MORPHOPHONOLOGICAL PROCESSES IN THE NOUN:

A CASE STUDY OF THE BENADIRI DIALECT OF SOMALI

By

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DECLARATION

This project is my original work and has never been submitted for examination to any other university.

………………………………..   ………………………….........

ABDIRASAK DAHIR SULUB   Date

This Research Project has been submitted for examination with our approval as the university supervisors.

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Prof. JANE AKINYI NGALA ODUOR   Date

……………………………………   ….………………….................

Dr. MOHAMED ABDULMAJID AKIDAH   Date

DEDICATION

I   dedicate this work to

My lovely mother

Fatima Ali Owabdi

My lovely wife

Kadija Omar

My lovely children,

Mohammed

Fatima

Aisha

Anas

Asma

And

All my brothers and sisters

They endured my long period of absence from home

ACKNOWLEDGEMENT

LIST OF ABBREVIATIONS AND SYMBOLS

Aff	Affix
AP	Autosegmental Phonology
C	Consonant
H	high tone
IPA	International Phonetic Alphabet
L	low tone
LP	Lexical Phonology
LR	Lexical representation
Pl	plural
PR	Phonetic representation
Sfs	suffix
Sg	Singular
Syll	Syllable
V	Vowel
VV	long vowel
➡	Becomes
>	changes to
//	Phonemic (underlying representation)
~	Alternate with
[ ]	Phonetic representation
#	Word boundary

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ABSTRACT

This study is a descriptive research of the morphophonological processes involved in the noun formation in the Benadiri dialect. The study aimed at describing the inflectional morpheme used in the plural formation as well as the derivational processes in nouns of this dialect. It also described the morphophonological processes that affect phonemes in plural formation. It explained the tonal changes involved in plural formation and gender specification. Data were collected through audio recording speakers of the Benadiri dialect. The informants were recorded using a Digital Voice Recorder of the reseacher's mobile phone. The data were recorded during Skpe sessions between the reseacher and the informants. Data were transcribed phonetically and tone was also marked. The researcher was able to identify various morphological and phonological processes emerging from the plurals formed.

The research was done within the framework of Lexical Phonology and Auto-segmental Phonology. Thus, the study adopted an eclectic approach with Lexical Phonology as main theory and Autosegmental Phonology as the minor one.

The study established that there were a number of inflectional and derivational morphomes that were suffixed to nouns. It also established the existance of consonant weakening, consonant substitution, consonant insertion, consonant elision, vowel deletion and vowel lowering. The researcher also confirmed that Benadiri dialect has a complex morphology because of the many inflections, but this also makes it richer because it has different ways of forming plurals.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

According to Saeed (1999), the Somali language belongs to the Cushitic family that is classified under the Afro-Asiatic language family which was formerly known as the Hamito-Semitic and which included languages such as Chadic, Oromo, Berber as well as ancient Egyptian. Tosco (2000) observes that Cushitic languages are classified into North cushitic, Central Cushitic, East Cushitic, and South Cushitic. These categories are also referred to as Highland East Cushitic and Lowland East Cushitic, but Somali language falls under the Lowland East Cushitic family that comprises languages such as Somali and Oromo languages.

Even though Cushitic languages are considered as belonging to one family, they can be divided into six language clusters. Many of these clusters differ from each other while some of them display similarity although a number of various internal subgroups can be seen. After Oromo, Somali language which has the second largest number of speakers in the Cushitic family. It is spoken by close to thirty million people in the Horn of Africa in counteries such as Djibouti, Ethiopia, Kenya and Somalia. Figure 1 shows the place of Somali language in the Cushitic family.
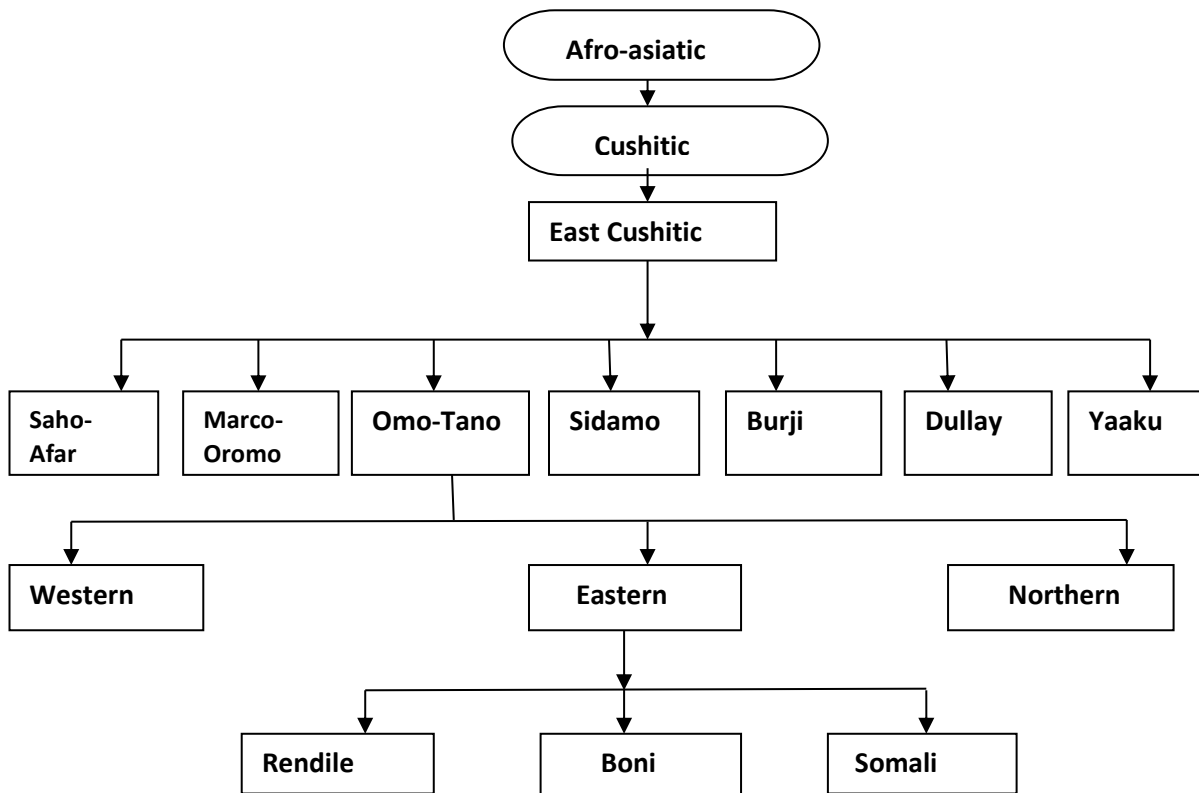
Figure:1 *The Place of Somali language in the Cushitic family (Adopted from Saeed with changes,1999:3).*

Somali has many dialects but scholars consider three major dailects, namely: Maxaa (northern dialect), Maay and Benadiri (southern dialects). The Benadiri dialect (which is the subject of this study) is the second largest dialect in Somalia and it is spoken in the area of Mogadishu and its surroundings. It has five vaiants namely:

a. Hamar-Weyne dialect which is spoken in the ancient disrict of the capital city.
b. Abgal, which is widely spoken in the middle regions of Somalia up to the capital city of Mogadishu.
c. Biyamaal is used in the districts of Marka, Jamaame, Afgoye, and Qoryoley.
d. Ajuran is spoken in Dinsoor, Hiraan, Bu'aale and Saakow districts.
e. Galja'el is mainly spoken in Hiraan, Jowhar, Bu'aale, Saakow and middle Juba.

The current study is on the Benadiri dialect. The study is about some morphological and phonological processes in nouns in this dialect. Benadiri dialect of Somali has not been given attention by researchers. This dialect has interesting morphological and phonological processes when forming plurals.

1.2. Statement of the Research Problem

A study by Andrzejewski (1961) was based on noun variations of Northern dialects which are different from Benadiri dialect to some extent**.** The Benadiri noun structure is complex because Benadiri has complex inflectional processes and derivational processes involved in plural formation. No systematic investigation has been carried out to establish what these suffixes are, therefore, there is a need to investigate the Benadiri dialect. The proposed research intends to investigate these suffixes within the framework of lexical phonology, a theory that was not used by earlier researchers such as Andrzejewski (1961) and Saeed (1999). This is a gap that the researcher endeavours to fill. The study focuses on the formation of plural nouns that is accompaned by some phonological processes. It seeks to account for the role of morphology in the various phonological processes in Benadiri. For instance, the word /**ge:t**/ which means 'tree' in singular form becomes /**ge:ðɔ**/ in plural form. This means that /**t**/ changes into /**ð**/ upon the affixation of the plural morpheme. There are many similar changes that require a systematic investigation.

In this study, aspects of derivation were examined such as the derivation of nouns from verbs, adjectives and other nouns. Consider this example:

	[Verb base]	**[[Verb base]+ Sfx]**	**LR**	**>**	**PR**	**Gloss**
1.	[ˈqor]	[[ˈqore]+e]	[qore]		[qɔˈre]	writer
	[ˈbar]	[[ˈbar]+e]	[bare]		[baˈre]	teacher

In example (1), the noun [qoˈre] 'writer is derived from the verb [ˈqor]. The derivation involves adding the suffix –e to the verb base. This morphological process is accompanied by a phonological process whereby the primary stress shifts to the last syllable. This phonological process can be explained in the context of the principle of neural and non-neutral affixes, which is a key principle of the LP theory. These aspects of phonology and morphology have not been addressed before in Benadiri dialect. In addtion to the morphological processes of derivation and inflection, this study also investigates the role of tone in the plural formation of Benadiri nouns. This is another area that deserves a systematic investigation.

1.3. Research Questions

In view of the statement of the problem above, this study endeavors to answer the following questions:

a) What inflectional processes are used in the formation of plurals in Benadiri nouns?

b) What kind of derivational processes occur in nouns in this dialect?

c) What morphophonological processes affect consonants and vowels in plural formation of Benadiri dialect?

d) To what extent does tone affect lexical meaning, noun plural formation and gender specifications in Benadiri?

1.4. Objectives of the Study

The objectives of this study are:

i. To describe the inflectional processes that are used in making plural forms in the Benadiri dialect.

ii. To identify the derivational processes that occur in nouns in the Benadiri dialect.

iii. To describe the morphophonological processes that influence the consonants and vowels when forming plurals.

iv. To explain the tonal changes that affect lexical meaning, the plural formation and gender specifications of noun in the Benadiri dialect.

1.5. Justification of the Study

This study is crucial because it seeks to investigate the morphological and phonological processes that take place in the process of noun formation in the Benadiri dialect. It may therefore be of interest to linguists working in the area of morphology and phonology.

Anchored in the lexical phonology and autosegmental phonology, the study seeks to describe the complex morphological and phonological processes that are present in Benadiri. No such study has been done before.

The findings of this study will be a valuable contribution to the area of Benadiri linguistics in particular and by extension to Somali linguistics. The results will be useful for pedagogical purposes particularly for those who want to delve into further research on the dialect.

1.6. Scope and Limitation of the Study

The study focuses on the Benadiri dialect which is spoken in Mogadishu and its surroundings. The data that were examined is limited to Benadiri nouns both in the singular and plural forms as well as the various phonological and morphological processes that are involved in the derivation of nouns as well as the inflection of nouns for number and gender. In view of limited

time and resources, the study targeted Benadiri speakers residing in Kenya, particularly in Eastleigh and South C regions within the city of Nairobi. The corpus of the study was a total of 100 nouns which were analysed by looking at the morphological and phonological processes involved in the derivation and inflection of nouns. The role of tone in distinguishing between masculine and feminine nouns, lexical meaning as well as noun plural formation was also be analysed.

1.7. Definition of Concepts

Payne (2006: 63) observes that in morphophonemics a morpheme alters its form in response to the sounds is around it in a specail context, and that such variation is usually called morphophonology (**Morphophonemics).**

Root: A root is a no further decomposable form which conveys the lexical meaning and can be considered as the tiniest unit of a word that carries the lexical notion (Stroomer, 1987:37).

Base: A base is an underlying word in a language which has no affixes but is meaningful and grammatical in its own (Stroomer (1987: 37)

Suffix: A suffix is an ending that is attacted to the word which usually alters the part of speech of that word. It may also alter the meaning of that word (Maclin, 1992: 380)

Morpheme: A morpheme is the minimal meaningful unit into which a word can be divided. It represents variation of phonological realizations of a single morpheme (Katamba,1989: 81).

1.8. Literature Review

This part is divided into two sections. Section one discusses literature relating to Benadiri dialect while the other section focuses on literature that is related to the theories used in the current study.

1.8.1 Literature on Benadiri Dialect and Related Works

Andrzejewski (1961) discussed the variation of the nouns in Somali in relation to positions and other words in the sentence structure. In his research, he also discussed the verbs. He did not provide a full explanation of morphophonological processes of nouns and also his discusion is not done within any modern theoretical framework. His work is based on Somali in general and gives an insight into the language. However, the present study only analyses the nouns at the phonological and morphological levels by examining consonant and vowel processes such

as consonant weakening, consonant substitution, consonant insertion, consonant elision, vowel deletion and vowel lowering.

Somali phonology was first extensively researched by Armstrong (1934) who discussed the relationship between patterns of tone and some features of grammar. The features contain the number of nouns and grammatical gender. Some various temporal forms of verbs were also added in her paper. Her work differentiates four kinds of tones such as high, mid, low and falling tone. In her work, the whole syllables are assigned to receive tones. The author proposed that nouns with two syllables which are pronounced with mid-level tones were identified to be feminine and a high tone preceded by a low level tone were recognized to be masculine. The current study is based on tone in Benadiri nouns by explaining the lexical function of tone, tone in plural formation and tone in gender specifications in the Benadiri dialect.

Hyman (1981) observed the prosodic system of Northern dialect (Maxaa). In his work, the underlying forms of words have no tonal or accentual specification on their own. His work concludes that Somali language is neither a tonal language nor a stress accent language but it has a tone-accent one. However, this study is based on tone in Benadiri nouns and discussed lexical function of tone, numbers and gender. This is a new contribution to the current knowledge.

A number of scholars conducted a survey on Somali dialects such as Tuni which is sub-dialect of Maay was researched by one of the scholars was Tosco (1997). His work observed the aspect of morphology in the light of comparative Somali dialectology. His work discussed inflections, derivations and tone in that dialect, but this work is an analysis of morphological and phonological processes in Benadiri nouns. This study is also done within the framework of lexical phonology and autosegmental phonology

Olani (2014) studied the Oromo morphology by focusing on inflections, derivations and tones of nouns. His work is very relevent to the current study. Somali and Oromo share some common features and both come under the Cushitic family languages. The current study of Benadiri dialect had the same motive and disccused some morphological and phonological processes as well as tonal changes in plural formation and gender specifications in the Benadiri dialect.

Katamba (1993) discussed morphology and noted that the speakers of language merges one morpheme with another morpheme to form a word. From this definition, one can see that morphology is the study of word formation that differentiates a word from a morpheme. For

instance, the word " **remark**" comprises a couple of morphemes. The bound morpheme is [**re-**] and the free morpheme is [mark]. The [**re-**] morpheme is dependent and it can not work by itself unless you attach to another morpheme which is independent (**mark**). Morphological processes subsume affixation, circumfixation, modification and reduplication. Katamba's analysis on morphology is very significant to use in Benadiri nouns. The current study partly discussed the word formation of Benadiri dialect.

Hoskins (2011) analysed the phonology of Orma, which is one of the languages in the Oromo. His work explained the process of consonants, vowels and tones of that language while the present study discussed phonological processes of some consonants and vowels in the plural forms.

1.8.2 Review of Theoretical Literature

A detailed analysis of level ordered morphology was done by Kiparsky (1982). His work argues that the derivational and inflectional processes can be arranged in a series of strata. Each stratum is shared with a group of phonological rules. In addition, the ordering of strata defines the likely word formation. The analysis of Kiparsky criticises some previous theories which are too weak and limited to elaborate some aspects of language behaviour. Lexical phonology and morphology was used to explain Benadiri nouns.

Durand (1990) discusses the interaction between word formation rules (WFR) and P-rules. His work discusses several concepts including Bracket Erasure Convention. The current study makes reference to the Bracketing Erasure Convention within the framwork of lexical phonology.

This study bases its arguments on the Autosegmental phonology proposed by Goldsmith (1990). His work contends that a language is considered a tone language if tone is applied to differentiate words or morphemes (Goldsmith, 1990: 9). The current study also identified lexical functions of tone.

1.9. Theoretical framework

This study is guided by two theories; namely, lexical phonology which was proposed by among others, Kiparsky (1982) and Mohanan (1982) as well as Autosegmental Phonology that was propounded by Goldsmith (1990)**.** Lexical phonology is used in this study to explain the role of morphology (affixation) in the phonology of Benadiri nouns.

1.9.1 Lexical Phonology

Snider (1999: 13) says that Lexical phonology is a combination of phonology and morphology in the word formation process. The lexicon is split into two levels which agree with the traditional strata 1 and 2 according to Mohanan (1986).

1.9.1.1 The Principles of Levels/ strata

Based on the arguments of Lexical phonology, the lexicon comprises arranged strata/levels which are hierarchically organised. The phonologists working with LP suggested various levels according to their interpretation of the word.

Kiparsky (1982) suggested that the lexicon can be organised in three ways:

Stratum one - Primary Inflection and Derivations

Level one subsumes primary inflection which is morphological processes. For instance, there are several ways of forming past tense:

2.	**Present**		**past**		**Perfective**
	[i]	~	[æ]	~	[ʌ]
	Sing		sang		(has) sung
	[ai]		[ɔ]		[ɔ]
	Fight		fought		(has) fought

Level 1 Morphology plays a role in the formation of plural forms of certain nouns such as the following:

3.	**Singular**		**Plural**
	[f]	~	**[v]**
	Wife		wives
	Leaf		leaves
	Knife		knives

This level also includes primary derivation in which the words can be derived with primary affixes such as –th, –al, and –ous, for example **truth, practical** and **dangerous** repectively.

The word formation rule contains phonological rules with morphological operation. For instance, the suffix –al can cause a stress shift in words such as **párent** versus **paréntal**

Stratum 1 includes inflectional and derivational suffixes. The principles of lexical phonology will be employed in the elaboration and analysis of the data in the Benadiri dialect of Somali.

Stratum Two- Compounding and Secondary (regular) Derivations

This kind of stratum involves both compounding and secondary derivation. Consider these examples:

4.	**Verb**	**Derived noun**
	Write	writ-er
	Eat	eat-er
	Wait	wait-er

Stratum Three- Secondary inflection

This is a regular inflection process where adding the plural morpheme –s is added to the noun as illustrated below:

	Singular	**Plural**
1.	boy	boy-s
	dog	dog-s
	door	door-s

Katamba (1989: 259) also suggested that the lexicon can be organised in the following ways:

Stratum 1 derivation

Stratum 2 inflection

Mohanan (1982:28) proposed that the lexicon can be arranged into four strata:

Stratum 1- Class 1 derivations,

Stratum 2- Class 2 derivations,

Stratum 3- Class 3 compounding and

Stratum 4- Class 4 Inflection

In summary, Kiparsky (1982) well elaborated the analysis of level ordered morphology. His argument points out the idea that the derivational and inflectional processes of a language can be organized in serial levels. Every single level is linked with a bunch of phonological rules. Moreover, the organizing of levels defines the likely word formation. He criticizes some previous theories and assumptions that are being too weak and restricted to explain some aspects of language behavior.

Katamba (1989) observed that the lexicon has a particular place in the derivational and inflectional process of the word. Lexical phonology is not merely a central component of the grammar including idiosyncratic properties of words and morphemes, but it also includes the regular word formation rules of morphology paired with phonological rules at various levels. His study concentrates on level 1 and 2 of lexical phonology and also added other principles such as post lexical and elsewhere condition and ordering of affixes. Katamba's analysis was a huge contribution to our understanding of the theory of lexical phonology when it comes to the analysis of lexical items and morphemes.

Mohanan (1982) distinguished the morphemes to form words from those forming sentences and argues that lexical phonology is a complete set, meanings, phonology of words that are differed from phonology of sentences.

1.9.1.2 The Principles of Ordering of Affixes

The principle of levels is explained in the figure below which displays the lexicon structure.
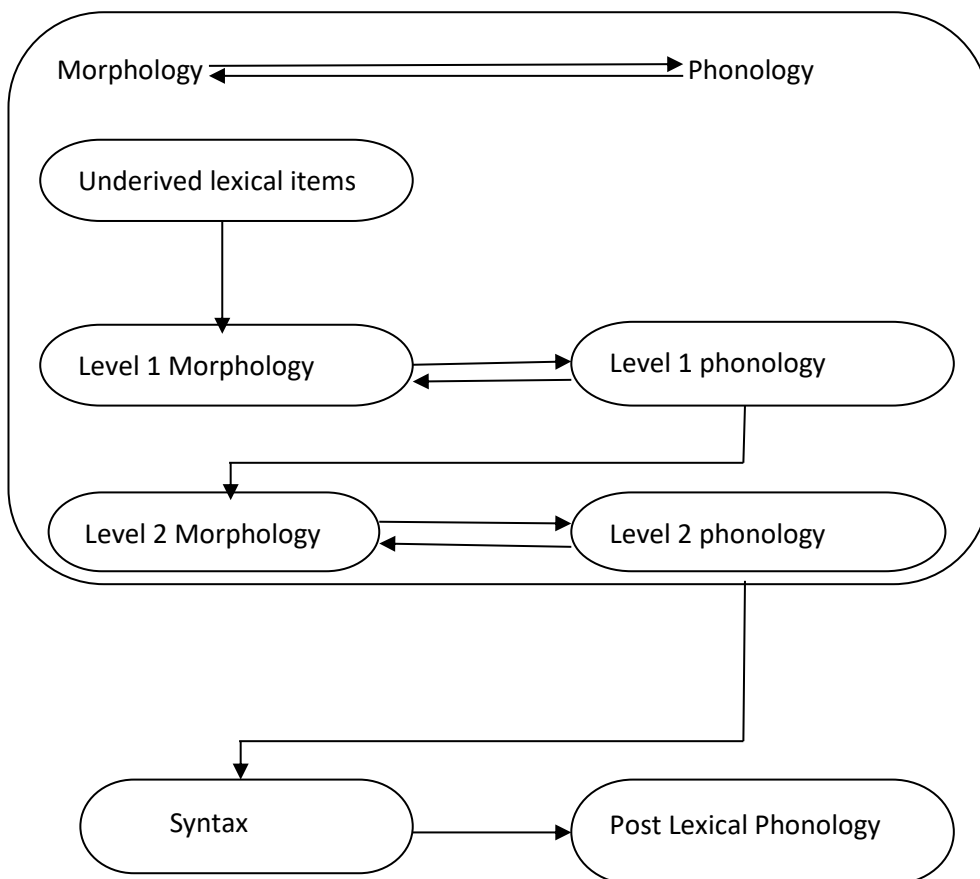
Figure 2: Structure of the Lexicon (Katamba, 1989: 257).

To show the way phonology interacts with morphology, the study borrows the word "sectarianism" from English. It is derived from the word 'sector' upon suffixation of the derivation affix +ian (sector + ian). Once the suffix (-ian) is attached to the word, the word is moved to phonology box which is level one and then a stress is assigned on the syllable before the suffix. The word (sectar-ian) is taken to level 2 morphology so as to attach –ism suffix. Finally it goes to phonology. According to Katamba (1989: 273), Level 1 involves derivation while Level 2 involves both inflection and compounding.

In figure 3: the process of Level Ordering is explained below:

Prefix   **Root**   **Suffix**

                    [Stratum 1 affix]   [**Root**]   [Stratum 1]

[Stratum2 affix]   [Stratum 1 affix]   [Root]   [Stratum 1]   [Stratum 2 affix]

                                            [Sector]   -ian]   -ism]

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The idea of levels states that the lexicon comprises the root, base and affixes. The lexicon is organized hierarchically. Stratum 1 affixes are nearer to the root than stratum 2 where both happen in the same word as shown in Figure 3 (Katamba,1989:262).

1.9.1.3 The Level Ordering Principle

According to Keith (1999:14), the argument of this theory is that the langauge processes of morphology include the affixes at various strata which creates various word categories such as verbs, nouns, adjectives, etc. The various strata with affixation are related to a group of morphological rules.

Another argument is that the inflectional and derivational processes can be arranged in subsequent levels. Every single level is related to some phonological rules for which it defines the application domain. The strata ordering describes the logical arrangment of morphological processes in the formation of the word (Kiparsky,1982: 131).

Even though the theory of lexical phonology is organised in an orderly manner, the number of the strata involved are not unanimously agreed upon. Mohanan (1986: 8) suggests a hierarchical structure of four levels. He explains the derivations which accur at Levels 1 and 2, but the processes of derivation and inflection take place at Levels 3 and 4, respectively.

However, the current study is based on level 1 and 2 in the explanation of morphological processes and analysis of consonants and vowel processes when forming plural nouns as well as derivation.

1.9.1.4. The Principle of Neutral and Non-neutral affixes

The principle of neutral and non-neutral affixes is employed to account for the role of affixes in the position of primary stress in syllables during the process of word derivation. In this respect, the affixes are grouped as neutral or non-neutral depending on their effect on the position of primary stress in a word. Non-neutral affixes are discussed as those that cause a change in the position of primary stress while neutral affixes do not cause a change in the position of primary stress. The affixes *-ness,* and *-less* are examples of neutral affixes in English. If these affixes are attached to a base, they create forms such as those illustrated below:

6.   +ness   ˊaware+ness   →   ˊawareness

                     +ness   íll+ness   →   íllness

                     +ness   ˈblack+ness   →   ˈblackness

+less	´job+less	→	´jobless
+less	´home+less	→	´homeless
+less	´bottom+less	→	´bottomless

If a non-neutral affix is added to a word base, it causes a shift in the position of the primary stress in the word base. Non-neutral affixes in English are *+ic, +ee*. These affixes result in the following changes:

7.	+ic	ˈeconomy+ic	→	ecoˈnomic
	+ic	ˈphoneme+ic	→	phoˈnemic
	+ic	ˈhistory+ic	→	hiˈstoric
	+ee	reˈturn+ee	→	returnˈee
	+ee	aˈpology+ee	→	apoloˈgee
	+ee	abˈduct+ee	→	abducˈtee

Katamba (1989:268) noted that the words with the –ic affixes are pre-stressed suffixes. Once the suffix –ic is attached to a word base, it immediately makes the syllable before it to be accented. On the contrary, when such affixes +ee are attached to a word base, the stress falls on themselves. The neutral and non-neutral affixes are also called Class 1 and Class 2 affixes respectively. Class one affixes are added at Stratum 1 of the lexicon. Class two affixes have the following characteristics: they make a stress change during the word formation process and create some phonological rules such as trisyllabic shortening, and nasal assimilation.

In Benadiri nouns, the position of primary stress also shifts from the first syllable to the final syllable as shown (8)below:

8.	**[Noun base**	**[[Noun base]+ Sfx]**	**LR**	**>**	**PR**
	[´far]	[´far]+ɔ]	[farɔ]		[fa´rɔ]
	Finger				**Fingers**
	[´ɪl]	[´ɪl]+ɔ]	[ɪlɔ]		[ɪ´lɔ]
	Eye				**Eyes**

[ˈmɔːs]   [ˈmɔːs]+as]   [mɔːsas]   [mɔːˈsas]

Banana   **Bananas**

1.9.1.5 The Bracket Erasure Convention

The Bracket Erasure Convention which is a significant component of the theory of Lexical Phonology is used to elaborate a process of erasing internal brackets during the word formation process. The Bracket Erasure Convention (BEC) is defined as one that gets rid of the internal brackets at the end of each level (Durand 1990:175).

During the word formation process, the brackets are brought at each morphological stratum. For example, the brackets are brought at stratum one that includes derivation. Then the brackets are erased. The following derivation is used to show the BEC application.

9.   **[Verb base] [[Verb base]+Sfx]   LR   >   PR**

[ˈreturn]   [[ˈreturn]+ee]   [retutnee]   [returˈnee]

[ˈabduct]   [[ˈabduct]+ee]   [abductee]   [abducˈtee]

1.9.2 Autosegmental Phonology

In this study, Autosegmental phonology is used to describe tonal changes. From the rest of the discussion, this theory has singled out the tones of nouns seperately. The basic understanding of the phonological features are not categorised together in arranged chunks, but they lead their own independent lives (Goldsmith,1990:8). This principle is used in the analysis of nouns in Benadiri dialect to indicate or mark the tone changes in noun plural formation and gender specifications.

It is believed that many of the world's languages are tone languages and Somali language is one of them. In tone languages, pitch is used to differentiate the word meaning or to carry out grammatical distinctions. Tone languages therefore vary from stress (non-tonal) languages such as English whereby pitch cannot have such functions (Katamba, 1989).

Igala which is Nigerian language is a language that uses pitch differences to contrast the meaning of the word. For instance,

10.   áwó = a guinea fowl   àwó =   a slap

                       áwō = an increase   àwō =   a comb

                       áwò = hole   àwò ˊ =   a star

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Benadiri which is one of Somali dialects also has a tone that differentiates the singular and plural as illustrated below:

11.   óˊrg ɪ̀ =   a male goat

                  ò`rgɪˊ =   many male goats

 or it can show us gender specification as illustrated below:

  12.   waˋħaˊr =   a young female goat

                  waˊħàˋr =   a young male goat

Sequential tones of high and low sometimes may be recognised on syllables which are separated (CVCV) and a falling tone sometimes may be on a single syllable (cvˆ). Such features can be explained as Autosegments. They can be represented at a structural level that is higher compared to individual vowel or (consonant segments). These features are indicated by lines of association (Carlos 2004:29). Consider the example below:

13a).   Segmental Tiers: bulu   **13b.**   [+syll]   [-syll]   [+syll]

        Tonal Tiers :   H L   [High]   [-high]
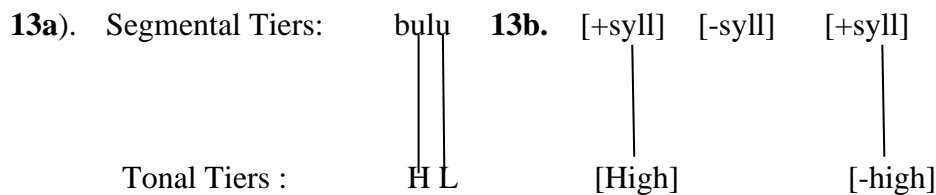
There is a representation with two tones and three vowels in example (**13a**). It shows that the low tone is associated multiply which means that the two successive syllables are generated with low tone.

14a)   CVCVCV   **13b**)   CV

          H   L   H L

In Hausa (Nigeria), there are monosyllabic verbal nouns that are formed from high-toned verbs which indicate a falling tone. A falling tone is used to derive a noun from a verb. One usual method to elaborate the tonal changes is the use of low tone followed by lengthening of the final vowel (Yip 2002: 106).

15.)   Shá= to drink   sháaˋ = drinking (N)

Benadiri manifests a system where tone is used to mark plural nouns as well as to show gender differences. Autosegmenal phonology is very crucial in the analysis of tone.

1.10. Research Methodology

1.10.1. Data Collection Procedures

This study applied a qualitative method data collection. The qualitative method is a way of social action that emphasizes how the people interpret their experiences to comprehend the reality of social phenomenon (Zohrabi, 2013). The researcher employed this qualitative method by conducting semi-structured interviews with Benadiri native speakers who were identified as respondants.

The researcher collected a sample side of 100 Benadiri nouns. The data source was 20 speakers between 30 to 60 years who were randomly chosen. The 20 speakers comprised 10 males and 10 females to ensure there was gender balance. The informants of this dialect are people who live in South C and Eastleigh. The researcher who grew up in the Benadir region of Somalia identified competent 20 native speakers of the Benadiri dialect. The 20 individuals chosen represented the Benadiri people of Somalia.

Three data-collection techniques were used, namely; normal discussions, elicitation, and interview. Firstly, being a native speaker of Benadiri dialect, the researcher used native speaker intuition. In addition, he made a list of words and then he participated in a conversations or discusions in order to gather a lot of data. The information was counter-checked from one speaker to another to ensure correct information of forming plural nouns. Using the strategy of elicitation, the study conducted an interview with some Benadiri native speakers. The interviewees were given a list of verbs in order to derive nouns. The researcher also used a notebook and a Digital voice Recoder to record the conversation with the informants to check the articulation of tones on nouns and this greatly assisted to identify the identification of tone changes in nouns.

1.10.2 Data Analysis Procedures

The data that was collected from the informants was transcribed and critically analysed by looking at the changes that involved in consonant processes such as consonant weakening, consonant substitution, consonant insertion, consonant elision, vowel deletion, vowel lowering, and as well as tone marking. Data analysis was done using Lexical Phonology and Autosegmental Phonology theories.

CHAPTER TWO

A PHONEMIC INVENTORY OF BENADIRI SOUNDS

2.1. Introduction

This chapter discusses the sound system of the Benadiri dialect. In order to clearly understand the morpho-phonological processes that take place in the nouns of Benadiri dialect, it is crucial to explore the sound system of the Benadiri dialect by looking at its consonants and vowels. The syllable system of this dialect is also discussed given that most of the morphological and phonological changes involving the noun happen within the syllable. Consonants are explained first followed by vowels and lastly, syllables.

2.2. Benadiri Consonants

The Benadiri dialect has twenty two consonants produced at ten places of articulation as presented in Table 1. The places of articulation are bilabial, labio-dental, dental, alveolar, palato-alveolar, retroflex, velar, uvular, pharyngeal and glottal. It also has 7 ways in which consonants are articulated. These are stops, nasals, fricatives, affricates, trills, laterals and glides.

The consonant inventory of Benadiri dialect is different from the other dialects of Somali which do not have the pharyngeal and uvular fricatives [ħ, ʕ, x]. The Somali consonant phoneme IPA chart provided here is adopted from Koffi (2010).

	Bilabial	Labio-dental	Dental	Alveolar	Plato-alveolar	Retroflex	Velar	Uvular	Pharyngeal	Glottal
Stops	b			t		ɖ	k g	q		ʔ
Nasals	m			n						
Fricatives		f	ð	s	ʃ		x		ħ ʕ	h
affricate					dʒ					
Trill				r						
Lateral				l						

Glides	w				j				

Table 1: The consonant inventory of Benadiri dialect (Adopted from Koffi, 2010:11)

Table 1shows that the Benadiri dialect has seven stops, two nasals, eight fricatives, one affricate, one trill, one lateral and two glides. The Benadiri dialect has both voiced and voiceless consonants.

Table 2 presents examples of consonants in Benadiri dialect in words. The graphemes, corresponding to the sounds are listed alongside the IPA symbols.

GRAPHEME	IPA	BENAADIRI-WORDS	TRANSCRIPTION	Gloss
b	/b/	bir	/bɪr/	Metal
t	/t/	toori	/tɔ:rɪ/	Dagger
j	/dʒ/	Jid	/dʒɪð/	Road
kh	/x/	khabiir	/xaβɪ:r/	Expert
q	/q/	qaado	/qa:ðɔ/	Spoon
dh	/ɖ/	dhalo	/ɖalɔ/	Bottle
d	/ð/	dooli	/ðɔ:lɪ/	Mouse
r	/r/	rag	/raɡ/	man
s	/s/	suul	/su:l/	Thumb
sh	/ʃ/	sheeko	/ʃe:kɔ/	Story
c	/ʕ/	ceel	/ ʕe:l/	Well
f	/f/	fog	/fɔg/	Far
k	/k/	kab	/kap/	Shoe
g	/g/	geel	/ ge:l/	Camel

l	/l/	loos	/lɔːs/	Gold nut
m	/m/	moos	/mɔːs/	Banana
n	/n/	naas	/naːs/	Breast
w	/w/	war	/war/	News
h	/h/	hoos	/hɔːs/	Shadow
x	/ ħ/	xeeb	/ħeːp/	Beach
y	/j/	yar	/jar/	Small

Table 2: The consonants of Benadiri with examples

2.2.1 Nasals

There are two nasal consonant phonemes in the Benadiri dialect. These are the voiced bilabial nasal /m/ and the voiced alveolar nasal /n/. These phonemes are illustrated in (16) below:

16.   **Orthography**   **Transcription**   **Gloss**

      mar   /mar/   once

      mir   /mɪr/   seed

      niman   /nɪman/   men

17.   **Orthography**   **Transcription**   **Gloss**

      naag   /naːg/   woman

      naf   /naf/   soul

      neef   /neːf/   breath

2.2.2 Stops

The Benadiri dialect has the following stops: /b/, /t/, / ɗ /, /k/, /g/, /q/ and /ʔ/. The phoneme /b/ is a voiced bilabial stop that occurs at word initial positions.

18.   **Orthography**   **Transcription**   **Gloss**

      bar   /bar/   half

	beer	/be:r/	farm
	bus	/bus/	dust

The phoneme /b/ becomes [p] at word-final positions. Consider the following examples:

19.	**Orthography**	**Transcription**	**Gloss**
	ceeb	/ʕe:p/	shame
	sab	/sap/	feast
	dib	/ðip/	tail

However, when the phoneme /b/ is in intervocalic positions, it changes to [β] as illustrated below:

20.	**Orthography**	**Transcription**	**Gloss**
	xeebo	/ħe:βɔ/	beaches
	wabi	/waβɪ/	rever
	qubo	/quβɔ/	turtle

The voiced retroflex stop /ɖ/ occurs at word intial and word-medial positions. Consider the following examples.

21.	**Orthography**	**Transcription**	**Gloss**
	dhul	/ɖul/	earth
	qandho	/qanɖɔ/	fever
	dhir	/ɖir̩/	plants

The voiceless velar stop /k/ is found in all positions. Consider the following examples

22.	**Orthography**	**Transcription**	**Gloss**
	Koob	/kɔ:p/	cup
	ɪlik	/ɪlɪk/	tooth
	rakab	/rakap/	passenger

The phoneme /g/ is a voiced velar stop which occurs in word-initial positions and word final positions as illustrated in (23) below:

23a.	Orthography	Transcription	Gloss
	bag	/bag/	page
	caag	/ʕa:g/	plastic
	gar	/gar/	beard

However, if it occurs in intervocalic positions, it becomes a voiced velar fricative as illustrated in (23b) below:

23b.	Orthography	Transcription	Gloss
	bagag	/baɣag/	pages
	caagag	/ʕa:ɣag/	plastics
	joogag	/ʤɔ:ɣag/	containers

In the examples above, part of the word is repeated to make it plural form.

The phoneme /q/ is a voiced uvular stop which occurs in all positions of Benadiri words. Consider the folowing examples:

24.	Orthography	Transcription	Gloss
	qar	/qar/	edge
	duq	/ðuq/	old man
	luqun	/luqun/	neck

This voiced glottal stop /ʔ/ is voiced glottal is found in all positions of Benadiri dialect. Consider these examples:

25.	Orthography	Transcription	Gloss
	ɪl	/ʔɪl/	eye
	lo'	/lɔʔ/	cow
	su'aal	/suʔa:l/	question

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2.2.3 Fricatives

The Benadiri dialect has eight fricatives: /f/, /ð/, /s/,/ʃ/, /x/, /ħ/, /ʕ/ and /h/. it is a voiceless labio-dental fricative as illustrated in (26) below:

26.	Orthography	Transcription	Gloss
	far	/far/	finger
	fur	/fʊr/	lid
	neef	/ne:f/	breath

The phoneme /ð/ is a voiced fricative dental. At word-initial and word-medial positions, it is pronounced as the same /ð/ as illustrated in (27a) below:

27a.	Orthography	Transcription	Gloss
	darin	/ðarin/	mat
	dacas	/ðaʕas/	slippers
	doon	/ðɔ:n/	boat
27b.	Orthography	Transcription	Gloss
	Sumado	/sʊmaðɔ/	marks
	dalado	/ðalaðɔ/	umbrella
	qaado	/qa:ðɔ/	spoon

The phoneme /ð/ is pronounced more like /t/ when it comes at word-final positions as illustrated in (27c) below:

27c.	Orthography	Transcription	Gloss
	Sumað	/sʊmat/	mark
	Saliið	/salɪ:t/	oil
	Raað	/ra:t/	footprint

The above examples in (27c) shows that the phoneme /ð/ is pronounced as /t/ when it is at word final positions.

The voiceless alveolar fricative /s/ occurs in all positions in Benadiri as illustrated in the example below:

28.	Orthography	Transcription	Gloss
	sin	/sɪn/	hip
	sisin	/sɪsɪn/	sesame
	miis	/mɪːs/	table

The voiceless palato-alveolar fricative phoneme /ʃ/ is orthographically written as <sh> as shown in examples (29):

29.	Orthography	Transcription	Gloss
	shido	/ʃɪðɔ/	harship
	shaash	/ʃaːʃ/	headscarf
	cariish	/ʕarɪːʃ/	cottage

The voiceless velar fricative /x/ is written orthographically as <kh>. The phoneme /x/ is borrowed from Arabic. It occurs mostly in words that are borrowed from Arabic as shown in (30) below:

30.	Orthography	Transcription	Gloss
	Khabiir	/xaβɪːr/	expert
	Khamro	/xamro/	beer
	Khashin	/xaʃɪn/	garbage

The voiceless pharyngeal fricative /ħ/ is written orthographically as <x> as illustrated in (31) below:

31.	Orthography	Transcription	Gloss
	xeer	/ħeːr/	fat
	xabsi	/ħaβsɪ/	prison
	koox	/kɔːħ/	group

The voiced pharyngeal fricative /ʕ/ is orthographically written as /c/ as shown in (32).

32.	Orthography	Transcription	Gloss
	cows	/ʕaus/	grass
	cabsi	/ʕaβsɪ/	fear
	duco	/ðʊʕɔ/	pray

The voiceless glottal fricative /h/ which occurs in all positions of the word. Consider the following examples:

33.	Orthography	Transcription	Gloss
	har	/har/	shade
	baahi	/ba:hɪ/	hunger
	daah	/ða:h/	curtain

2.2.4 Affricate

The Benadiri dialect has the voiced plato-alveolar affricate /ʤ/ which occurs in word initial and word-medial positions but when it occurs at word-final positions, it becomes the voiceless affricate sound [ʧ] as illustrated in (34) below:

34a.	Orthography	Transcription	Gloss
	jir	/ʤir/	body
	jiijil	/ʤi:lʤil/	small chicken
	jilib	/ʤɪlip/	knee

34b.	Orthography	Transcription	Gloss
	xaj	/ħaʧ/	pilgrimage
	taaj	/ta:ʧ/	crown

2.2.5 Glides

The voiced plato-alveolar glide /j/ is found in all positions as illustrated in (35) below:

35.	Orthography	Transcription	Gloss
	yaxaas	/jaħa:s/	crocodile

caay	/ʕaːj/	insult
yanyo	/janjɔ/	Tomato

The voiced bilabial glide /w/ occurs only in word-initial and word-medial position. It never occurs at word-final positons as illustrated in (36) below:

36.	Orthography	Transcription	Gloss
	war	/war/	news
	wiil	/wɪːl/	boy
	gows	/gəus/	molar

2.2.6 Trill

The voiced alveolar trill /r/ is found in all positions of Benadiri dialect as illustrated in (37) below:

37.	Orthography	Transcription	Gloss
	roog	/rɔːg/	carpet
	baroor	/bar ɔːr/	mourn
	gar	/gar/	chin

2.2.7 Lateral

Benadiri dialect has a voiced alveolar lateral /l/ which occurs in all word positions. Consider the examples in (38).

38.	Orthography	Transcription	Gloss
	laf	/laf/	bone
	dilaal	/ðilaːl/	broker
	luul	/luːl/	diamond

2.3 VOWELS

The Benadiri dialect has ten vowels that are produced both with an advanced tongue root [+ATR] and a retracted tongue root [–ATR]. There are five long and five short vowels. It also has diphthongs. The vowel set of +ATR also includes certain quality differences: according to

their –ATR counterparts, they are all much further front because + ATR vowels are more likely to be pushed forward to the front (Krämer, 2003). The following table illustrates the vowels of Benadiri dialect according to Koffi (2010:122).

Height	Front	Back	+ATR	-ATR
High	[i,ɪ]	[u,ʊ]	[i,u]	[ɪ,ʊ]
Mid	[e,ɛ]	[o,ɔ]	[e,o]	[ɛ,ɔ]
Low	[æ]	[ɑ]	[ɑ]	[æ]

Table 3: The vowel Chart of Benadiri dialect of Somali

2.3.1. Front Vowels

The Benadiri dialect has two high front vowels [i] and [ɪ] which are released at the front of the mouth. The first vowel is [+ATR] and the second vowel is [–ATR]. There are other front vowels which are the mid high front vowel [e] and the mid low front vowel [ɛ]. This dialect also has a low front vowel which is [æ]. The short front vowels of Benadiri dialect have their parallel long ones which are all unrounded. These vowels are presented in (39) by using minimal pairs.

39.	Phoneme	Orthography	Transcription	Gloss
	/i/	shir	/ʃɪr/	meeting
	/i:/	shiir	/ʃi:r/	bad smell
	/ɪ/	tin	/tɪn/	hair
	/ɪ:/	tiin	/tɪ:n/	fig
	/e/	xer	/ħer/	group
	/e:/	geel	/ge:l/	codes
	/ɛ/	hel	/hɛl/	find
	/ɛ:/	heel	/hɛ:l	cinnamon
	/æ/	bar	/bær/	teach
	/a:/	baar	/bæ:r/	frisk

2.3.2. Back vowels

During the production of the back vowels, the back part of the tongue is involved. According to Ladefoged (1982:12-13), the tongue body goes high in the production of the high back vowel [u] while the tongue is lowered in the articulation of the low back vowel [ɑ]. The Benadiri dialect has [u] and [ʊ] which are high back vowels with their long counterparts [u:] and [ʊ:], respectively. The back rounded vowel [u] is tense, but the back rounded vowel [ʊ] is lax. [o] and [ɔ] are mid back vowels along with their long counterparts which are long ones. The [o:] can be explained as a mid high back rounded vowel which is tense, but the [ɔ:] is described as a lax mid-low back rounded vowel which is lax. The back vowels in the words of Benadiri dialect are given in (40) below.

40.	Phoneme	Orthography	Transcription	Gloss
	/u:/	uus	/ʔu:s/	dung
	/u/	ur	/ʔur/	smell
	/ʊ:/	suun	/sʊ:n/	belt
	/ʊ/	sun	/sʊn/	poison
	/o:/	oog	/ʔo:g/	flame
	/o/	oð	/ʔog/	know
	/ɔ:/	moos	/mɔ:s/	banana
	/ɔ/	col	/ʔɔl/	war

Vowel length is used to show a difference in word meaning in the Benadiri dialect of Somali. This dialect does not have a central vowel or the schwa [ə] unlike some dialects of Somali.

2.3.3. DIPHTHONGS

Ladefoged (1982:26) says that a diphthong refers to two vowels whose articulation shows movement from one vowel to another within one syllable. These vowels are not understood as two separate vowels, but as a single sound. The Benadiri dialect has five diphthongs, each consisting of a sequence of two short vowels. Below are examples of words that contain diphthongs in the Benadiri dialect:

41.	Phoneme	Orthography	Transcription	Gloss

/ei/	ey	/ei/	dog
/ai/	cay	/ʕaj/	insult
/ɔɪ/	oy	/ɔɪ/	cry
/aʊ/	cows	/ʕaʊs/	grass
/ou/	gaws	/ɢous/	molar

2.4. The Syllable Structure of the Benadiri Dialect

Clements and Keyser (1985:28) noted that the most common syllable structure viewed in the world languages is the CV syllable structure which means that one consonant is followed by a single vowel.

However, the Somali syllable structure is described as (C) V (C). This means an optional consonant (C) is followed by a vowel which is then followed by another optional a consonant. Saeed (1999:16) noted that the syllable structure of the Somali language occurs with one of the combinations discussed below:

A Somali syllable may comprise one vowel (V). For example, /u/ which means 'to' or 'for'. It can be a long [e:] which means 'of' or 'and'. It can be a diphthong /ei/ which means 'also' as illustrated in (42) below:

42.	Orthography	Transcription	Gloss
	u	/u/	to/for
	ee	/e:/	of/and
	ey	/ei/	also

The syllable can also be a consonant that is followed by a short or long vowel as illustrated below:

43.	Syllable pattern	Orthography	Transcription	Gloss
	CV	ka	/ka/	from
	CVV	waa	/wa:/	era

The syllable can also contain a consonant that is followed by a vowel which is then followed by a consonant.

44. **Syllable pattern** **Orthography** **Syllable description** **Gloss**

Syllable pattern	Orthography	Syllable description	Gloss
CVC	far	/far/	finger
CVVC	buul	/bu:l/	nest

By looking at the above data, the study summarizes the syllable structure of Benadiri as follows:

1. It can be a short vowel (**V**) or long vowel (**VV**) or diphthong vowel.
2. It can be CV which is a consonant and vowel or it can be **CVV** which is a consonant and long vowel or diphthong vowel.
3. It can be CVC which is a consonant and vowel that is followed by a consonant or **CVVC** which is a consonant with long vowels followed by a consonant as shown above.

When a word appears to start with a vowel in its pronunciation, the glottal sound /ʔ/ is placed or inserted at the beginning of the word so as to give an onset to the syllable as illustrated in (45) below:

45. **Syllable pattern** **example** **Syllable description** **Gloss**

Syllable pattern	example	Syllable description	Gloss
CVVC	oog	/ʔɔ:g/	flame
CVC	il	/ʔɪl/	eye
CVC	ul	/ʔul/	cane

Morevover, the Benadiri dialect does not accept consonant clusters at the beginning and end of a word but the consonant clusters can only occur word internally at syllable boundaries. At syllable boundaries, in word medial position, there is a maximum of two consonants as seen in the examples in (46).

46. **Orthography** **Transcription** **Gloss**

Orthography	Transcription	Gloss
danyeer	/ðan∦ɟe:r/	monkey
madhab	/mað∦hap/	sect
dhagxo	/ɖa g∦ħɔ/	stones

2.5. Conclusion

This chapter has discussed the Benadiri consonant and vowel systems. It has highlighted the 22 consonant phonemes and the 20 pure vowels found in Beandiri. The vowels are classified into long and short vowels as well as [+ATR] and [-ATR]. There are five diphthongs in Benadiri. The syllable structure of Somali is (C)V(C) phonetically. A clusters of two consonants does not occur at a word-initial position and word-final position. It only occurs at syllable boundaries. When a vowel occurs at word-initial positions, a glottal stop is inserted at the beginning of the word.

CHAPTER THREE

LEXICAL MORPHOLOGICAL PROCESSES IN BENADIRI DIALECT

3.1 Introduction

Morphology is a branch of linguistics that is about the study of forms in various applications and constructions (Mathews,1991:3). Todd (1987:8) points out that it is the study of morphemes that have the smallest important units of grammar. The lexicon come into a language through different channels. Some of the sources that words enter in a language include inflection, derivation, compounding, blending, and borrowing among others.

This chapter investigates aspects of morphological components of the Benadiri dialect of Somali. It deals with the ordering of affixes in the Benadiri lexicon, Level 2 morphological processes in Benadiri (inflectional processes), namely the formation of the definite noun and inflection for number (singular and plural). It also analyses Level 1 morphological processes in Benadiri (derivational processes), namely derivation of nouns from verbs (V→N), and adjectives (Adj→N) and nouns from nouns (N→N).

3.2 Proposed Levels of Analysis

The elaboration and analysis in this part are carried out within the framework of the Lexical Phonology theory which was initially referred to as the Lexical Morphology theory. According to the theory, the morphological processes include the addition of affixes at various levels that result in the formation of various word classes; the various strata at which affixation is made are related with a group of morphological rules. In addition, there are phonological rules that indicate how the resultant structure constructed by the morphology is articulated.

It is crucial to observe that although the lexicon is built hierarchically; there is no agreement on the number of the levels included. According to Mohanan (1982: 8), the lexicon has 4-strata which are hierarchical. For instance, he says that derivations occur at both level 1 and level 2 while levels 3 and 4 include the processses of compounding and inflection, repectively.

Kiparsky (1989:259) postulates 3-levels where level 1 comprises derivation and primary inflection while level 2 includes compounding. Level 3 contains secondary inflection. Katamba (1989:259) argues in support of level 1 and level 2. Stratum 1 involves derivations while stratum 2 includes inflections.

The theory also refers to what is called the Bracketing Erasure Convention that is employed to elaborate the practise of erasing internal brackets inserted during the word formation processes. Bracketing Erasure Convention (BEC) is used to erase the internal brackets at the end of each stratum (Durand 1990:175).

3.3 The Ordering of affixes in the Benadiri Lexicon

In view of the discussion above, it can be posited that the Benadiri lexicon is made up of two strata. Stratum 1 consists of derivational processes while Stratum 2 comprises inflectional processes. Both processes involve the addition of affixes in the form of suffixes to the word base. In the following sections, we discuss the various inflectional and derivational processes that take place at the different strata.

3.3.1. Level 2 morphological processes in Benadiri (Inflectional processes)

The morphological processes that take place at level 2 of the Benadiri lexicon are essentially inflectional. These are inflections for the definite noun, and number (singular and plural).

3.3.1.1. Formation of the Definite Noun

Benadiri nouns are classified as being either definite or indefinite. Definite nouns are formed by adding a suffix to the noun base in a process that takes place at Level 2. Example 47 illustrates the process of inflecting a noun base to form the definite noun in Benadiri dialect.

47.	**[Noun base]**	**[[Noun base]+Sfx]**	**LR**	**>**	**PR**	**Gloss**
(i)	[´nɪn]	[[´nɪn]+ka]	[nɪnka]		[nin´ka]	the man
	[´ʕan]	[[´ʕán]+ka]	[ʕanka]		[ʕan´ka]	the cheek
(ii)	[´guri]	[[´guri]+ga]	[guriga]		[guri´ga]	the house
	[ðugsi]	[[ðugsi]+ ga]	[ðugsiga]		[ðugsi´ga]	the school
(iii)	[´maðaħ]	[[´maðaħ]+a]	[maðaħa]		[maða´ħa]	the head
	[´ḍagaħ]	[[´ḍagaħ]+a]	[ḍagaħa]		[ḍaga´ħa]	the stone
(iv)	[´bir]	[[´bir]+ta]	[birta]		[bir´ta]	the metal
	[´laʕag]	[[´laʕag]+ta]	[laʕagta]		[laʕag´ta]	the money
(v)	[´loʔ]	[[´loʔ]+ða]	[loʔða]		[loʔ´ða]	the cattle

[´bari]	[´bari]+ ða]	[bariða]	[bari´ða]	the backside
(vi) [´bil]	[[´bil]+ʃa]	[bilʃa]	[bi´ʃa]	the month
[´ul]	[[´ul]+ʃa]	[ulʃa]	[u´ʃa]	the cane

In example 47, we notice that the definite noun is formed by affixing the suffixes –ka, -ga, -a, -ta, -ða and -ʃa to the indefinite noun base. However, we also notice that in 47 (i) up to (vi), the addition of the affix to the noun base results in some phonological changes in the phonetic representation of the noun. In 47 (vi), the sound [l] gets fused into [ʃ] such that whereas the LR is [bilʃa], the PR becomes [bi´ʃa]. This shows that the morphological process of affixation has played a role in the phonological form of the noun. The process of adding the suffix –ka, -ga,-a,-ta,-ða and -ʃa to the noun base results in the shifting of the stress from the first syllable to the final syllable. These suffixes (–ka, -ga,-a,-ta,-ða and -ʃa) are considered to be non-neutral affixes. These phonological changes are discussed in Chapters 4.

3.3.1.2. Inflection for Number (Singular and Plural)

The formation of plural nouns in Benadiri has two parameters, namely suffixation and the position of the tone. The plural forms of some nouns are marked by either high or low tone. Tone in Benadiri is discussed in chapter 5. Other plural forms are marked using different suffixes as illustrated in (48) below:

48.	[Noun base]	[[Noun base]+Sfx]	LR >	PR	Gloss
(i)	[´na:s]	[[´na:s]+ɔ]	[na:sɔ]	[na:´sɔ]	breasts
	[´be:r]	[[´be:r]+ɔ]	[be:rɔ]	[be:´rɔ]	farms
(ii)	[´waðɔ]	[[´waðɔ]+ɔ:jin]	[waðɔ:jin]	[waðɔ:´jin]	streets
	[´fu:stɔ]	[[´fu:stɔ]+ɔ:jin]	[fu:stɔ:jin]	[fu:stɔ: ´jin]	barrels
(iii)	[´mɪ:s]	[[´mɪ:s]+as]	[m ɪ:sas]	[m ɪ:´sas]	tables
	[´ħa:s]	[[´ħa:s]+as]	[ħa:sas]	[ħa:´sas]	wives
(iv)	[´ilik]	[[´ilik]+ɔ]	[ilikɔ]	[il´kɔ]	teeth
	[ħuβin]	[[ħuβin]+ɔ]	[ħuβinɔ]	[ħuβ´nɔ]	organs
(v)	[´fure]	[[´fure]+ja:l]	[furejaal]	[fura´ja:l]	keys

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| [ˈwaðe] | [[ˈwaðe]+ja:l] | [waðeja:l] | [waða´ja:l] | drivers |

In example 48, we notice that the plural nouns are formed by affixing the suffixes –ɔ, -ɔ:jin, -as, and -jaal, to the noun base. However, we also notice that in 48 (i) up to (v), the addition of the affix to the noun base results in some phonological changes in the phonetic representation of the noun. In 48 (iv), the second vowel in [**ilikɔ**] gets deleted in the Phonetic represetation and becomes [ilkɔ]. This vowel deletion shows that the morphological process of affixation has also played a role in the phonological form of the noun. Similarly, in 48 (v), the process of adding the suffix –**jaal** to the noun base [**fure**] results in the vowel [**e**] in [**fure**] changing to [**a**] in the phonetic representation as in [furaja:l]. These phonological changes will be discussed in Chapter 4.

3.4. Level 1 Morphological Processes in Benadiri (Derivational Processes)

The morphological processes that take place at level 1 of the Benadiri lexicon are essentially derivational processes. These are derivations of nouns from verbs, adjectives and nouns. This section focuses on the morphological process of derivation in Benadiri dialect. The derivation process results in the formation of a word from one category of a grammar to another one with a meaning or category that is distinct from that of its base through the addition of an affix. The data provided manifests a shift of stress in the position of the derived words, thereby explaining the role of morphology in phonology which are discussed later. This may guide us to comprehend the resultant phonological structure of a word at the application of morphological and phonological rules. All derivational morphemes in Benadiri dialect are suffixes, which are added to the verb base at stratum 1.

3.4.1. Derivation of the Noun from Verbs (V→N)

This is a process of suffixation where the suffix <**–e**> is added to the verb base followed by a change in the position of the primary stress. <**–e**> is a noun forming morpheme as illustrated in (49) below:

49)	**[Verb Base]**	**[[Verb base]+ Sfx]**	**LR**	**>**	**PR**
	[ˈbar]	[[ˈbar]+e]	[bare]		[ba´re]
	Teach				**Teacher**
	[ˈfar]	[[ˈfar]+e]	[fare]		[fa´re]
	Order				**Orderer**

[ˈʤar]	[[ˈʤar]+e]	[ʤare]	[ʤaˈre]
Cut			**Cutter**
[ˈmar]	[[ˈmar]+e]	[mare]	[maˈre]
Walk			**Walker**
[ˈqɔt]	[[ˈqɔt]+e]	[qɔte]	[qɔˈðe]
Dig			**Digger**
[ˈfur]	[[ˈfur]+e]	[fure]	[fuˈre]
Open			**Opener**
[ˈwat]	[ˈwat]+e]	[wate]	[waˈðe]
Drive			**Driver**

The verbs in (**49**) have a CVC syllable, but the derived words have two syllables which take the CVCV pattern. The stress has shifted from [ˈ**a**] in the first syllable to [ˈ**e**] in the final syllable. We have demonstrated that the suffix -**e** is a non-neutral affix because it causes a shift in the position of the primary stress. Stress in the verb base is on the first syllable while in the derived word it is on the final syllable.

The example of (49) is shown in Bracketing Erasure Convention which is used during the processes of forming words. It is introduced at each morphological level. The brackets then are deleted before entering the next level. For instance, the brackets above are used at Level 1 which involves derivational morphological rules. Upon the process of word formation, the researcher used inner and outer brackets showing the base verb and suffix, respectively. It is necessary to delete brackets at lexical representation so that the word is available for further phonological processes.

There are morphological processes that involve the derivation of the subject from verbs by adding the suffix [-je] to the verb base as illustrated in (50) below:

50)	[Verb Base]	[[Verb base]+ Sfx]	LR	>	PR
	[ˈbiħi]	[[ˈbiħi]+je]	[biħije]		[bɪħɪˈje]
	Supply				**supplier**

[ˈtali]	[[ˈtali]+je]	[talije]	[talɪˈje]
Command			**commander**
[ˈkari]	[[ˈkari]+je]	[karije]	[karɪˈje]
Cook			**cook**
[ˈqɔrʃe]	[[ˈqɔrʃe]+je]	[qɔrʃeje]	[qɔrʃeˈje]
Plan			**planner**
[káħe]	[[ˈkaħe]+je]	[kaħeje]	[kaħeˈje]
Drive			**driver**

Saeed (1999) refers to the (-e or -je) suffixes as instrumental suffixes because they show a profession. The derived words take three syllables.

There are processes of derived words from verbs by suffixing <-aa> to show an activity that is done more intensively. The derived words with the suffix <-aa> also show an accupation or profession.

51. **[Verb Base]**   **[[Verb base]+Sfx]**   **LR**   **>**   **PR**

[ˈðɪl]	[[ˈðɪl]+aa]	[ðɪlaa]	[ðɪˈla:]
Murder			**Murderer**
[ˈʕap]	[[ˈʕap]+aa]	[ʕaβaa]	[ʕaˈβa:]
Drink			**Drunkard**
[ˈgur]	[[ˈgur]+aa]	[guraa]	[guˈra:]
Collect			**Collector**
[ˈsafar]	[ˈsafar]+aa]	[safaraa]	[safˈraa]
Travel			**Traveller**
[ˈɖip]	[ˈɖip]+aa]	[ɖiβaa]	[ɖiˈβaa]
Trouble Make			**Touble Maker**

The derived words in (51) express an activity that is done more intensively. The derived words have the syllable structure of CVCVV.

In this process, there are also words that are drived from verbs by adding <-aal> to indicate the activity itself. They have two syllables and are accented on the second syllable as examplified in (52) below:

52. **[Verb Base]** **[[Verb base]+ Sfx]** **LR** **>** **PR**

[ˈðir]   [[ˈðir]+a:l]   [ðira:l]   [ðɪˈra:l]

Send   **Sending**

[ður]   [[ˈður]+a:l]   [ðura:l]   [ðuˈra:l]

Inject   **Injecting**

[ˈqɔr]   [[ˈqɔr]+a:l]   [qɔra:l]   [qɔˈra:l]

Write   **Writing**

[ˈʤar]   [[ˈʤar]+a:l]   [ʤara:l]   [ʤaˈra:l]

Cut   **Cutting**

[ˈqir]   [[ˈqir]+a:l]   [qira:l]   [qɪˈra:l]

Admit   **Admitting**

[ˈʔog]   [[ˈʔog]+a:l]   [ʔoga:l]   [ʔɔˈga:l]

Know   **Knowing**

[ˈmuq]   [[ˈmuq]+a:l]   [muqa:l]   [muˈqa:l]

See   **Seeing**

The following nouns are derived from verbs which are suffixed with [-**itaan**]. The words have a three syllabe structure of CVCVCVVC. They are also accented on the final syllable which means that the suffix <-itaan> leads to a shift in the position of primary stress in the derived words as illustrated in (53) below:

53. **[Verb Base]** **[[Verb base]+ Sfx]** **LR** **>** **PR**

[ˈħir]   [[ˈħir]+ita:n]   [ħirita:n]   [ħɪrɪˈta:n]

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Arrest			Arresting
[ˈðil]	[[ˈðil]+ita:n]	[ðilita:n]	[ðɪlɪˈta:n]
Kill			**Killing**
[ˈʕap]	[[ˈʕap]+ita:n]	[ʕaβita:n]	[ʕaβɪˈta:n]
Drink			**Drinking**
[ˈrap]	[[ˈrap]+ita:n]	[raβita:n]	[raβɪˈta:n]
Want			**Wanting**

3.4.2 Derivation of Nouns from Adjectives (Adj →N)

There are also derived nouns from adjectives by adding the suffix <-nimo> to the adjectives. This suffix is added to the adjective to form abstract nouns as illustrated in (54) below:

54)	**[Adj. base]**	**[[Adj. base]+ Sfx]**	**LR**	**>**	**PR**
	[ˈmaðəu]	[[ˈmaðəu]+nimɔ]	[maðəunɪmɔ]		[maðəunɪˈmɔ]
	Black				**Blackness**
	[ˈʕaðan]	[[ˈʕaðan]+nimɔ]	[ʕaðannɪmɔ]		[ʕaðannɪˈmɔ]
	White				**Whiteness**
	[ˈguðuð]	[[ˈguðuð]+nimɔ]	[guðuðfnɪmɔ]		[guðuðnɪˈmɔ]
	Clever				**Cleverness**
	[ˈmugði]	[[ˈmugði]+nimɔ]	[mugðinimɔ]		[mugðiniˈmɔ]
	Dark				**Darkness**

We see from the illustration (**54**) above that adjective base [maðəu] takes the syllable structure CVCVV while the derived noun [maðəunɪmɔ] obtains the structure CVCVVCVCV. We also notice that the primary stress on the first syllable of the adjective moves to the final syllable in the derived noun.

3.4.3 Derivation of Nouns from Nouns (N→N)

The suffix <-**toojo**> is added to the noun base that are derived from nouns. The suffix <-**toojo**> creates abstract nouns as illustrated in (55) below:

55)	[Noun base]	[[Noun base]+ Sfx]	LR	>	PR
	[ˈɖaħal]	[[ˈɖaħal]+tɔːjɔ]	[ɖaħaltɔːjɔ]		[ɖaħaltɔːˈjɔ]
	Heritage				**Inheritance**
	[ˈbɔqɔr]	[[ˈbɔqɔr]+tɔːjɔ]	[bɔqɔrtɔːjɔ]		[bɔqɔrtɔːˈjɔ]
	King				**Kingdom**
	[ˈʕaðəu]	[[ˈʕaðəu]+toojo]	[ʕaðəutɔːjɔ]		[ʕaðəutɔːˈjɔ]
	Enemy				**Enmity**

The above illustrations in (**55**) take the syllable structure CVCVC while the derived noun [ɖaħaltɔːˈjɔ] gets the syllable structure CVCVCCVVCV. The data shows that the primary stress on the first syllable of the noun moves to the final syllable of the derived noun.

In this process, the suffix <-le> is attached to the noun base to form another noun. The derived word with (-le) means an owner of something or a possessor of something as illustrated in (56) below:

56.	[Noun base]	[[Noun base]+ Sfx]	LR	>	PR
	[ˈʕaðaj]	[[ˈʕaðaj]+le]	[ʕaðajle]		[ʕaðajˈle]
	Toothbrush				**Toothbrush owner**
	[ˈʕanɔ]	[[ˈʕanɔ]+le]	[ʕanɔːle]		[ʕanɔːˈle]
	Milk				**Milk owner**
	[ˈbijɔ]	[[ˈbijɔ]+le]	[bijɔːle]		[bijɔːˈle]
	Water				**Water owner**
	[ˈharqaːn]	[[harqaːn]+le]	[harqaːnle]		[harqaːnˈle]
	Tailor				**A tailor man**
	[ˈkabo]	[[ˈkabo]+le]	[kaβole]		[koβɔˈle]
	Shoes				**Shoes owner**

The Bracket Erasure Convention is used in example (56). The brackets are shown during the processes of forming words. It is introduced at each morphological level. Upon the process of word formation, the researcher used inner and outer brackets showing the noun base and suffix, respectively. It is necessary to delete brackets at phonetic representation so that the word is available for further phonological processes.

If we critically look at all the derived words in this chapter, we can also see that they also have non-neutral affixes because they cause a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the derived word it is on the final syllable.

3.5 Conclusion

This chapter investigated aspects of morphological components of the Benadiri dialect of Somali. It became apparent in the discussions that Benadiri has both inflectional and derivational morphemes that act upon nouns, hense level 2 and , repectively, of LP theory were used in the analysis. All the affixes identified in both the inflectional and derivational processes were suffixes. There were no prefixes and infixes. One of the inflectional processes identified were the formation of the definite noun through the addition of the suffixes –ka,- ga, -a, -ða and -ʃa to the indefinite noun base. The other inflectional process was that of number (singular and plural). The plurals of nouns were formed by affixing the suffix -ɔ, -ɔːjin, -as, and –jaal, to the noun base. These two were analysed under level 2 morphological processes. In level 1 Morphological processes in Benadiri include derivation of nouns from verbs, adjectives and nouns from nouns. These are derivations of nouns from verbs, adjectives and nouns. Nouns were derived from verbs through suffixation –e, -je, -aa, -aal, or –taan. This was followed by a change in the position of the primary stress. Nouns were derived from adjectives by adding the suffix –nimo to the adjectives. The suffixes –toojo and –le were added to the noun base of nouns to form other nouns. There is a shift of primary stress in the position of the words upon the addition of certain affixes.

CHAPTER FOUR

LEXICAL PHONOLOGICAL PROCESSES IN BENADIRI DIALECT

4.1. Introduction

This chapter explores the phonologocal processes in noun plural formation in Benadiri dialect. The discussion focuses primarily on the structure of the noun base and the related suffixes that show number. Both consonant and vowel processes are discussed.

4.2. Consonant Processes in Noun Plural Formation

The consonant processes are consonant weakening, consonant substitution, consonant insertion, and consonant elision whereas the vowel processes are vowel deletion, and vowel lowering.

4.2.1. Consonant Weakening

Consonant weakening is one of the processes of phonology that indicates a reduction in degree of stricture. This process is also named a consonant lenition (Carr,1993:24). Consonant weakening is also defined in terms of a weak segment in relation to a strong segment such that '... a segment X is said to be weaker than Y if Y goes through an X stage on its way to zero.' (Vennemann, cited by Hyman, 1975:165).

Weakening is the opposite of consonant strengthening. The latter refers to the process of reinforcing a segment, for example in the situation where a non-geminate segment becomes geminate would be referred to as consonant strengthening.

Vennemann (1988) observes that "the strength of a consonant is in inverse relation to its place on the sonority scale, so that the consonants with the highest sonority are the weakest and consonants with the highest sonority are the strongest".

In favor for his claim, Vennemann postulated this Consonant Strength Hierarchy:

Strongest consonant   Voiceless plosives   lowest sonority

Voiced plosives

Voiceless fricatives

Voiced fricatives

Nasals

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	Lateral liquids	
	Central liquids	
Weakest consonant	Glides	
	High vowels	
	Mid vowels	
	Low vowels	highest sonority (Vennemann, Adapted from

Lisa, M.L (1966))

Some linguists are not completely in agreement with this ranking. For example, Crowley (1987:24) said that " the generalizations that can be made rergarding these correspodences are that voiced sounds can be considered "stronger'' than voiceless sounds. Similarly stops rank higher than continuant in strength, consonants are higher than semi-vowels, oral sounds are higher in status than glottal sounds and front and back vowels are higher in rank than central vowels. These generalizations about the relative strenght and weakness od sounds are equivalent to the "sonority hierarchy'' in synchronic phonology. Sonority and strength is complex combination of loundness of the sounds, pitch and the articulatory effort''. In Benadiri, the study shows some consonant processes, namely consonant weakening.

Katamba (1989:104) observed many phonological processes that can be examined by employing the notion of strength and weakening. These two concepts are not independent of each other. They are only two poles on the same gradient. He has introduced a commonly accepted phonological strength hierarchy. This symbol **[>]** in this context indicates a step towards a weaker pronunciation.

57. Voiceless > Voiced

Stop > Affricate > Fricative > Approximant > Zero

The sound [β] and [p] are a an allophone of the phoneme /b/ in Benadiri dialect. The phoneme /b/ is pronounced more like unaspirated English [p] when it occurs at word-final positions as illustrated in (58) below:

58. **LR** **>** **PR** **Gloss**

sab /ˈsap/ feast

	lab	/ˈlap/	chest
	ðab	/ˈðap/	fire

There is no stress change in the data above, but it indicates that the phoneme /b/ changes into [p] so that this phonological process can be captured as follows:

59.   /b/   → [p] / [+syll] ___ #

However, when this allophone [p] occurs in intervocalic positions, it changes into bilabial fricative [β]. This is also occurs in the plural formation as seen as illustrated below:

60.

Noun base]	**[[Noun]+ sfx]**	**LR**	**>**	**PR**	**Gloss**
[ˈkap]	[[ˈkap]+ɔ]	[kapɔ]		[kaˈβɔ]	shoes
[ˈʤe:p]	[[ˈʤe:p]+ɔ]	[ʤe:pɔ]		[ʤe:ˈβɔ]	pockets
[ˈħe:p]	[[ˈħe:p]+ɔ]	[ħe:pɔ]		[ˈħeeβɔ]	beaches
[ˈgɔ:p]	[[ˈgɔ:p]+ɔ]	[gɔ:pɔ]		[gɔ:βɔ]	spots

The above data shows that the phoneme /b/ changes to [β] when it is in intervocalic positions. The data also indicates a shift in the position of stress. Bracket Erasure Convention is also applied in example (60). This theory is shown during the processes of forming words. It is introduced at each morphological level. For instance, the brackets above are used at Level 2 which involves inflectional morphological rules. Upon the process of plural formation, the researcher used inner and outer brackets showing the noun base and plural morpheme, respectively. The barcket gets deleted at lexical representation so that the word is available for further phonological processes at phonetic representation. This symbol **[>]** in this context indicates a step towards a weaker pronunciation. The process of the voiced bilabial stop /b/ changing to the bilabial fricative [β] can be captured in the phonological rule numbered (61):

61.   /b/   → [β] / [+syll] ___ [+ syll]

In the articulation of some Benadiri words, some consonants are weakened. Consider the nouns used for illustration in (62) below.

62.

[Noun base]	**[[Noun]+sfx]**	**LR**	**>**	**PR**	**Gloss**
[ˈħa:t]	[[ˈħa:t]+ɔ]	[ħa:tɔ]		[ħa:ˈðɔ]	body hairs
[ˈse:t]	[[ˈse:t]+ɔ]	[se:tɔ]		[se:ˈðɔ]	arteries

| ['ʕa:t] | [['ʕa:t]+ɔ] | [ʕa:tɔ] | [ʕa:ˈðɔ] | clouds |

The data in (62) above, the addition of the suffix -ɔ transformed the phoneme /t/ into a voiced fricative [ð]. This occurs when it is in intervocalic position in the plural formation. The process of consonant weakening in the case of the sound /t/ can be captured in the phonological rule numbered (63):

63.   /t/ → [ð]/ [+syll] ___ [+syll]

Apart from weakening of the consonant that occurs word medially as a result of the addition of a suffix in (63), another phonological phenomenon is observed. There is primary stress shift. We have demonstrated that the suffix -ɔ is a non-neutral affix in so far it causes a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the inflected noun it is on the last syllable.

The following data also show consonant lenition where a vowel and a consonant are added to the noun base to form plurals as illustrated in (64) below:

64.	**[Noun base]**	**[[Noun]+ sfx]**	**LR**	**>**	**PR**	**Gloss**
	['bu:t]	[['bu:t]+at]	[bu:tat]		[bu:ˈðat]	boots
	['ra:t]	[['ra:t]+at]	[ra:tat]		[ra:ˈðat]	footprints
	['se:t]	[['se:t]+at]	[se:tat]		[se:ˈðat]	St. lines
	['kejt]	[['kejt]+at]	[kejtat]		[kejˈðat]	Treasures
	['su:t]	[['su:t]+at]	[su:tat]		[su:ˈðat]	suits

In (64) above, as demonstrated through stress placement, there is a shift in stress from the first syllable in the base form to the second syllable in the plural form. Therefore, the suffix -**at** is a non-neutral affix in so far it causes a shift in the position of the primary stress. This shows that the morphological process of affixation has played a role in the phonological form of the noun. The rule may be formalized as indicated in (64).

64.   /t/ → [ð]/ [+syll] ___ [+syll]

The following examples show that the voiced velar stop /g/ in a word-medial position becomes the voiceless fricative sound [ɣ] as illustrated in (67) below:

65.   **[Noun base]**   **[[Noun]+sfx]**   **LR**   **>**   **PR**   **Gloss**

[ˈʕag]	[[ˈʕag]+ag]	[ʕagag]	[ʕaˈɣag]	feet
[ˈʃaːg]	[[ˈʃaːg]+ag]	[ʃaːgag]	[ʃaːˈɣag]	tyres
[ˈbag]	[[ˈbag]+ag]	[bagag]	[baˈɣag]	chests
[ˈħog]	[[ˈħog]+ag]	[ħogag]	[ħɔˈɣag]	data
[ˈlug]	[[ˈlug]+ag]	[lugag]	[luˈɣag]	legs

The data in (65) above displays the fact that the suffix -**ag** is non-neutral affix. This is shown by the fact that upon its addition to the noun base, it causes a shift in the position of stress. Stress is on the first syllable in the noun base but moves to the final syllable in the inflected noun. In the above data, the phoneme /g/ is realised as [ɣ] whenever it occurs intervocalically. Therefore, the two sound /g/ and [ɣ] are in complementary distribution because the phoneme /g/ occurs in word-initial and word-final positions while the sound [ɣ] usually occurs in between two vowels. We may formalize the rule as follows:

   66. /g/ → [ɣ] / [+syll] ___ [+syll]

4.2.2. Consonant Substitution

Morphophonemic rules can be explained as morphophonological alternation in the language as a result of morphological operations and they are not phonotactically motivated rules (Linell 1979:143). The words 'Serene' /səˈriːn/ and 'Serenity' /səˈrenəti/ are examples of morphophonemic alternations because of the vowel /i/ which becomes /e/ ater the process of affixation. The application of morphophonemic rules can be well comprehended by observing such words 'electric /ɪˈlektrɪ**k**/ and electricity' /ɪˌlekˈtrɪ**s**əti/. The sound /k/ of electric changes into /s/ in the word electricity. Thus, the phoneme /k/ alternates with /s/ in that positions.

There are Benadiri nouns where the alveolar nasal in the word-medial position is substituted with the bilalial nasal. This seems to be a morphophonemic process rather than a direct phonological process. The voiced alvealar nasal /n/ is realised in singluar contexts while /m/ is realised in plural contexts in the set of nouns given in this section. The reason for the different realisation can not be explained in phonological terms like the process described in 4.21 above. The fact that /n/ and /m/ are phonemes could be illustrated by the existance of minal pair given in (67).

67.	Singular	Plural	Gloss
	/ħa:qin/	/ħa:qimɔ/	brooms
	/qaʃin/	/qaʃimɔ/	garbages
	/ða:n/	/ða:mɔ/	jaws

In this set of examples given in (68), the singular forms and their corresponding plural forms are related word forms, therefore the concept of the morphophoneme would be useful in explaining this relationship. This is a morphophonemic process, therefore, the morphophonemic representing /n/ and /m/ woud either be {N} or {M}. It should be noted that that in this process the nasal sounds is followed by a mid-back vowel /ɔ/ as illustrated in (69) below:

69.	[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
	[ˈla:n]	[[ˈla:n]+ɔ]	[la:nɔ]		[la:ˈmɔ]	branches
	[ˈðe:n]	[[ˈðe:n]+ɔ]	[ðe:nɔ]		[ðe:ˈmɔ]	Loans
	[ˈtin]	[[ˈtin]+ɔ]	[tinɔ]		[tiˈmɔ]	hair

The examples in (69) above have one syllable structure. The phoneme /n/ is replaced by /m/ when the mid-back vowel /ɔ/ is added in the plural formation.

The following words have three syllables. The phoneme /n/ is als substituted with a bilabial nasal /m/ when it is followed by a mid-back vowel /ɔ/ as illustrated in (70) below:

70.	[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
	[ˈukun]	[[ˈukun]+ɔ]	[ukunɔ]		[ʔʊkuˈmɔ]	eggs
	[ˈsaħan]	[[ˈsaħan]+ɔ]	[saħanɔ]		[saħaˈmɔ]	plates
	[ˈʤawa:n]	[[ˈʤawa:n]+ɔ]	[ʤawa:nɔ]		[ʤawa:ˈmɔ]	Sacks
	[ˈqalɪn]	[[ˈqalin]+ɔ]	[qalinɔ]		[qaliˈmɔ]	Pens
	[ˈqalɪ:n]	[[ˈqaliin]+ɔ]	[qaliinɔ]		[qalɪ:ˈmɔ]	surgeries

In (70) above, there is primary stress shift. We have demonstrated that the suffix -ɔ is a non-neutral affix in so far it causes a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the inflected noun it is on last syllable.

The study shows that the morphological process involves attaching the suffix –**an** to the noun base to form plural as illustrated in (71) below:

71. **[Noun base]** **[[Noun]+sfx]** **LR** **>** **PR** **Gloss**

[ˈsuːn] [[ˈsuːn]+an] [suːnan] [suːˈman] belts

[ˈtuːn] [[ˈtuːn]+an] [tuːnan] [tuːˈman] garlics

[ˈhaːn] [[ˈhaːn]+an] [haːnan] [haːˈman] containers

[ˈliːn] [[ˈlɪː]+an] [lɪːnan] [lɪːˈman] limes

[ˈtiːn] [[ˈtɪːn]+an] [tɪːnan] [tɪːˈman] figs

The examples in (71) above show that there is primary stress shift. We have demonstrated that the suffix -**an** is a non-neutral affix in so far it causes a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the inflected noun it is on last syllable. The phoneme /n/ still replaced by /m/ even when a different suffix is added. The above data shows that a vowel and a consonant are added at the end of the word to obtain the plural form. There is also a shift in the position of stress from /ˈu/ in /ˈ**suːn**/ to ´**an** in /**suːˈman**/.

4.2.3 Consonant Insertion

Insertion is one of the processes of phonology which includes the addition of a segment or segments in a word mainly to break clusters. There are two kinds of insertion which are prothesis and Epenthesis. Prothesis is a process that shows the insertion of segments in word initial position while epenthesis is a process that indicates the insertion of a segment in any other position in the word.

In Benadiri nouns, the glide /j/ is inserted at the morpheme boundary. In other words, the glide /j/ is inserted between the noun base and the plural marker -ɔ to prevent the sequence of two vowels in the plural formation as examplified in (72) below:

72. **[Noun base]** **[[Noun]+sfx]** **LR** **>** **PR** **Gloss**

[ˈɡuði] [[ˈɡuði]+ɔ] [ɡuðiɔ] [ɡuðɪˈjɔ] committees

[ˈminði] [[ˈminði]+ɔ] [minðiɔ] [minðiˈjɔ] knives

[ˈʕidʒi] [[ˈʕidʒi]+ɔ] [ʕidʒiɔ] [ʕidʒiˈjɔ] nails

The above data in (72), each noun has three syllables. the glide /j/ is inserted between the vowels. So this insertion is epenthesis. It should be noted that there is no variation of the phoneme /ð/ since it is already in an intervocalic position in both singlural and plural forms.

In the process illustrated in (73), the words have long vowels. The glide /j/ is inserted between the two vowels at word boundaries so as to separate the final vowel in the noun base from the plural marker /-ɔ/. The glide inserted shares a place of articulation with the final vowel of the noun base. Consider example (73) below:

73.	[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
	[ˈðɔ:li]	[[ˈðɔ:li]+ɔ]	[ðɔ:liɔ]		[ðɔ:lɪˈjɔ]	mice
	[ˈga:ri]	[[ˈga:ri]+ɔ]	[ga:riɔ]		[ga:rɪˈjɔ]	cars
	[ˈtɔ:ri]	[[ˈtɔ:ri]+ɔ]	[tɔ:riɔ]		[tɔ:rɪˈjɔ]	daggers

We have demonstrated that the suffix -ɔ is considered a non-neutral affix in so far as it causes a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the inflected noun it is on last syllable. The general pattern of the syllable structure in the Benadiri dialect is a CVCV structure. If the glide /j/ is not inserted, the syllable structure would be CVCVV in the plural formation of the words in (73). The insertion of the glide between the vowels maintains the required syllable structure.

4.2.4 Consonant Elision

Elision is a process of omitting a sound at word boundary to make the word easier to pronounce. The inflection -ʃa is the definite noun in Benadiri dialect. Saeed (1987:24) noted that the phoneme /l/ fuses into /ʃ/. However the process is elision as illustrated in (74) below:

74.	Noun base]	[[Noun]+ sfx]	LR	>	PR	Gloss
	[ˈbil]	[[ˈbil]+ʃa]	[bilʃa]		[ˈbiˈʃa]	the month
	[ˈɪl]	[[ˈɪl]+ʃa]	[ɪlʃa]		[ɪˈʃa]	the eye
	[ˈul]	[[ˈul]+ʃa]	[ulʃa]		[uˈʃa]	the cane
	[ˈðul]	[[ˈðul]+ʃa]	[ðulʃa]		[ðuˈʃa]	the back

The suffix -ʃa is a non-neutral affix because it leads to a shift in the position of the primary stress. Stress in the noun base is on the first syllable while in the inflected noun it is on last syllable.

4.3. Vowel Processes in Noun Plural Formation

The vowel processes discussed in this section are vowel lowering and vowel deletion. The two most common processes involving vowels in Benadiri dialect are insertion and deletion. During the collection of data, vowel deletion and vowel lowering were identified.

4.3.1. Vowel Deletion

Hyman (1975) observes that deletion is a phonological process which involves the loss segments. Vowels may be deleted in the plural forms of some words. Suffixation of the plural formation morpheme may result in the formation of a trisyllabic structure such as (C1) V1 C2 **V2** C3 V3. For instance, the plural form of "**misig**" is /**misiɣ-ɔ**/ which is trisyllabic. The category discussed in this section does not end up with a trisyllabic structure in the plural form. If the second vowel is short, it gets deleted so that the structure is shortened to a disyllabic word as illustrated in (75) below:

75.	[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
	[ˈḍarap]	[[ˈḍarap]+ɔ]	[ḍarapɔ]		[ḍarˈβɔ]	cloths
	[ˈgalap]	[[ˈgalap]+ɔ]	[galapɔ]		[galˈβɔ]	afternoons
	[ˈqɔdaħ]	[[ˈqɔdaħ]+ɔ]	[qɔðaħɔ]		[qɔðˈħɔ]	thorns
	[ˈgaʕan]	[[ˈgaʕan]+ɔ]	[gaʕanɔ]		[gaʕˈmɔ]	Hands
	[ˈḍagaħ]	[[ˈḍagaħ]+ɔ]	[ḍagaħɔ]		[ḍagˈħɔ]	stones
	[ˈsubaħ]	[[ˈsubaħ]+ɔ]	[subaħɔ]		[suβˈħɔ]	mornings
	[ˈħaraf]	[[ˈħaraf]+ɔ]	[ħarafɔ]		[ħarˈfɔ]	letters

The examples in (75) show that the second vowel /a/ gets deleted when forming plurals. The process of plural formation results in the formation of disyllabic words in their phonetic form whereas they are trisyllabic in the underlying form. This phonological process may be illustrated using the following rule.

> 75. /a/ → [Ø] / C ___C

In the examples in (76) below, the vowel /i/ is deleted and this results in a two syllable word. Consider these examples:

76.

[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
[ˈhilip]	[[ˈhilip]+ɔ]	[hilipɔ]		[hilˈβɔ]	meat
[ˈʤilip]	[[ˈʤilip]+ɔ]	[ʤilipɔ]		[ʤilˈβɔ]	knees
[ˈmiðig]	[[ˈmiðig]+ɔ]	[miðigɔ]		[miðˈɣɔ]	right hands
[ˈmisig]	[[ˈmisig]+ɔ]	[misigɔ]		[misˈɣɔ]	hips
[ˈɪlik]	[[ˈɪlik]+ɔ]	[ɪlikɔ]		[ɪlˈkɔ]	teeth

In (76) above, the rule used in the above examples is not applicable to trisyllabic form with the structure C1V1C2C3V2C4V3 or C1 V1C2V2C3C4V3 due to the fact that the result of deleting the second vowel (V2) would create a consonant cluster consisting of more than three consonants. Benadiri dialect of Somali does not allow a sequence of three consonants in the syllable structure. However, in order to form its plural, the second vowel is deleted and a disyllabic word is created. The phonological process may be captured in the folowing rule:

77.   /i/ → [Ø] / C ___C

4.3.2. **Vowel Lowering**

In the articulation of Benadiri certain nouns, The mid-front vowel /e/ gets lowered to the low vowel /a/ before adding the suffix-**jaal** to the noun base when forming plurals as illustrated in (78) below:

78.

[Noun base]	[[Noun]+sfx]	LR	>	PR	Gloss
[ˈfure]	[[ˈfure]+ja:l]	[fureja:l]		[furaˈja:l]	keys
[ˈðile]	[[ˈðile]+ja:l]	[ðileja:l]		[ðilaˈja:l]	killers
[ˈqare]	[[ˈqare]+ja:l]	[qareja:l]		[qaraˈja:l]	watermelons
[ˈmire]	[[ˈmire]+ja:l]	[mireja:l]		[miraˈja:l]	fruits

From the above data, we explain the affix –jaal is a non-neural affix due to fact that its addition to the noun base causes a shift of stress in the inflected noun. The stress moves from the first

syllable to the final syllable in the inflected noun. The data also shows that the mid-front vowel /e/ changes into low vowel /a/ at a word boundary. This rule may be formalised as follows:

79.   /e/   /a/

$$\begin{bmatrix} +\text{Syll} \\ -\text{high} \\ -\text{low} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{syll} \\ +\text{low} \end{bmatrix} \Big/ \underline{\quad\quad} \; j \; \begin{bmatrix} \text{Glide} \end{bmatrix}$$
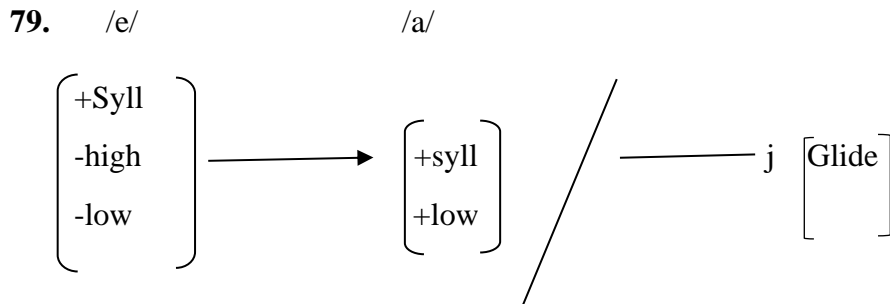
In Benadiri nouns, there are processes where some consonants do not make any changes in the formation of plural but a stress shift can be seen. Consider these examples:

80.	**[Noun base]**	**[[Noun]+sfx]**	**LR**	**>**	**PR**	**Gloss**
	[´mir]	[´mir]+ɔ]	[mirɔ]		[mɪ´rɔ]	seeds
	[´fa:s]	[fa:s]+as]	[fa:sas]		[faas´as]	axes
	[´be:l]	[´be:l]+ɔ]	[be:lɔ]		[be:´lɔ]	clans
	[´saʕ]	[´saʕ]+ɔ]	[saʕɔ]		[sa´ʕɔ]	cows
	[´se:f]	[´se:f]+ɔ]	[se:fɔ]		[se:´fɔ]	swords

The data in (80) shows only that stress shifts from first syllable to final syllable. There is no other phonological process seen in the examples.

By observing all the representation of nouns in this chapter, we can see that it was applied Bracket Erasure Convention. This theory is shown during the processes of forming words. It is introduced at each morphological level. Upon the process of plural formation, the researcher used inner and outer brackets showing the noun base and suffix to form plural. The barcket gets deleted at lexical representation so that the word is available for further phonological processes at phonetic representation. The neutral and non-neutral affixes within the framework of Lexical phonology theory. As indicated in (80), it shows that stress shifts from first syllable to final syllable.

4.4 **Conclusion**

This chapter discussed phonological process that involve consonants and vowels in the plural formation in Benadiri dialect. All the affixes used were suffixes and there were no prefixes

and infixes in this part. Therefore, level 2 of LP theory were used in the analysis. The phonological processes identified were a consonant weakening, consonant insertion, consonant elision through the addition of the suffixes -ɔ, -ag and –an to the noun base. The study also discussed vowel processes such as vowel deletion and vowel lowering. It was noted there was also morphophonemic processes whereby the the alveolar nasal /n/ is realised in singular contexts while /m/ is realised in plural contexts. There is a shift of primary stress in the position of the words upon the addition of certain affixes.

CHAPTER FIVE

TONAL CHANGES IN BENADIRI NOUNS

5.1 Introduction

This chapter focuses on the structure and function of tone in Benadiri dialect. Tone serves many functions in language. Tone distinguishes the lexical items. In Benadiri nouns, there are minimal pairs in which tone is minimally contrastive thereby creating a scenario where the consonants and vowels in these pairs are similar, but the meanings of the words vary on the basis of tone. In Benadiri, tone is used to distinguish lexical word meaning. It is also used in plural formation and gender specifications. This chapter discusses two types of tones, namely the HL and LH tone in words.

5.2. Lexical Function of Tone

In Benadiri dialect, tone is used to differentaite the meaning of words. Consider the examples below:

	Nouns	**Gloss**
81.	baꞌrı̀	west
	H L	
	ba`rı́	backside
	L H	
82.	be`rı́	Tomorrow
	LH	
	bérı̀	one day
	H L	

The words in (81 and 82) differ in tone. One word has a HL tone pattern while the other one has a LH tone pattern. Therefore, tone has a lexical function.

Tone is defined as an accent or inflection that expresses mood or emotion. In addition, the pitch of a word is often used to tell the meaning differences (Malou,1988:57). In a study of Somali

phonetics and tone, Armstrong (1934) identified four levels of tone, namely high, mid, low and falling.

Auto-segmental phonology is used in the analysis of tonal changes. It proposes the use of two or more tiers of phonological segments (Goldsmith, 1990). He continued to elaborate that in each tier there should be a string of segments that vary with regard to specific features in them.

Just like many Cushitic languages, tone plays a significant role in the formation of plurals of nouns. It is crucial in marking the number which is singular and plural as well as gender specifications. Some of symbols and diacritics used to mark tone are illustrated in (83):

83.   [´]   H   high tone

                [`]   L   low tone

                [-]   M   mid tone

                [^]   HL   falling tone

5.3. **Tone in Plural Formation**

The singular nouns and their plural counterparts are classified by the tone in some languages including Benadiri dialect. Katamba (1989:195) noted that such kind of tonal alternations always have to be explained or analysed as tonal changes.

Even though Amstrong identified four tones, this study is limited to two tones which are high and low. In Benadiri, tone is used to mark plural forms. The singular nouns have a HL tone while plural nouns are marked by a LH tone as seen in the example (84).

84.	**Singular**	**plural**	**Gloss**
	/dɪ́βɪ̀/	/dɪ̀βɪ́/	bulls
	/áɾðà̀j/	/à̀rðáj/	students
	/máðàħ/	/màðáħ/	leaders
	/túù̀g/	/tùúg/	thieves
	/búù̀g/	/bùúg/	books
	/tɪ́ɪ̀r/	/tɪ̀ɪ́r/	pillars
	/málàɪ̀/	/màláɪ́/	fishes

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/ʕaˊruˋuˋr/ /ʕaˋruˊuˊr/ children

Goldsmith (1990:8) proposed that tones are represented on a separate tier. On this tonal tier, each segment has to be specified for tone. This study uses the principles of association lines to mark the distinction between singular-plural forms. The features are illustrated on different tiers as shown in (85) below:

85. **i)** Segmental Tier   dɪβɪ   (singular)   bull
                                  | |
      Tonal Tier   H L

ii) Segmental Tier   dɪβɪ   (plural)   bulls
                                  | |
      Tonal Tier   L H

Tone and tone pairing units are marked in one to one fashion from left to right using association lines. The tone from high to low tone can be illustrated as in (86) below:

86. **i)** Segmental Tier   arðaj   (singular)   a student
                                  | |
      Tonal Tier   H L

ii) Segmental Tier   arðaj   (plural)   students
                                  | |
      Tonal Tier   L H

87. i) Segmental Tier   maðaħ   (singular)   a leader
                                  | |
      Tonal Tier   H L

ii) Segmental Tier   maðaħ   (Plural)   leaders
                                  | |
      Tonal Tier   L H

88. **i)** Segmental Tier   tuuɡ   (singular)   a thief
                                  | |
      Tonal Tier   HL

ii) Segmental Tier   tuuɡ   (plural)   thieves
                                  | |
      Tonal Tier   LH

89. **i)** Segmental Tier   buug   (singular)   a book

                                  | |

        Tonal Tier   HL

        ii) Segmental Tier   buug   (plural)   books

                                    | |

        Tonal Tier   LH

90. **i)** Segmental Tier   t ɪ ɪ r   (singular)   a pillar

                                    | |

        Tonal Tier   HL

        ii) Segmental Tier   t ɪ ɪ r   (plural)   pillars

                                    | |

        Tonal Tier   LH

The following examples have three vowels and tones. Three vowels and three tones are involved in the formation of plurals of nouns. The data shows that two various tones are generated within a couple of syllables of singular form. Consider these examples:

91. **i)** Segmental Tier   mala ɪ   (singular)   a fish

                                    | V

        Tonal Tier   H L

        ii) Segmental Tier   mala ɪ   (plural)   fishes

                                    | V

        Tonal Tier   L H

92. **i)** Segmental Tier   ʕaruur   (singular)   a child

                                    N

        Tonal Tier   H̵   L

        Segmental Tier   ʕaru ur   (plural)   children

                                    | V

        Tonal Tier   L   H

If one observes the representation of nouns, it can be seen that the vertical lines are the typical lines of association that map tones onto syllables.

The study also shows that some nouns with one-syllable form their plurals by using high and low tone as illustrated in (93) below:

        Singular   **plural**   **Gloss**

93.   /éɪ̀/   /èɪ́ /   dogs

/aˊùr /   /aˋuˊr /   camels

By using association lines, tone within one syllable can be presented as follows:

94. **i)**   Segmental Tier   e ɪ   (singularg)   dog
                                         | |
         Tonal Tier   H L

    ii)   Segmental Tier   e ɪ   (plural)   dogs
                                         | |
         Tonal Tier   L H

95. **i)**   Segmental Tier   a u r   (singular)   camel
                                         | |
         Tonal Tier   H L

     ii)   Segmental Tier   a ur   (plural)   camels
                                         | |
         Tonal Tier   L H

The sound /au/ in /owr/ which is explained above is a diphthong which has a high and low tone, also known as the falling tone.

5.4 Tone as a Marker of Gender

Amstrong (1934) identified tones which mark gender specifications in Somali. Both masculine-feminine nouns show two various pitch properties. Benadiri dialect also shows that the masculine nouns have a High-tone on their first syllables while the feminine nouns have a high-tone on their final vowels as illustrated in (96) below:

96. **Masculine**   **feminine**   **Gloss**

   /ʃɪˊmβɪˋr/   /ʃɪˋmβɪˊr/   bird

   /ʃaˊbeˋeˊl/   /ʃaˋβeˊeˊl /   tiger

    /waˊħaˋr /   /waˋħaˊr/   goat

   /lɪˊβaˋaˊħ/   /lɪˋβaˊaˊħ/   lion

   /gɔˊraˋɪˋ/   /gɔˋraˊɪˊ/   ostrich

   /geˊeˊsɪˋ/   /geˋeˋsɪˊ/   hero

    /bɔˊqɔˋr/   /bɔˋqɔˊr/   king

   /ʕuˊraˋð/   /ʕuˋraˊð/   first born child

/ðɔ́qɔ̀n/   /ðɔ̀qɔ́n   fool

/ʃíniˋ/   /ʃìní/   bee

By using vertical lines of association, the above examples can be illustrated as follows:

97.   **i)**   Segmental Tier   ʃimβir   (singular)   a female bird

              Tonal Tier   L   H

    ii)   Segmental Tier   ʃimβir   (singular)   a male bird

              Tonal Tier   H   L

98.   **ii**)   Segmental Tier   ʃaβe el   (singular)   a female tiger

              Tonal Tier   L   H

    ii)   Segmental Tier   ʃaβe el   (singular)   a male tiger

              Tonal Tier   H   L

99.   **i)**   Segmental Tier   waħar   (singular)   a young she-goat

              Tonal Tier   L H

    ii)   Segmental Tier   waħar   (singular)   a young he-goat

              Tonal Tier   H   L

100.   **i)**   Segmental Tier   liba aħ   (singular)   a female lion

              Tonal Tier   L   H

    ii)   Segmental Tier   liba aħ   (singular)   a male lion

              Tonal Tier   H   L

101.   **i)**   Segmental Tier   gor a ɪ   (singular)   a female ostrich

              Tonal Tier   L   H

    ii)   Segmental Tier   gora ɪ   (singular)   a male ostrich

              Tonal Tier   H   L

102. **i)** Segmental Tier   ɡe esɪ   (singular)   a hero

           Tonal Tier   L H

           ii) Segmental Tier   ɡe esɪ   (singular)   a heroine

           Tonal Tier   H L

103. **i)** Segmental Tier   bɔqɔr   (singular)   a king

           Tonal Tier   L H

           ii) Segmental Tier   bɔqɔr   (singular)   a queen

           Tonal Tier   H L

104. **i)** Segmental Tier   ʕurað   (singular)   a first born female-child

           Tonal Tier   LH

           ii) Segmental Tier   ʕurað   (singular)   a first born male-child

           Tonal Tier   H L

105. **i)** Segmental Tier   ðɔqɔn   (singularg)   a fool female

           Tonal Tier   L H

           ii) Segmental Tier   ðɔqɔn   (singular)   a fool male

           Tonal Tier   H L

106. **i)** Segmental Tier   ʃɪ n ɪ   (singular)   a female bee

           Tonal Tier   L H

           ii) Segmental Tier   ʃɪ n ɪ   (singular)   a male bee

           Tonal Tier   H L

5.5. Conclusion

The tone in Benaadiri dialect is quite significant as a lexical function, the formation of plurals and gender specifications. The data showed that HL tone forms singular nouns while the plural is formed with LH tone. In gender specification, it showed that feminine nouns have a LH tone

while masculine nouns have a HL tone. During the data collection, the reseacher found that nouns with these tonal distinctions have one or two syllables.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 **Summary of the findings**

This section highlights the outcome of the research in relation to the statement of the problem and the objectives that it sought to achieve. The study adopted an eclectic approach where two theories, namely, lexical phonology and Autosegmental phonology theory were used to explain various morphophonological processes in the Benadiri dialect of Somali language.

The first objective of the study was to describe the inflectional processes that are used in making plural forms in the Benadiri dialect. The researcher found out that one of the inflectional processes was the formation of the definite noun through the addition of the suffixes –ka, -ga, -a, -ta, -ða and -ʃa to the indefinite noun base. The other inflectional process was that of number (singular and plural). The plural of nouns were formed by affixig the suffixes -ɔ, -ɔ:jin, -as, and –jaal, to the noun base. These two were analysed under Level 2 morphological processes.

The second objective was to identify the derivational processes that occur in nouns in the Benadiri dialect. In Level 1 morphological processes in Benadiri include derivation of nouns from verbs, adjectives and nouns from nouns. There are derivations of nouns from verbs, adjectives and nouns. Nouns wer derived from verbs through suffixation –e,-je,-aa, -jaal or –itaan. This was followed by a change in the position of the primary stress. Nouns were derived from adjectives by adding the suffix –nimo to the adjectives. The suffixes –toojo and –le were added to the noun base of noun to form other nouns. There is a shift of primary stress in the position of the words upon the addition of certain affixes.

The third objective was to describe the morphophonological processes influencing the consonants and vowels when forming plurals. The study has established that the process of plural formation in Benadiri is accompanied by lexical phonological processes such as a consonant weakening, consonant substitution, consonant insertion, consonant elision, vowel deletion, vowel lwoering and vowel insertion.

The final objective was to explain the tonal changes that affect the plural formation and gender specifications of nouns in the Benadiri dialect. It was noted that the tonal alternations occur in the formation of plurals in Benadiri dialect. We came to the conclusion that tone plays a significant role in the formation of plurals of nouns. The tone in Benadiri is quite significant

in the distinguishing the meaning of lexical iterms, the plural formation and gender specifications. The study showed that HL tone forms singular nouns while the plural is formed with LH tone. In gender specifications, it showed that feminine nouns have a LH tone while masculine nouns have a HL tone. It was noted that nouns with these distinctions one or two syllables.

6.2 Conclusion

The analysis dislayed inflectional morphemes, derivational process, consonant processes, vowel deletion, vowel lowering, and tonal changes. It has been observed that stress shifts from one syllable to another. The study showed that some plural nouns are made by merely alternating the tone.

6.3 Recommendations

This research focuses on the morphophonological processes in the Benadiri nouns. Thus, the researcher recommends further research on morphophonological processes in other varieties of Somali dialects used in Somalia. It is noted that there is a need to set up the areas of such studies could explore the similarities and differences that exist among in the dialects of Somali.

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APPENDIX I: Benadiri Plural Nouns

Singular	PR	Plural	PR	Gloss
Subaħ	suβaħ	subħo	suβħɔ	Morning
Qodax	qodaħ	qodħo	qoðħo	Thorn
midig	miðig	midgo	miðgo	Right hand
hilib	hilip	hilbo	hilβɔ	Meat
dʒilib	dʒilib	dʒilbo	dʒilβɔ	Knee
gacan	gaʕan	gacmo	gaʕmɔ	Hand
dhagax	ḍagaħ	dhagxo	ḍagħɔ	Stone
garab	garap	garbo	garβɔ	Shoulder
galab	galap	galbo	galβɔ	Afternoon
misig	misig	misgo	misɣɔ	Hip
Dharab	ḍarap	dharbo	ḍarβɔ	Child's cloth
xarik	ħarik	xarko	ħarkɔ	Rope
xaraf	ħaraf	xarfo	ħarafɔ	Letter
beri	beri	berjo	berjɔ	Day
guri	guri	gurjo	gurijɔ	House
dhari	ḍari	dhariyo	ḍarijɔ	Pot
bari	bari	bariyo	barijɔ	Backside
dugsi	ðugsi	dugsiyo	ðugsijɔ	School
dooli	ðɔ:li	dooliyo	ðɔ:lijɔ	Mouse
kursi	kursi	kursiyo	kursijɔ	Chair

fundi	funði	fundiyo	funðijɔ	Mason
gudi	guði	gudiyo	guðijɔ	Committee
kirli	kirli	kirliyo	kirlijɔ	Kettle
mindi	minði	mindiyo	minðijɔ	Knive
geet	geet	geeto	ge:ðɔ	Tree
saliit	sali:t	saliito	Sali:ðɔ	Oil
cumaamat	ʕuma:mat	ʕumaamato	ʕuma:maðɔ	Turban
sumat	sumat	sumato	sumaðɔ	Mark
seet	Se:t	seedo	se:ðɔ	Artery
buut	Bu:t	buutat	bu:ðat	Boot
raat	raat	raatat	ra:ðat	Footstep
lug	lug	lugag	luɣag	Leg
caag	ʕaag	caagag	ʕa:ɣag	Plastic container
ʃa:g	ʃa:g	shaagag	ʃa:gag	Tyre
laan	La:n	laano	la:mɔ	Branch
deen	ðe:n	deeno	ðe:mɔ	Loan
ilik	ɪlɪk	ilko	ɪlkɔ	tooth
Jawaan	dʒawa:n	Jawaano	dʒawa:mɔ	Sock
qalin	qalin	qalino	qalimɔ	Pen
ukun	ukun	ukuno	ukumɔ	Egg
tin	tin	tino	timɔ	Hair
saxan	saħan	saxano	saħamɔ	Plate
wadan	waðan	waðano	waðamɔ	Country

qaliin	qali:n	qaliino	qali: mɔ	Surgery
beel	be:l	beelo	be:lɔ	Clan
bir	bir	biro	birɔ	metal
sin	sin	sinan	siman	Hip
nin	nin	ninan	niman	Man
duun	ḍu:n	ḍuunan	ḍu:man	Pipe
suun	Su:n	suunan	su:man	Belt
tuun	tu:n	tuunan	tu:man	Garlic
haan	ha:n	haanan	ha:man	Container
liin	li:n	liinan	li:man	Lime
naas	na:s	naasas	na:sas	Breast
igaar	íga`a`r	igaar	ì`gaár	Boy
orgi	órgì	orgi	o`rgí	Goat
owr	aúr	owr	a`úr	Camel
ey	eì	ey	e`í	Pillar
caruur	ʕaruùr	caruur	ʕa`rúúr	Child
buug	búùg	buug	bu`úg	Book
Malaay	málaì	malaay	ma`laí	Fish
dibi	díβì	dibi	dì`βí	Bull
arday	árðaj	arday	a`rðaj	Student
madax	mádaħ	madax	ma`daħ	Leader

APPENDIX II: Benadiri Tone In Gender Specification

Masculine	PR	Feminine	PR	Gloss
shimbir	ʃími̗ri̗r	shimbir	ʃìmi̗r	Bird
shabeel	shabe̗èl	shabeel	shabe̗él	Bird
waxar	waħàr	waxar	waħár	Small goat
libaax	líβàáħ	libaax	lìβááħ	Lion
gorey	gɔ́ràì	gorey	gɔ̀ráí	Ostrich
geesi	ge̗e̗sì	geesi	gèèsí	Hero
boqor	bɔ́qɔ̀r	boqor	bɔ̀qɔ́r	First born child
shini	ʃíni̗	shini	ʃìní	Bee
doqon	ðɔ́qɔ̀n	doqon	ðɔ̀qɔ́n	A fool

APPENDIX III: Benadiri Noun Derivation

VERB	Gloss	PR	Derived nouns	PR	Gloss
bar	teach	bar	bare	bare	Teacher
jar	cut	dʒar	Jare	dʒare	Cutter
mar	walk	mar	mare	mare	Walker
qot	write	qot	qode	qoðe	Digger
fur	open	fur	fure	fure	Key
tali	command	tali	taliye	talije	Commander
kaxee	drive	kaħee	kaxeeye	kaħeeje	Driver
kari	cook	kari	kariye	karije	Cook

cun	eat	ʕun	cunaa	ʕunaa	Eater
cab	Drink	ʕab	cabaa	ʕaβaa	Drunkard
gur	Collect	gur	guraa	guraa	Collector
dur	Enject	ður	duraal	ðura:l	Enjecting
qor	Write	qɔr	qoraal	qɔra:l	Writing
qir	admit	qir	qiraal	qira:l	Confessing
socod	Immigrate	sɔʕɔt	socdaal	sɔʕɔða:l	Immigrating
xir	Arrest	ħir	xiritaan	ħirita:n	Arresting
rab	want	rab	rabitaan	raβita:n	Wanting
dil	kill	ðil	dilitaan	ðilita:n	Killing
Adjective	**Gloss**	**PR**	**Derived nouns**	**PR**	**Gloss**
faqiir	poor	faqi:r	faqiirnimo	faqiirnimɔ	Poorness
daciif	week	ðaʕi:f	ðaʕi:fnimo	ðaʕi:fnimɔ	Weakness
xariif	clever	ħari:f	xariifnimo	ħari:fnimɔ	Cleverness