$$

Similarly, /r/ is also lengthened in the Maay dialect. Consider the following data:



The gemination of /r/ also occurs when it is followed by the alveolar nasal as shown by the following data:

(84)  $/hir + n + i/ \longrightarrow [hir:ni]$  We closed. close-1pl-past  $/bar + n + i/ \longrightarrow [bar:ni]$  We taught. teach-1pl  $/dor + n + i/ \longrightarrow [dor:ni]$  We injected. inject-1pl.-past

The phoneme /r/ is not lengthened when it is followed by a vowel as shown by the following data:



According to the above data, /r/ gemination occurs when it is followed by /t/ and /n/. This information can be represented as follows:

$$(86) \quad /r/ \longrightarrow [r:] / - \left\{ \begin{array}{c} n \\ t \end{array} \right\}$$

Consonant gemination in the Maay dialect also seems to be a phonological feature. This is because, there are certain cases where the gemination of /r/ occurs in lexical items and is not morphologically triggered. For example,

(87) <b>Orthography</b>	Transcription	Gloss
a) barə	/barə/	east
barra	/bar:ə/	tomorrow
b) farag	/ farag/	the edge of a garment.
farrag	/far:ag/	a forested valley
c) Arab	/arab/	an Arab
arrab	/ar:ab/	tongue
d) warang	/waraŋ/	spear
warrang	/war:ang/	say your news.

The gemination of /r/ in the Maay dialect is phonemic as shown by the above data. Another consonant which is geminated in the Maay dialect is /n/. For example,



When the first person plural marker /n/ is attached to roots ending in /h/, the glottal fricative /h/ is deleted as shown by the above data. After the deletion of the glottal fricative, the nasal is lengthened. This information can be summarized as follows:

The rule that can be used to indicate the gemination processes in the Maay dialect is a morphophonological rule since the lengthening of the consonant /l/, /n/ and /r/ is influenced by the morphemes /n/ which marks the first person plural, and /t/ which marks the second person singular/ the third person female singular. The morphophonological rule for the gemination of /l/ /r/ and /n/ can be informally written as follows:

$$\begin{cases} 90 \\ / r \\ / n \\ \end{pmatrix} \longrightarrow \begin{cases} [1:] \\ [r:] \\ [n:] \end{cases} / (\emptyset h) # \longrightarrow C$$

The rule for consonant gemination in the Maay dialect can be formally written as follows:



The rule states that, syllabic consonants which are plus coronal become long in an environment before a word boundary followed by a consonant or after deletion of /h/ followed by a word boundary and a consonant.

### 3.2.2 CONSONANT COALESCENCE

Schane (1973:34) states that in consonant coalescence two contiguous consonants are replaced by a single one which shares features of the two original ones. In the Maay dialect, /t/ marks feminine gender while /k/ marks the masculine gender. The stative verb in the Maay dialect is marked by /n/. If the masculine marker /k/ follows a stative verb, the two morphemes coalesce together and the vowel in the suffix assimilates with the vowel in the root as illustrated by the following data:


The data in (92) above indicates that when /n/ and /k/ coalesce together they are replaced by a single segment [n]. The /t/ which marks the feminine gender does not coalesce with the stative marker /n/ when it follows it but the vowel in the suffix assimilates with the vowel in the root as shown by the following data:



The information in the above data can be summarized as follows:

(94) 
$$/n/ + /k/ \longrightarrow [n]/[+ syll] - [+ syll]$$

The morphophonological rule for the coalescence of the alveolar nasal /n/ which marks the stative verb and /k/ which marks the masculine gender can be written as follows:



### 3.3 PALATALIZATION

Palatalization is an assimilation of a consonant in relation to a higher front vowel, in terms of tongue position (Anttila 1972:72). Palatalization can generally be defined as an assimilation process where a back or anterior consonant is produced partly or fully in the palatal region. In the Maay dialect, the voiced velar plosive, /g/ becomes palato-alveolar affricate, /dʒ/ when the causative marker /-i/ is suffixed to words ending in /g/. For example,



The data in (96) shows that the point of articulation of the velar plosive, /g/ changes and becomes a palato-alveolar affricate,  $/d\mathbf{z}/$  due to the influence of the high front vowel, /i/ that marks the causative. The voiced velar plosive, /g/ also becomes palatal implosive when it occurs before the causative marker, /-i/. For example,

(97) / deg + i / \_\_\_\_ [defi] Bring him/her/it down come down-cause



In the Maay dialect, the process of /g/ becoming palatal implosive, [f] is more common than /g/ becoming palatal affricate, [dʒ]. It seems that there has been a process where /g/ first palatalized to [dʒ] before /-i/ and then it palatalized to [f]. These processes can be schematized as follows:

$$(98) \quad g > d\mathfrak{Z} > \mathfrak{f}^2.$$

The researcher's view that /g/ first palatalized to [d3] before it further palatalized to [f] is supported by the fact that in the Standard Somali dialect /g/ has palatalized to [d3] but not to [f]as shown by the following examples:



The place of articulation of the velar plosive /g/ is fronted before /i/ because the tongue is raised towards the palatal region in the anticipation of the high front vowel /i/. The palatalization rule of /g/ becoming [d3] or [f] can be informally written as follows:

(100) 
$$/g/ \longrightarrow \begin{cases} [d\mathbf{J}] \\ [f] \end{cases} / ----/-i/$$
 [causative]

<sup>&</sup>lt;sup>2</sup> The symbol > indicates the direction of palatalization.

Katamba (1989:118) posited the following rule for palatalization:



The study posits the following palatalization rule for the Maay dialect:



## **3.4 VELAR FRONTING**

According to Kristen & Anne (2013:118) "Fronting processes causes a segment produced in the back of the mouth to change to a segment produced at the front of the mouth." In the Maay dialect, the velar nasal  $/\eta$  / at the end of the root of a morpheme is fronted to become a bilabial nasal /m/ when it is followed by the vowel /i/ or /1/ which mark the past tense for singular and the first person plural. For example,



The velar nasal at the end of the root of a morpheme also becomes /m/ when it is followed by the vowel  $\epsilon$ / or  $\epsilon$ / which begins with the morpheme /  $\epsilon$ ŋ/ or /eŋ/ that marks the second and third person plural. Consider the following data:



There are few cases where the velar nasal is fronted to become an alveolar nasal /n/ when followed by the vowels /i/ or  $\epsilon$ . For example,

(104)  $/\int \varepsilon: \mathbf{n} + \mathbf{i} / \cdots \rightarrow [\int \varepsilon: \mathbf{n} \mathbf{i}]$  I/he brought. bring-1sg/3Msg /past

 $/\int \varepsilon: \mathbf{\eta} + \varepsilon \mathbf{\eta} / \longrightarrow [\int \varepsilon: \mathbf{n} \varepsilon \mathbf{\eta}]$  They brought.

bring-1sg/3Msg /past

The velar nasal does not change when it is followed by another nasal as shown in the following data:

(105) / a:ŋ + n + 1 / [a:ŋn1] we ate.
eat-1pl /past
/ toŋ+ n + 1 / [toŋn1] we beat.
beat-1pl /past

 $\int \varepsilon: \eta + n + 1 / \dots \quad [\int \varepsilon: \eta n I]$  we brought.

bring-1pl /past

The rule for the fronting of the nasal in the Maay dialect can be informally written as follows:



The study posits the following rule for the velar nasal fronting in the Maay dialect:



## 3.5 HOMORGANIC NASAL ASSIMILATION

In the Maay dialect, the benefactive is marked by a nasal prefix that indicates an action that is done for someone. The prefix nasal becomes homorganic with the following consonant. It exhibits regressive assimilation processes since it takes the place of articulation of the following consonant. The archiphoneme /N/ represents the various allophones of the nasal prefix. According to Mulder (1968:58) an archiphoneme is a product resulting from the neutralization of apposition between elements. The following data illustrates the archiphoneme /N/ of the benefactive nasal prefix when it is followed by an alveolar consonant:

throw for him	→ [n̪t̪ʊ:r]	(108) $/n + t:or/$ —
send for him	——→[nd̪ɪr]	/n + d̪ir/
shake for him	——→ [nlʊl]	/n + lul/

/n + ror/	→ [nrər]	run for him
/n + da:f/	→ [nda:f]	leave for him
/n + sug/	→ [nsug]	wait for him

The above data shows that the nasals prefix /N/ becomes [n] when it is followed by an alveolar consonant. The data below illustrates when /N/ is followed by /b/:

(109)	$/n + bah/ \longrightarrow [mbah]$	Go for him.
	$/n + b_1 r_{21}/ $ [mb_1r_21]	Circumcise for him.
	/n + bi/▶ [mbi]	Remove for him.

The information in the above data illustrates that the /N/ becomes [m] when it is followed by a bilabial consonant. The data below illustrates when /N/ is followed by a velar consonant:

(110)	/n + k∋y/►	.[ŋkəɪ]	Come for him.
	/n + ga:t/►	[ŋʃa:d]	Carry for him.
	/n + gub/	[ŋgub]	Burn for him.
	/n + wε:l/	▶ [ŋwɛ:1]	Do for him.

The data above shows that /N/ becomes [ŋ] when it is followed by a velar consonant. Consider the data below which illustrates when the prefix nasal is followed by a palato-alveolar consonant:

(111)	/n + dʒi:d/►	[nd <b>3</b> i:d]	Pull for him.
	/n + d3ei/►	[nd <b>3</b> ei]	Take to him.
	/n + ∫ε:g/►	[ฏ∫ε:g]	Tell him.
	/n + ∫iβi/►	[nfiβi]	break for him

It is evident from the above data that /N/ becomes [n] when it is followed by a palato- alveolar consonant. The underlying form of the nasal will be the form that appears before vowels since vowels have no place of articulation. Consider the following data:



The form of the nasal that appears before the vowel is  $/\eta$ / which represents the underlying form. This is because vowels have no place of articulation that the nasal can assimilate to. Hence, the velar nasal  $/\eta$ / which indicates the benefactive in the Maay dialect has the following allophones:



When the nasal prefix  $/\eta$ / is followed by another nasal, assimilation process does not take place. For example,

(114)  $/ \mathfrak{n} + \mathfrak{nud}/$  [ $\mathfrak{nnod}$ ] tie for him  $/ \mathfrak{n} + \mathfrak{nag}/$  [ $\mathfrak{nnag}$ ] return for him  $/ \mathfrak{n} + \mathfrak{ma:l}/$  [ $\mathfrak{nma:l}$ ] milk for him  $/ \mathfrak{n} + \mathfrak{mari}/$  [ $\mathfrak{nmari}/$  apply for him (e.g. oil)

The blocking of assimilation between the two nasals following one another may be aimed at creating dissimilation between them so that the nasal prefix that marks the benefactive stays distinct. The homorganic nasal assimilation rule in the Maay dialect is morphophonological. Katamba (1989:126) formulated the following rule for homorganic nasal assimilation in Kiswahili:



According to Katamba (1989:126), the Greek letters, alpha ( $\alpha$ ), beta ( $\beta$ ) and gamma ( $\gamma$ ) indicate a range of values which can be both plus and minus values of a given feature. For example, [ $\alpha$  ant] means the nasal and the consonant after it are either both [+ ant] or are both [-ant], [ $\beta$  back] means the nasal and the consonant after it are either both [+back] or both [-back] etc. The rule indicated above does not capture the homorganic assimilation of the prefix nasal in the Maay dialect since it does not exclude the fact that the prefix nasal indicating the benefactive does not assimilate with another nasal following it. The above rule can then be modified as follows:



Iribemwangi (2008:175) posited the following homorganic nasal assimilation rule for Kiswahili which is similar to the above rule:



## 3.6 CONCLUSION

This chapter has discussed the morphophonological processes in the consonants of the Maay dialect. The major processes analysed include consonant weakening and strengthening. The consonant weakening processes discussed include spirantization, consonant deletion and word-final obstruent devoicing. Consonant strengthening processes discussed include consonant lengthening and consonant coalescence. The chapter also discussed other morphophonological processes which did not fall in either of the two categories. These processes include velar nasal fronting, palatalization and homorganic nasal assimilation. The theory of Natural Generative Phonology was used to analyse the various morphophonological processes in the consonants

## **CHAPTER 4: MORPHOPHONOLOGY IN THE VOWELS OF THE MAAY DIALECT**

## 4.0 INTRODUCTION

This chapter will discuss morphophonological processes affecting the vowels of the Maay dialect. The major processes to be discussed in the chapter include intervocalic glide insertion, glide formation, vowel assimilation, vowel harmony, vowel lengthening, and stem modification. In section 4.1, the study will discuss glide insertion while in section 4.2 glide formations will be analysed. In section 4.3 and 4.4, the study will discuss vowel assimilation and vowel harmony respectively. Stem modification will be discussed in section 4.5 and vowel lengthening will be analysed in section 4.6. The theory of Natural Generative Phonology will be used to analyse the morphophonological processes that affect the vowels. Finally, a conclusion of the chapter will be presented in section 4.7.

## 4.1 GLIDE INSERTION (EPENTHESIS)

In the Maay dialect, when a morpheme beginning with a vowel is suffixed to roots ending in a high front vowel, /i/ or /1/, a palatal glide, /j/ is inserted for example, with the past tense suffix which is number and gender sensitive. The data in (116) below illustrates the palatal glide insertion:

(116) /fi:ri + 1 /		[fi:ri <b>j</b> i]	I/He looked	•
look-1sg/3Msg	g/past			
/ fi:ri + eŋ/	▶ [f	ï:ri <b>j</b> eŋ]	They looked.	
look-3pl/past				
/si + i /	[S⊺	<b>j</b> I]	I/ He gave.	
give-1sg/3Msg/	/past			
/sı + εŋ/	→ [s:	ι <b>j</b> εŋ]	They gave.	
give-3pl/past				
/bi + i/ pay-1sg/3Msg/	[bi <b>j</b> ∕past	i] I/	He paid.	



The data in (116) above shows that when the past tense suffix singular /i/ or /1 /marking the first person singular and third person male singular, and the past tense morpheme  $/\epsilon\eta$ / or /eη/ marking the third person plural is attached to verbs ending in an /i/ or /1/, a palatal glide, /j/ is inserted between the two vowels. The insertion of the palatal glide, /j/ between the two vowels breaks the vowel cluster. The general pattern of the syllable structure in the Maay dialect is a CVCV structure. If the palatal glide is not inserted, the syllable structure would be CVCVV. The insertion of the palatal glide between the vowels maintains the required syllable structure. A palatal glide, /j/ is not inserted if the past tense morpheme is attached to roots ending in a closed syllable as shown by the data in (117):



The palatal glide /j/ is also inserted between two extensions beginning with vowels. Consider example (118) below:

(118) / abu:r + a + aŋ / \_\_\_\_ [abu:rajaŋ] They will plant. plant-imm.Futu/3pl

The data in (118) shows that a palatal glide, /j/ is inserted between the morphemes /a/ and / aŋ/ which marks the immediate future in the third person plural. The insertion of the palatal glide between the morphemes creates a CVCVC syllable structure. There are cases where two palatal glides are used to break up vowel clusters as shown by the following data:

The data in (119) shows the insertion of two palatal glides within the sentence. The first palatal glide is inserted between the roots that end in a high front vowel, /i/ or /1/ and the morpheme /a:/ which marks the past progressive. The second palatal glide is inserted between the morpheme /a:/ and the gender plural suffix /eŋ/ or / $\epsilon$ ŋ/, that marks the past progressive and the third person plural. The information discussed above can be summarized as follows:

(120) 
$$\emptyset \longrightarrow [j] / \begin{bmatrix} i \\ I \end{bmatrix} \# \longrightarrow + \begin{bmatrix} i \\ I \\ e \\ \varepsilon \end{bmatrix}$$
 [past tense]

The rule for the insertion of the palatal glide is morphophonological since it results from the influence of tense/aspect system such as the past tense and the aspect of the past progressive. The above rule can be formally written as follows:

## 4.2 GLIDE FORMATION

The Maay dialect exhibits a process where high vowels become semi-vowels. When diphthongs occur at the end of a root, the last vowel changes into a glide before an extension beginning with a vowel as shown by the following data:

(122) 
$$/ \text{go:i} + i / \longrightarrow [\text{go:ji}]$$
 I/he cut.  
cut-1sg/3Msg/past  
 $/ \text{dei} + i / \longrightarrow [\text{deji}]$  I/he glanced.  
glance-1sg/3Msg/past  
/ko:i + i / \longrightarrow [ko:ji] I/he came.  
come- 1sg /3Msg/ past  
/ro:i + i / \longrightarrow [ro:ji] I/he won.  
win- 1sg /3Msg/ past

The data in (122) shows that when the past tense suffix , /i/ (also realized as /i/) marking the first person singular and the third person male singular is attached to roots ending in a diphthong,

the vowel at the end of the root changes into a palatal glide, /j/. The front high vowels, /i/ and /  $_{\rm I}$ / at the end of the roots also glide when followed by a mid front vowel, /e/ or / $\epsilon$ / as shown by the data in (123) below:

Similarly, when the extension begins with a low front vowel /a/, the final vowel in the root of a cluster of vowels also glides as shown by the following examples:

(124) 
$$/ \text{go:i} + a + n \vartheta / \longrightarrow [\text{go:jan}\vartheta]$$
 We will cut.  
cut-imm.futu-1pl  
 $/ \text{da:i} + a + n \vartheta / \longrightarrow [\text{da:jan}\vartheta]$  We will delay.  
delay-imm.Futu -1pl  
 $/ \text{ro:i} + a + n \vartheta / \longrightarrow [\text{ro:jan}\vartheta]$  We will win.  
win-imm.Futu -1pl

The glide formation process is generally aimed at avoiding vowel clusters which make the pronunciation of the words difficult. The information in the above data can be represented as follows:

(125) 
$$\begin{cases} / i / \\ / I / \end{cases} \longrightarrow [j] / V \longrightarrow \# + \left( \begin{array}{c} i \\ I \\ e \\ \epsilon \\ a \end{array} \right)$$
 [past tense, imm.Futu] 71

The glide formation rule in the Maay dialect is morphophonological since it is as a result of the influence of the past tense and the immediate future. The above rule can be formally written as follows:



The high back vowels, /u/ and /v/ glide into /w/ before another morpheme starting with a vowel, when they occur as part of a diphthong at the end of the root of a word. The following data illustrates the gliding of /u/ and /v/ into /w/ before a high front vowel:



The data in (127) shows that the high back vowels, /u/ and / $\upsilon$ / at word-final and as part of a diphthong change to a velar glide, /w/ when followed by a morpheme starting with a high vowel,/i/ or /1/. The vowel /u/ and / $\upsilon$ /also glide into /w/ when followed by a mid front vowels, /e/ or / $\epsilon$ /. For example,

(128) / tou + eŋ / → [toweŋ] They remembered. remember-3pl/past / b1la:0 + εŋ / \_\_\_\_ [b1la:wεŋ] They started.
start-3pl/past
/ hilo:u+ eŋ / \_\_\_\_ [hilo:weŋ] They felt nostalgic.
miss-3pl/past

Similarly, the high back vowel, /u/ and / v/ change to /w/ when followed by a low front vowel, /a/ as shown by the following data:

(129) / b1la:0 + a + nə / \_\_\_\_\_ [b1la:wanə] We will start. start-imm.Fut-1pl / tou + a + nə / \_\_\_\_\_ [towa:nə] We will remember. remember-imm.Fut-1pl / hilo:u + a + nə / \_\_\_\_\_ [hilo:wanə] We will feel nostalgic. miss-imm.Fut-1pl

When a morpheme starting with a consonant is attached to roots ending in a diphthong, the final vowel in the root does not become a glide as shown by the following examples:

(130) / go:i + t + eŋ / \_\_\_\_\_ [go:iteŋ] You cut it. cut-2pl-past / bila: $\upsilon$  + n + i /\_\_\_\_\_ [bila: $\upsilon$ ni] We started. start-1pl-past / ro:i + t + i /\_\_\_\_\_ [ro:iti] She/you won. win-3Fsg/2sg-past

The information in the data (127), (128) and (129) can be summarized as follows:

$$(131) \begin{cases} /u/\\ /\upsilon/ \end{cases} \longrightarrow [w] / V \longrightarrow \# + \begin{pmatrix} e \\ \varepsilon \\ a \end{pmatrix}$$
 [past tense, imm.Futu]

The above rule can be formally written as follows:

(132) 
$$\left( \begin{array}{c} + \text{ syll} \\ + \text{ high} \\ + \text{ back} \end{array} \right)$$
  $\left[ -\text{ syll} \right] / \left[ + \text{ syll} \right] \# - + \left[ + \text{ syll} \right]$ 

[stem]

The above rule indicates that a high back vowel at word final preceded by another vowel becomes a glide if it is followed by an extension starting with a vowel. The rule for the gliding of high front vowels in (126) and the rule for the gliding of high back vowels in example (132) above can be collapsed together as follows:



## 4.3 VOWEL ASSIMILATION

The Maay dialect exhibits vowel assimilation where the vowel in the root assimilates the vowel in the affix. The following data illustrates this phenomenon:

(134) /qor + 1n + tə / \_\_\_\_ [qorontə] It is written. write-stative-Fem / fab + 1n + tə / \_\_\_\_ [fabantə] It is broken. break-stative-Fem. / wer + 1n + kə / \_\_\_\_ [wereŋə] It is hanging. hang-stative-masc  $/ hir + 1n + k a / \longrightarrow [hirina] It is closed.$  (lose-stative-masc)  $/ du:g + 1n + ka / \longrightarrow [du:vuna] It is buried.$  bury-stative-masc  $/ t1r + 1n + ta / \longrightarrow [t1r1nta] The letter is erased.$  erase-stative-Fem  $/ te:g + 1n + ta / \longrightarrow [te:venta] It is raised.$  raise-stative-fem

The data in (134) shows that the stative form of the transitive verbs is marked by /1n/ which is also realized as [1,n] when the referent is masculine. The morpheme /1n/ which marks the stative verb assimilates with the vowel in the root. /1n/ is the underlying form because it is the one that surfaces when the root ends in a diphthong. Consider the following data:

(135) / habau +s + 1n + tə / \_\_\_\_ [habaus1ntə] She is in a state of direction loss. loss-obj-stative-Fem

 $/b_1 la_0 + in + t_9 / \longrightarrow [b_1 law_1nt_9]$  It is started.

start- stative-Fem

 $/tou + in + ka / \longrightarrow [towina]$  He remembers.

remember- stative-Masc

/ da: 1 + s + 1n + k a / [da: 1s1 na] He is in a state of delay. delay-obj-stative-Masc The above data can be summarized as follows



### 4.4 VOWEL HARMONY

Katamba (1989:210) states that "Vowel harmony is a process whereby within certain designated domain, usually the word, all the vowels are required to share one or more phonological properties." According to Ladefoged (2010:244) differences in vowel quality can be described in terms of variations in the degrees of height, backness, and lip rounding. However, there are vowel qualities that cannot be described in these terms. For example, vowels with the root of the tongue drawn forward and the larynx lowered. These vowels are called advanced tongue root (+ ATR) vowels. There are vowels in which there is no advancement of the tongue root and are known as (-ATR) vowels (Ladefoged 2010:244). When the roots are the ones controlling the harmony, it is known as root controlled system. However, if the affixes change the root, it is called dominant [ATR] vowel harmony.

In the Maay dialect the vowels / i, e, u, o/ are [+ATR] while the vowels / I, a,  $\varepsilon$ ,  $\varepsilon$ ,  $\upsilon$ ,  $\upsilon$ / are [-ATR]. The Maay dialect exhibits both root controlled and dominant [ATR] controlled processes.

# 4.4.1 DOMINANT [ATR] CONTROLLED PROCESSES

There are certain cases in the Maay dialect where the vowel in the suffix assimilates the vowel in the root. For example,

(138) 
$$/ \operatorname{kah} + \varepsilon_{\eta} / \longrightarrow [\operatorname{k\varepsilonh} \varepsilon_{\eta}]$$
 They got up.  
get up - 3pl/past  
 $/ \operatorname{bah} + \varepsilon_{\eta} / \longrightarrow [\operatorname{b\varepsilonh} \varepsilon_{\eta}]$  They went.  
go-3pl/past  
 $/ \operatorname{nah} + \varepsilon_{\eta} / \longrightarrow [\operatorname{n\varepsilonh} \varepsilon_{\eta}]$  They were shocked.  
shock-3pl/past  
 $/ \operatorname{rah} + \varepsilon_{\eta} / \longrightarrow [\operatorname{r\varepsilonh} \varepsilon_{\eta}]$  They followed.  
follow-3pl/past  
 $/ \operatorname{gah} + \varepsilon_{\eta} / \longrightarrow [\operatorname{g\varepsilonh} \varepsilon_{\eta}]$  They evacuated.  
evacuate-3pl/past

The data in (138), shows that the low front vowel in the root which is /a/ changes to /  $\varepsilon$  / when the morpheme / $\varepsilon$ ŋ/ which marks the past tense is suffixed to it. The /h/ in the root blocks the root controlled processes and changes it to the dominant [ATR] processes. The information in the above data can be summarized as follows:

(139) 
$$/a/ \longrightarrow [\varepsilon] / - /\varepsilon/$$

[past tense]

The above rule can be formally represented as follows:



# **4.4.2 ROOT CONTROLLED PROCESSES**

Root controlled vowel harmony is common in the Maay dialect. Even though there are many morphemes affected by the root controlled vowel harmony, the study will only analyse some of these morphemes. In the Maay dialect, the morpheme /eŋ/ marks the past tense on the second and the third person plural. The suffix / eŋ/ is realized as [-eŋ] after [+ATR] vowels or  $[-\epsilon\eta]$  after [-ATR] vowels. The following data illustrates the suffix /-eŋ/ after [+ATR] vowels:



The following data illustrates when the suffix /eŋ/ which marks the past tense for the second and the third person plural is suffixed to roots with [- ATR] vowels:



The data in (142) illustrates root controlled vowel harmony. The vowel in the suffix morpheme, /eŋ/ changes its feature of [ATR] depending on the [ATR] feature of the vowel in the root. It is difficult to tell the underlying form of the two surface realization of /eŋ/ which are [eŋ] and [ɛŋ]. The study will take  $/\epsilon/$  as the underlying form since it is the most common one in the language. This information can be summarized as follows:

(143) 
$$/\epsilon/ \longrightarrow [e] / \begin{cases} i, \\ o \\ u \\ e \end{cases}$$
[stem]

The above rule can be formally written as follows:



The rule in (144) states that a mid lax vowel in the suffix acquires the features [+ ATR] similar to the features of the vowel in the stem.

The past tense marker for singular persons and the first person plural is /i/. The morpheme /i/ is realized as /i/ after [+ATR] vowels and it is realized as /1/ after [-ATR] vowels. The following data illustrates the morpheme /i/ after [+ATR] vowels:

Similarly, the morpheme /-i/ is realized as /1 / after [-ATR] vowel as shown by the following examples:

(146)	$/ h\epsilon:s + i / \longrightarrow [h\epsilon:s sing-1sg/2Msg/past]$	I] I/he sang.
	/bər + i / [bər cry-1sg/2Msg/past	I] I/he cried.
	/ du:l + i / ──→ [du:ln fly −1sg/2Msg/past	] I/he flew.
	$/\int Ib + i / \longrightarrow [\int I\beta]$ pour -1sg/2Msg/past	I/he poured.

It can be observed from the data in (145) and (146) that that the past tense morpheme for singular persons and the first person plural is realized as /-i/ when preceded by [+ATR] vowels which are /i, e, o, u / but it is realized as /1/ when preceded by [-ATR] vowels which are /1,  $\upsilon$ ,  $\upsilon$ ,  $\varepsilon$ , a/. The type of harmony exhibited in the data (145) and (146) is root controlled vowel harmony. The underlying form of the two surface realizations of the past tense, /i/ and /1/ is the one that appears in roots that have no vowel since there is no phonetic motivation for the vowel to change. Since there are no verbs without vowels it is difficult to tell which of the two morphemes is the underlying form. The study will take / 1/ since it is the most common one. The information explained above can be summarized as follows:



The vowel harmony rule is morphophonological because it is influenced by tense markers. The above rule can be formally written as follows:



#### past tense

The above rule states that a high lax front vowel in the suffix acquires the features [+ATR] similar to the features of the vowel in the stem.

The rule in (148) above which changes /  $_{I}$  to [+ATR] and the rule in (144) which changes /  $_{\epsilon}$ / to [+ATR] can be collapsed together as follows:



Another morpheme which is affected by vowel harmony in the Maay dialect is the infinitive marker. The infinitive is marked by /-o/ which is realized as /-o/ when it is suffixed to [+ATR] vowels and / o/ when suffixed to [-ATR] vowels. The data in (150) illustrates that the infinitive marker is realized as /o/ when it is attached to roots with [-ATR] vowels.



The data in (151) below illustrates that the infinitive marker is realized as /o/ when it is attached to roots with [+ATR] vowels:



It is hard to tell the underlying form of the two surface realizations of the infinitive marker, /o/ or /o/. The study will take /o/ as the underlying form since it is the one that is most common in the language. The information in the data (150) and (151) can be represented as follows:





The above rule can be formally written as follows:



#### 4.5 STEM MODIFICATION

Stem or base modification is a collective term for morphological patterns in which the shape of the base is changed without adding segmental material. (Hasbelmath 2010:53) In the Maay dialect, the structure of the root is altered when the causative marker is attached to some verbs. Consider the following data which illustrate when the causative marker, /i/ is attached to the root word:

(154) a) /kah + i / \_\_\_\_\_ [ki] Make him/her get up. get up-cause



The data in (154a, b) show that when the causative marker, /i/ is attached to the roots of the verbs, the root of the word completely changes. Only the first segment at the beginning of the root is retained after the root modification. In example (154c), only two consonants of the stem have been retained after the stem modification. After the stem modification, the structure of the roots has been changed from CVC to CV in example (154a, b). In example (154c), the syllable structure of the root is CV\$CVC. The final syllable in example (154c) is the same as the syllables in (154a, b). This information can be summarized as follows:

$$(155) /+ CVC/ \longrightarrow [+ CV] /# \longrightarrow + /i/$$
[causative]

The following data which consists of mainly verbs derived from nouns also indicate stem modification:

- (156) a) /sabar + i / \_\_\_\_\_ [sabri] Make him/her patient. patience-cause
  - b) /eðeb + i / \_\_\_\_\_ [edbi] Discipline him/her.
     discipline-cause
  - c) /galab +i / \_\_\_\_\_ [galbi] Make him/her go in the afternoon. afternoon-cause
  - d) /guðub + i / \_\_\_\_\_ [gudbi] Make him/her cross.
     cross-cause

The syllable structure of the root of the above words is CV\$CVC except example (156b) which has the pattern V\$CVC. Basically all the examples end in CVC syllable structure. When the

causative marker /i/ is suffixed to the root, the syllable structure changes to CVC\$CV, except the data in (156b) which changes to VC\$CV. After the modification of the root, the last syllable structure in the data (156) ends with the pattern CV. In order to create new meaning from the root, the first and the last syllables are interchanged through the addition of the causative marker /i/.The above information can be summarized as follows:

(157) 
$$/+ \text{CVC}/ \longrightarrow / [\text{CV}] \longrightarrow \# + [i]$$

[causative]

The study posits the following syllabification rule for the root-modification in the Maay dialect.



## 4.6 VOWEL LENGTHENING

Vowel lengthening refers to a process where a short vowel acquires the feature [+long] in a particular context. In the Maay dialect, short vowels in open syllables become long when followed by a morpheme which begins with consonant as shown by the following data:

The above data shows that the short vowel, /i/ in the open syllable becomes lengthened when followed by a morpheme starting with a consonant. The short vowel is not lengthened when

followed by another vowel since a palatal glide /j/ is inserted between the two vowels as shown by the following data:

The information in the data (159) and (160) can be summarized as follows:

(161) /i/  $\longrightarrow$  [i:] /  $\longrightarrow$  #+[+cons]

<u>suffix</u>

The vowel lengthening rule in the Maay dialect is morphophonological since it is as a result of the influence of a morpheme that marks the past tense. The above rule can be formally written as follows:



The above rule states that a high front vowel becomes long at the end of a word when followed by a morpheme which starts with a consonant. There are cases where morphemes which start with vowels are also lengthened before suffixes starting with consonants. Consider the following data:

The data in (163) clearly shows that the morpheme which marks the immediate future, /a/ becomes lengthened when it is followed by a consonant. When the morpheme /a/ is preceded by a long vowel it is not lengthened as shows by the data in (164):



The rule for lengthening the morpheme /a/ that marks the immediate future can be informally written as follows:

(165) 
$$/a/ \longrightarrow [a:] / \begin{pmatrix} V \\ -long \end{pmatrix} \longrightarrow + [+ cons]$$
  
[stem]

The above rule can be formally written as follows:



## 4.7 CONCLUSION

In this chapter, I have discussed the morphophonology that affects the vowels processes of the Maay dialect. The major vowel processes analysed include intervocalic glide insertion, glide formation, vowel assimilation, vowel harmony, root modification and vowel lengthening. In vowel harmony, the chapter clearly illustrated that root controlled vowel harmony is common in the Maay dialect. The Natural Generative theory has been used to analyse the morphophonological processes in the vowels.

### **CHAPTER 5: CONCLUSION**

## 5.0 INTRODUCTION

The study had set to achieve three main objectives: The first objective was to analyse some aspects of phonology and morphology of the Maay dialect that are directly related to the morphophonological processes in the verb. The second one was to identify the various morphophonological processes that affect the consonants of the Maay dialect and analyse the environment in which they occur. The third was to identify the various morphophonological processes that affect and analyse the environment in which they occur. The third was to identify the various morphophonological processes that affect the Maay dialect and analyse the environment in which they occur. Section 5.1 of this chapter will discuss research findings in relation to the objectives while in section 5.2 a recommendation for further research will be presented.

# **5.1: RESEARCH FINDINGS**

In the first objective, the various aspects of phonology discussed include the inventory of the Maay dialect consonants and vowels. The study found out that the Maay dialect has nine short vowels with their corresponding long ones and a central vowel, /ə/. Vowel length was treated as a feature. The vowels [e, i, o, u] were found out to be [+ATR] while [1,  $\varepsilon$ , a,  $\vartheta$ ,  $\vartheta$ ] were found out to be [-ATR]. The study also identified seven long and six short diphthongs. The diphthongs were treated as a sequence of a long vowel and a short vowel or a sequence of two short vowels.

The study identified a total of twenty one consonants. Some of the consonants such as /b/ and / $\beta$ /, /g/ and / $\gamma$  / were found to be in complementary distribution. The Maay dialect long consonants were also identified. The morphological structure of the Maay dialect verbs was discussed. The study discovered that the Maay dialect has prefixes, suffixes and circumfixes. Suffixes were found to be very productive.

In the second objective, the study identified the various morphophonological processes that affect the consonants of the Maay dialect. The two major consonant processes discussed include consonant weakening and consonant strengthening. The consonant weakening processes identified include spirantization, consonant deletion and word-final obstruent devoicing. In spirantization the study found out that all the oral stops in the Maay dialect become fricatives when they occur between vowels.

The consonants that are deleted are /t/ and /h/. The /t/ that is deleted marks gender and it is deleted when it is suffixed to roots ending in /d/. The glottal fricative /h/ is deleted when it occurs at word-final position and is followed by a consonant. In obstruent devoicing, the study found out that when voiced plosives occur at word-final they become devoiced and sound like voiceless stops.

Consonant lengthening and consonant coalescence are the main processes identified in consonant strengthening. The consonant that are lengthened include /l:, r:, n: /. The lengthening of the consonants /l/ and /n/ occurs after the deletion of a consonant. However, /r/ lengthening seems to be both phonological and morphological. This is because the study found out that /r/ is lengthened when it is followed by a morpheme beginning with a consonant and there are cases where /r/ lengthening is not morphologically triggered. In consonant coalescence the study found out that the masculine gender marker /k/ and the stative maker /n/ coalesce together to form /ŋ/.

Other consonant processes that the study identified include palatalization, velar fronting and homorganic nasal assimilation. The voiced velar plosive /g/ becomes palato-alveolar, /dʒ /or palatal implosive / f/ when followed by the high front vowel /i/ that marks causative. The study found out that the palatalization of /g/ to /f/ is more common than the palatalization of /g/ to /f/ dʒ/. The study also found out that the velar nasal / $\eta$ / is fronted and becomes [m] or [n] when followed by a vowel. In the Maay dialect, the benefactive is marked by the velar nasal, / $\eta$ /. The velar nasal becomes homorganic with the following consonant. However, the velar nasal does not assimilate if the following consonant starts with a nasal.

In the third objective, the study found out various vowel processes which include glide insertion, glide formation, vowel assimilation, vowel harmony, root modification, and vowel lengthening. The palatal glide /j/ is inserted between a final vowel at the end of a root and a morpheme

starting with a vowel. The palatal glide is also inserted between two morphemes that start with a vowel. The insertion of a palatal glide is aimed at breaking up vowel clusters.

Glide formation in the Maay dialect occurs when a diphthong ending in a high vowel occurs at the end of a word and is followed by a suffix starting with a vowel.

Vowel assimilation in the Maay dialect was identified in the stative verbs. The stative is marked by /1n/ which assimilates with the vowel in the stem of the verb. In vowel harmony, the study identified dominant [ATR] vowel harmony and root controlled vowel harmony. Some of the morphemes affected by root controlled vowel harmony that were discussed include the past tense marker for singular persons and first person plural, /1/, the past tense marker for second and third person plural / $\epsilon$ ŋ/, and the infinitive marker, / $\circ$  /. The stated morphemes change their [ATR] feature according to the [ATR] feature of the stem. In root modification, the study observed that the roots of certain words change when the causative marker /i/ is suffixed to them.

The first hypothesis of the study stated that the Maay dialect of Somali exhibits morphophonological processes in the verb. This hypothesis was found to be correct as supported by the data presented in the research. The study identified various morphophonological processes in both the consonants and the vowels.

Secondly, the research hypothesized that sound changes in the consonants of the Maay dialect are as a result of the influence of tense, aspect, mood and other consonants which occur in the immediate environment. The data analysis presented shows that the tense, aspect and mood create an environment in which sound changes take place in the consonants. Homorganic nasal assimilation, consonant coalescence and consonant lengthening arise as a result of the influence of other consonants.

The study also hypothesized that sound changes in the vowels of the Maay dialect are as a result of the influence of tense, aspect, mood and other vowels which occur in the immediate environment. This hypothesis was found out to be correct since the presented data indicated that the morphemes that mark tenses, aspects and mood start with vowels that influence other vowels in the root which lead to morphophonological processes.

# 5.2 RECOMMENDATION FOR FURTHER RESEARCH

The focus of this study was to establish morphophonological processes in the verb of the Maay dialect. The study recommends further research into the morphophonological processes in the nouns of the Maay dialect. In addition, further research is also necessary into the morphophonological processes in the adaptation of loan words into the Maay dialect. This is because Somali has borrowed words from other languages such as English, Arabic and Kiswahili.
## REFERENCES

- Alkire, T. & C. Rosen (2010). *Romance Languages*. A *Historical Introduction*. Online Publication: Cambridge University Press
- Anttila, R. (1972). An Introduction to Historical and Comparative Linguistics. London: Macmillan Publishers.
- Armstrong, L. (1964). The Phonetic Structure of Somali. Ridgewood, NJ: Gregg Press Inc.
- Banti, G. (1988). Reflections on Derivation from Prefix-Conjugated Verbs in Somali. Roma: University of Rome (La Sapienza).
- Bruno, B. & A. Puglielli (1988). Middle Voice in Somali. In Marianne, B. & S. Fritz (1988), *Omotic Papers from the International Symbosium on Cushitic and Omotic Language*. Hamburg: Helmut Buske (pp 515-536).
- Campbell, L. (1998). *Historical Linguistics. An Introduction*. Edinburgh: Edinburgh University Press.
- Catford, J. (1988). A Practical Introduction to Phonetics. USA: Oxford University Press.
- Clark, J. & C. Yallop (1990). *An introduction to Phonetics and Phonology*. Cambridge, Massachusetts: Blackwell.
- Denham, K. & A. Lobeck (2013). *Linguistics for Everyone: An Introduction*. Wadsworth: Cengage Learning
- Gabard, K. (2010). A Phonological Analysis of Somali and the Guttural Consonants. An Unpublished BA Linguistics Honors Thesis, Ohio State University.
- Goldsmith, J. (2011). The Syllable. In Goldsmith, J., J. Riggle & A. Yu (eds.) (2011) *The Handbook of Phonological Theory.* (2<sup>nd</sup> ed.) Oxford, Uk: Blackwell Publishing.

Hasbelmath, M. & A. Sim (2010). *Understanding Morphology* (2<sup>nd</sup> ed.) London: Holder Education.

Hooper, J. (1976). *An Introduction to Natural Generative Phonology*. New York: Academic Press.

- Hooper, J. (1973). Aspects of Natural Generative Phonology. Unpublished PHD Dissertation, University of California.
- Hoskins, R (2011). Phonology of the Orma Language. SIL international.
- Hyman, L. (1975). Phonology: theory and analysis. New York: Holt, Rinehart & Winston.

Iribemwangi, P. (2008). A synchronic Segmental Morphophonology of Standard Kiswahili. Unpublished PHD Dissertation, University of Nairobi.

- Katamba, F. (1989). Introduction to Phonology. Uk: Longman Group.
- Ladefoged, P. (1982). A course in Phonetics. (2<sup>nd</sup> ed.) USA: Harcourt Brace Jovanovich, Inc.
- Ladefoged, P. & J. Keith (2010). *A course in Phonetics*. (6<sup>th</sup> ed.) Wadswoth USA: Cengage Learning.
- Lamberti, M. (1984). The linguistic situation in the Somali republic. In Labhn, T. (ed.) *Proceedings of the second international conference of Somali studies*, Volume 1: Linguistics and Literature.
- Lampitelli, N. (2011). The Morphophonology of Somali nouns. Paris: Universit'e Paris 7.
- Landifino (2011). Report Somali: Language Situation and Dialect. Norway.
- Malmkjær, K. (ed.) (2004). The Linguistic encyclopedia. New York: Routledge.
- Mberia, K. (1993). Kitharaka Segmental Morphophonology with Special Reference to the Noun and the Verb. An unpublished PHD Dissertation, The University of Nairobi.
- Mourse, M. (2005). Selectors in Cushitics. In Voeltz, E. (2005) (ed.) *Studies in African Linguistic Typology*. Amsterdam: John Benjamins.

Mulder, J. & H. Hurren (1968). *Phonological Investigations. Sets and Relations in Phonology.* Berlin: Mouton de Gruyter.

- Olani, W. (2014). Inflectional Morphology in Oromo. Unpublished MA thesis, University of Ethiopia.
- Paster, M. (2006). "Aspects of Maay Phonology and Morphology." Journal of Studies in African Linguistics Volume 35, Number 1, 2006. (pp.73-120).
- Plag, I. (2002). Word-formation in English. Cambridge: Cambridge University Press.

Saeed, J. (1999).	Somali. London: John Benjamins Publishing Company.
Schane, S. (1973).	Generative Phonology. New Jersey: Prentice-Hall.
Sim, R. (1981).	"Morphophonemics of the verb in Rendile." Mornographic Journals of the Near East AFroasiatic Linguistics 8/1 (pg 1-33).
Tak, J. (2011).	"Universals of Prenasalised Consonants: Phonemic or Derived, Single or Complex." Journal of Universal Language 12-2 September, 2011 (pp. 127- 158).
Tosco, M. (1997).	Grammar, Texts and Glossary of a southern Somali dialect. Köln: Rüdiger Köppe.