AN ANALYSIS OF THE SYLLABLE STRUCTURE OF STANDARD KISWAHILI LOANWORDS FROM MODERN STANDARD ARABIC

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DECLARATION

This thesis is my original work and has not been submitted for the purpose of award of a degree in any other university.

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DEDICATION

I dedicate this work to:

my dear late grandmother

HANAH MARTHA CHAGA (*MWASARE*)

my loving parents

BONIFACE MBEDE MWALIWA and JOSEPHINE CHAO BONIFACE

and

my beloved husband

JAMES AKANGA

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ABSTRACT

This thesis is an analysis of the syllable structure of Standard Kiswahili loanwords borrowed from Modern Standard Arabic and their consequent restructuring processes. This analysis is based on the premise that every language has specific constraints with regard to syllable structure and segmental organization in words. Languages are bound to borrow through contact and, as such, phonological processes are triggered in the course

of adapting and/or adopting the loanwords in the recipient language. Since Standard Kiswahili and Modern Standard Arabic are from different language families, phonotactic constraints of the recipient language play a role in the restructuring of these loanwords. This thesis examines how the phonotactic constraints operate to realize the syllable structures and segmental organization of the words borrowed from Modern Standard Arabic to Standard Kiswahili. This being a syllable oriented research, the Generative CV-Phonology theory is applied providing a platform to display the various syllable structures found in Modern Standard Arabic and Standard Kiswahili. Moreover, the model enables us to note the syllable changes taking place from the Modern Standard Arabic sourcewords to Standard Kiswahili loanwords. In addition, the theory provides tools to examine the segments found in the loanwords and sourcewords, and how these segments are associated to the C (consonant) and V (vowel) slots of their respective syllables. The findings in this thesis show that the phonological processes involved in the adaptation and adoption of loanwords from Modern Standard Arabic to Standard Kiswahili are motivated by preferred syllable structure rules, phonemic factors, assimilation rules and morphological factors. With regard to consonant clusters, the phonological processes are motivated by Positive Syllable Structure Conditions and Negative Syllable Structure Conditions of the recipient language, Standard Kiswahili. We also observe that a bulk of the loanwords undergo adaptation processes in order to conform to the permissible Standard Kiswahili syllable structures. However, there are a few loanwords from Modern Standard Arabic that get adopted into Standard Kiswahili with their original structures as motivated by Kiswahili syllable constraints, not Modern Standard Arabic syllable constraints. That is, some of the loanwords are accommodated in Standard Kiswahili with Modern Standard Arabic syllable structures. Finally, it is observed that Standard Kiswahili phonology has been generally affected by loanwords from Modern Standard Arabic through the introduction of new segments, syllable structures, heavy syllable weights and new consonant clusters.

SUPERVISORS:

1. PROFESSOR KITHAKA WA MBERIA
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LIST OF SYMBOLS

SYMBOL	**DESCRIPTION**
/a/	short low vowel
/aː/	long low vowel

/ɛ/	lax mid front short vowel
/ɔ /	lax mid back short vowel
/i /	front high short vowel
/iː /	front high long vowel
/u/	back high short vowel
/uː /	back high long vowel
/aw/	bilabial diphthong
/aj/	palatal diphthong
/p/	voiceless bilabial stop
/b /	voiced bilabial stop
/m/	bilabial nasal stop
/w/	bilabial glide
/f/	voiceless labio-dental fricative
/v/	voiced labio-dental fricative
/θ /	voiceless inter-dental fricative
/ð/	voiced inter-dental fricative
/ðˤ/	voiced pharyngealised inter-dental fricative
/t/	voiceless alveolar stop
/tˤ/	voiceless pharyngealised alveolar stop
/d /	voiced alveolar stop
/dˤ/	voiced pharyngealised alveolar stop
/s /	voiceless alveolar fricative
/sˤ/	voiceless pharyngealised alveolar fricative
/z/	voiced alveolar fricative
/n/	alveolar nasal stop
/r/	voiced alveolar trill
/l /	voiced alveolar lateral
/ʃ /	voiceless post-alveolar fricative
/tʃ/	voiceless post-alveolar affricate
/dʒ/	voiced palatal fricative
/ɟ /	voiced palatal stop

/ɲ /	palatal nasal stop
/j /	palatal glide
/k /	voiceless velar stop
/g/	voiced velar stop
/ŋ/	velar nasal stop
/x /	voiceless velar fricative
/ɣ/	voiced velar fricative
/q/	voiceless uvular stop
/ħ /	voiceless pharyngeal fricative
/ʕ /	voiced pharyngeal fricative
/h /	voiceless glottal fricative
/ʔ/	voiced glottal stop
σ	syllable node
>	change from MSA to Kiswahili
$	syllable boundary

LIST OF ABBREVIATIONS

C	Consonant
V	Vowel
LW	Loanword

SW	Sourceword
SL	Source language
RL	Recipient language
MSA	Modern Standard Arabic
NGP	Natural Generative Phonology
PSSC	Positive Syllable Structure Condition
NSSC	Negative Syllable Structure Condition
DF	Distinctive Features
IPA	International Phonetic Association
ATR	Advanced Tongue Root
PSSR	Preferred Syllable Structure Rules

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CHAPTER ONE

INTRODUCTION

1.1 Background Information

This study is an analysis of how loanwords from Modern Standard Arabic (MSA) are adapted in Standard Kiswahili with focus on how the syllable structures of MSA words are modified in Standard Kiswahili. In this study, we analyse syllable structure, syllable weight, stress placement and consonant clusters within the syllables of Standard

Kiswahili words borrowed from MSA. In addition, we analyse phonological processes occurring on the segments of Standard Kiswahili loanwords that originate from MSA. The analysis of the loanwords is conducted using the framework of Generative CV-Phonology theory which was developed by Clements and Keyser (1983). The stated syllable-based theory is applied to conduct an empirical analysis of the syllable structure of loanwords borrowed from MSA in Standard Kiswahili.

Kiswahili is a Bantu language that is used by millions of people in the world. Kiswahili speakers can be categorized into two groups, namely, the native speakers, also known as the Waswahili who live on the East African coast[i]. The other group comprises the non-native Kiswahili speakers who are spread all over the globe. Kiswahili is spoken by people living in the East African coast as well as in the interior of Tanzania, Kenya, Uganda, Congo and Rwanda (Iribemwangi, 2010:6). In fact, according to Massamba et al (1999:2), Kiswahili is spoken by well over 60 million people within Africa in Tanzania, Kenya, Uganda, Democratic Republic of Congo, Rwanda, Burundi, Mozambique, Zambia and Malawi. Moreover, Kiswahili is spoken outside the African continent where it is taught in universities in countries such as the United States of America and China to mention a few. Besides, Kiswahili is used by national and international media broadcasters in East Africa and beyond, for example, Idhaa ya Taifa (KBC) in Kenya, Redio Tanzania in Tanzania, British Broadcasting Corporation (BBC), Voice of America (VoA) and Radio China International (CRI).

Kiswahili has a number of dialects in addition to the standard variety. According to Mazrui & Mazrui (1998), Kiswahili has diverse dialects that are geographically

distributed such as Unguja, Gunya, Shaka, Paza, Siu, Mvita, Kilindini, Jomvu, Barawa, Pemba, Tumbatu, Mtang'ata and Ngazija. The Waswahili speak the various Kiswahili dialects as their first language. One of these dialects, specifically Unguja, was picked to become the Kiswahili standard variety. According to Whiteley (1969:80), Standard Kiswahili was created on the basis of the Unguja dialect which is spoken in Zanzibar. Being a standard variety, Standard Kiswahili has gone through modernization and linguistic engineering at the lexicon level through Kiswahili academic and research institutions (Whiteley, 1969: 83-84), especially what was then known as the Institute of Swahili Research, later to be called Taasisi ya Uchunguzi wa Kiswahili (TUKI)[ii]. It is for this reason that Standard Kiswahili is not the same as Unguja dialect which continues to be spoken by the Waswahili in Zanzibar as their first language.

Standard Kiswahili is the most widespread variety having diverse functions. Unlike the other geographical dialects, it is used across the East African region (Massamba, 2002:260). That is, it is not limited to geographical boundaries as the other dialects do. As stated by Whiteley (1969:82), it is the standardization that led to the spread and development of Kiswahili. Standard Kiswahili is used in formal settings such as schools, colleges, universities, formal trade and official circles (Iribemwangi, 2010:3). Standard Kiswahili has also functioned as a lingua franca in trade, religion, education, civil administration, practical politics and collective bargaining throughout the East African region (Mazrui & Mazrui, 1998). Iribemwangi (2010:2) also states that Standard Kiswahili is viewed as a lingua franca by a number of scholars namely, Chiraghdin & Mnyampala (1977), Ngugi wa Thiong'o (1993), Mathews (1997), Habwe (1999), Chimerah (2000) and Okombo (2001). Even more important, according to the

Constitution of the Republic of Kenya (2010), Standard Kiswahili is an official and national language in Kenya. It is also the official and national language in Tanzania (Massamba et al, 1999:3).

Despite the widespread usage and development of Kiswahili, there is controversy surrounding Kiswahili origin. Linguists have different views concerning Kiswahili derivation. According to Massamba (2002:11-12), there are three suppositions surrounding the origin of Kiswahili and its speakers, the Waswahili. The first hypothesis holds that Kiswahili has an Arabic origin. This implies that Kiswahili is an Arabic dialect, and therefore, is foreign in East Africa. Massamba (2002) does not mention the proponents of this stance, but cites the works that tried to enlist Arabic words found in Kiswahili, inter alia Johnson (1939), Krumm (1940) and Hoftmann & Mhando (1963). Moreover, since Islam was brought to the East coast by the Arabs, the proponents of this theory are convinced that Kiswahili is an Arabic language (Massamba, 2002:12). There is no doubt about the large number of loanwords from Arabic that have taken dominance in Kiswahili vocabulary. It appears that supporters of this stand used loanwords from Arabic as a criterion for determining Kiswahili's origin. However, as argued by Bosha (1993:33), Massamba et al (1999:5) and Massamba (2002:17), the presence of borrowed words from Arabic does not qualify Kiswahili to be of Arabic descent. There is need to consider other linguistic factors pertaining to Kiswahili structure (if it coincides with Arabic structure) to be able to determine whether Kiswahili has Arabic origin or not. Second, Arabic is not the only language from which Kiswahili borrowed. There are many foreign languages that had contact with Kiswahili, for instance English. This, then, does not mean that Kiswahili has an English origin because of the loanwords. In our view, the

proponents of this theory do not consider the structural aspect in coming up with this position. Therefore, in our opinion, this hypothesis is not credible.

The second hypothesis holds the view that Kiswahili developed as a hybrid language (Massamba, 2002:19-24). The supporters of this position include Freeman-Grenville (1959), Gray (1962) and Sassoon (1980). According to Massamba (2002:19), there are two groups in this hypothesis. One group holds that Kiswahili was born out of intermarriages between Arab men and Bantu women. The proponents of this group include Mazrui & Shariff (1994), who believe that Kiswahili is a mixture of Arabic and Bantu words. The second group holds that Kiswahili began as a pidgin of Arabic and African languages. That is, Kiswahili started as an Arabic pidgin for communication purposes between the Arabs and the Africans living at the East African coast. This group claims that the pidgin contained more of Arabic than African vocabulary. This pidgin continued to grow until it developed into a creole. Later, the creole developed to be similar to other Bantu languages namely, Pokomo and Mijikenda in terms of structure and vocabulary. As a result, the Waswahili were a creole speaking generation born out of a mixture of Arabs and Africans. In this study, we observe that unlike the first hypothesis (that Kiswahili is an Arabic language), the proponents of this hypothesis acknowledge that Kiswahili has Bantu features that developed with the coming of Arabs in East Africa. Nevertheless, this supposition does not hold water. A language cannot develop as a result of intermarriage, for instance. There are intermarriages that take place, but they have not yielded new languages. Likewise, as Massamba (2002:28-31) argues, it is difficult for an Arabic pidgin to develop as a creole which has structures and vocabulary affiliated to Bantu.

The third hypothesis holds that Kiswahili is one of the Bantu languages spoken in East Africa. According to Bosha (1993:7) and Massamba (2002:92), Kiswahili has been in existence long before the arrival of the first Arabs in East Africa. Proponents of this position include Chiraghdin and Mnyampala (1977), and Ahmed Sheikh Nabhany (1978). Unlike the first two hypotheses, this view acknowledges that Kiswahili was not brought by Arab speakers, but is African by origin. Historical linguists, including Malcolm Guthrie (1948) have argued that Kiswahili is an African language of Bantu descent in form and origin, and its Arabic attributes are a result of linguistic borrowing (Bosha, 1993; Mazrui & Mazrui, 1998). According to Massamba (2002:35-37), researches done by linguists such as Carl Meinhof (1899; 1932), C. M. Doke (1935; 1945), Bleek (1962), Malcolm Guthrie (1967; 1970; 1971), Nurse & Spear (1985), Nurse & Hinnesbusche (1993) and Chiraghdin & Mnyampala (1977), indicate that Kiswahili is a Bantu language.

We observe two things that are common in the first two hypotheses discussed above: one is that the two hypotheses are of the view that Kiswahili was not in existence prior to the arrival of Arabs in East Africa. According to Bosha (1993:7-8), there are linguists who hold this view for instance, Carl Meinhof and C. Rohl who are of the opinion that Kiswahili developed as a result of intermarriage between the Swahili and Arabs. Other linguists such as Steere and Taylor say that Kiswahili is a creole born out of Arabic and other Bantu languages (Bosha, 1993:7). Second, the hypotheses hold the view that Kiswahili is a mixture of Bantu languages and Arabic. On the whole, the two suppositions are of the view that Kiswahili is closely related to Arabic in origin. The third

hypothesis holds the view that Kiswahili has no Arabic origin although it contains words which have been borrowed from Arabic.

Owing to the researches done by linguists, we support the third hypothesis. According to Massamba et al (1999:8), there are linguistic factors that determine the classification of a language. The linguistic criteria used are the phonology, morphology, basic vocabulary and syntax of the language. A language is said to be of Bantu origin if its phonology, morphology, basic vocabulary and syntax is similar or identical to that of other Bantu languages. We are of the view that Kiswahili is a Bantu language which has loanwords from Arabic. Studies such as Massamba et al (1999:8-11) and Mwaliwa (2000), have shown that Kiswahili is a Bantu language considering its structure which is similar to that of other Bantu languages including Ci- Cogo, Ci- Ruri, Ki- Hacha and Kidawida. Furthermore, the Kiswahili nominal class system and syllable structure are similar to those of other Bantu languages such as Kidawida, Kikuyu, Kitharaka and Kikamba. In terms of syllable structure, Kiswahili is similar to other Bantu languages which prefer open syllables. Massamba (2002:240) confirms the third view (that Kiswahili is a Bantu language) by observing that Kiswahili basic vocabulary, grammatical structure, nominal class system, phonological system and morphological system are of Bantu origin.

Massamba (2002:255) asserts that Kiswahili did not originate from one single community located at a specific place along the coast of East Africa. Rather, Kiswahili originated from the different Bantu communities that were speaking almost similar languages (which are now referred to as Kiswahili dialects). There were many communities of Bantu and Cushitic origin living around the coastal area. The Bantus comprised a number

of communities who spoke different languages each with their own culture and traditions. When the Arabs arrived at the coast, they referred to all the people living along the coastal line as *Sawahil,* which means the people of the coast. This Arabic term was phonologically adjusted to *Swahili* in the local language, Kiswahili. Hence, according to Massamba (2002:259), *Sawahil* is a generic name referring to people living along the East African coast. The question that arises is how to define the term 'coast' in terms of area: that is, where does the coastal region begin and end, or what is the extent of this region called 'coast'. This is an important question because we need to identify which groups of people live at the coast. Massamba (2002:272, 274) asserts that all people living at the coast of East Africa are Swahili, which includes groups such as the Giryama and other Mijikenda sub-groups. This would mean for example, that the Mijikenda and Dawida people in Kenya are also Swahili, given that they also dwell at the coast. For this reason, it is necessary to determine the meaning of the term 'coast'. There are three possible definitions of the term 'coast'. In reference to Polome (1967: 1, 19 – 24), the term 'coast' can stand for the islands in the Indian Ocean, for example, Zanzibar, Pemba, Pate, Mombasa and Lamu. The term 'coast' can also imply the islands and the areas that are immediately behind the coastal strip. According to Polome (1967:29), the people dwelling in this area include the Swahili, and the Mijikenda who speak nine different dialects namely Kauma, Chonyi, Duruma, Rabai, Jibana, Kambe, Ribe, Digo and Giriama. The term 'coast' may extend to refer to the area covered by the islands, the land immediately behind the coastal strip, and further inland. According to Polome (1967: 29), this area also includes the Pokomo and Dawida people.

In this study, we adopt the second definition of the term 'coast', referring to the islands and the area immediately behind the coastal strip. This is because it is recorded in earlier studies that Arabs came and settled at the coast of East Africa, where they interacted with the African locals (Harries, 1964: 224-225; Massamba et al, 1999:6-7). In our view, the Arab immigrants found and interacted with the African people living at the coast in trade, religion and marriage. According to Massamba (2002:92), the people living at the coast were Bantu and Cushitic speakers. However, it is important to note that not all the people living within the coastal area were Swahili. Giryama and Digo people, for instance are not Swahili, rather they belong to the Mijikenda group. So, our view is that, those who were referred to as Swahili by the Arabs were the people speaking diverse Kiswahili dialects in the islands and along the coastal line, for instance, Pemba, Unguja, Amu, Mvita, Mrima, Siu, and Jomvu. According to Massamba et al (1999:13), speakers of these neighbouring dialects are the ones that comprised the Waswahili. To sum up, the Waswahili are the Bantu people living at the East African coast (referring to the islands and the area immediately behind the coastal strip), who speak the various Kiswahili dialects as their first language. These are the people that came into direct contact with Arabs at the East African coast, which led to linguistic borrowing from Arabic to Kiswahili. In this study, we confine to investigate words borrowed into Standard Kiswahili. Henceforth, unless it is otherwise stated, we use the term Kiswahili to refer to Standard Kiswahili.

Arabic is a Semitic language that is spoken as a first and second language by 350-400 million speakers in the world. Arabic has various geographical spoken dialects such as Egyptian Arabic, Gulf Arabic, Iraqi Arabic, Yemeni Arabic and Sudanese Arabic in the

Middle East and North Africa (Akidah 2012: 2). Such varieties are known as Dialectal Arabic only used in informal settings, oral poetry and advertising. According to Akidah (2012: 2), the standard variety of Arabic is known as Modern Standard Arabic (MSA) which is used mainly by non-native speakers who learn it as a second language. It is the formal medium that is found in both oral and written Arabic texts. It is understood by the educated population, besides their dialectal varieties, given that it is taught in schools and used in religious fora. Moreover, MSA is widely used in publications and media in the Arab world (Watson, 2007). In this study, henceforth, unless it is otherwise stated, we use the abbreviation MSA to refer to Modern Standard Arabic.

1.2 Statement of the Problem

Languages have specific phonotactic constraints that control the syllable structures of their words. In the context of borrowing, the recipient language often dictates the structure of loanwords to conform to its syllable structures. According to Katamba (1989), languages have different principles of syllabification. This means that Kiswahili and MSA have constraints on syllabification that are unique to each of them. If Kiswahili and MSA have their unique syllable structure constraints, how do syllable structures of loanwords borrowed from MSA get restructured in the recipient language, Kiswahili? This study is an analysis of how the syllable structures of Kiswahili loanwords from MSA are adapted to Kiswahili structure. The syllable is a unit that plays a central role in the phonological organization of any language. For instance, it is the syllable structure of a language that often determines the phonological changes on the incoming words. In Kiswahili, for example, loanwords with closed syllables often have to be made open by adding a vowel segment at the word final position. This study intends to show the pivotal

role of the syllable in the realization of phonological processes in Kiswahili loanwords. In particular, in this study, we endeavor to find out how Kiswahili and MSA syllabification constraints apply on the syllable structure, syllable weight, stress placement and segments of loanwords in Kiswahili in the borrowing process. Moreover, Paradis & Lacharite (1997:380) lament about the scarcity of researches on phonological processes involved in borrowing stating that, "nonetheless, the published literature even in phonology, contains little actual analysis of the phonological adaptations that loanwords undergo in the course of being borrowed." Therefore, to fill this gap, our study analyses and explains the borrowing process by displaying the syllable transformations from MSA sourcewords to Kiswahili loanwords. We apply Generative CV-Phonology theory to show on the one hand, how MSA syllable patterns are adapted or restructured into Kiswahili phonological patterns. On the other hand, we exhibit how MSA syllable patterns are adopted or accommodated into Kiswahili phonology.

1.3 Research Questions

Our general research question is guided by the following specific research questions:

i) What are the similarities and differences in Kiswahili and MSA syllable structures?

ii) How are Kiswahili loanwords from MSA influenced by Kiswahili syllable structures?

iii) How are Kiswahili loanwords influenced by MSA syllable structures?

iv) What is the impact of MSA loanwords on Kiswahili phonology?

1.4 Objectives of the Research

The objectives of this study are to:-

i) Describe Kiswahili and MSA syllable structures.

ii) Explain how loanwords from MSA are adapted to the Kiswahili syllable structure.

iii) Demonstrate how loanwords are adopted into Kiswahili with MSA syllable structure.

v) Evaluate how MSA loanwords have impacted on Kiswahili phonology.

1.5 Rationale of the Research

Borrowing is a twofold process which takes place on the semantic and structural levels of a word. The latter involves the syllables' organization and arrangements in a lexical item. In adjusted borrowing, resyllabification process occurs on the loanwords to suit the structural constraints of the recipient language. However, as Anttila (1972) states, this is not always the case. In view of this, we aim to demonstrate how the complex process of borrowing works in the restructuring of Kiswahili loanwords. In addition, Kiswahili has been associated with Arabic, and therefore perceived as an Arabic dialect. Two hypotheses discussed in 1.1 associate Kiswahili with Arabic. One reason why Kiswahili is associated with Arabic is the loanwords borrowed from Arabic. In phonology, there are linguistic factors that need to be considered to determine whether Kiswahili is indeed an Arabic dialect or a Bantu language. One of these factors is phonological system of the language. Syllable structure is an aspect of phonology which plays the role of determining phonological processes occurring in words in a language. This study investigates the syllable structures of the loanwords borrowed from MSA to determine whether Kiswahili is an Arabic dialect or a Bantu language. Thus, this study falsifies the

perception that Kiswahili is a foreign language by showing that it is a Bantu language given that it bears syllable structures that are of Bantu origin.

1.6 Scope and Limitations

In this study, we limit ourselves to Standard Kiswahili. We acknowledge that other Kiswahili dialects such as Kimvita, Kiaunguja and Kiamu have also borrowed from Modern Standard Arabic. We have picked on Standard Kiswahili because it is not limited by geographical boundaries, which has enabled us to gather harmonized data. In this study we limit ourselves to analyzing Kiswahili loanwords borrowed from Modern Standard Arabic. That is, the sourcewords we are working with are from Modern Standard Arabic, and not from dialectal Arabic.

In this study, we also include in our discussion an analysis of syllable structures of loanwords' adaptation in Kitharaka, Kikamba, Hausa, Kinyarwanda for purposes of showing that the linguistic processes are not limited to Kiswahili, but they occur in other languages as well.

We recognize that Kiswahili has borrowed from local and foreign languages. Among the local languages from which Kiswahili has benefited are Pare, Haya, Nyamwezi and Kikuyu (Mbaabu, 1985:48; Iribemwangi, 2010:14). The foreign languages from which Kiswahili has borrowed include Persian, Hindi, French, German, Latin, Malay, Turkish, English and Arabic (Chiraghdin & Mnyampala, 1977:12-18; Iribemwangi, 2010:14). As stated in 1.2, the main focus of this study is on Kiswahili loanwords borrowed from MSA. However, we also use Kiswahili loanwords borrowed from Pare, Haya, Nyamwezi,

Kikuyu, Persian, Hindi, French, German and English to compare the syllable structures of loanwords from these languages with the syllable structures of loanwords from MSA. This is done with a view of explaining the MSA effects on Kiswahili *vis-à-vis* the other foreign languages.

This is a phonological study. The phonology domain is divided into two branches which are, segmental phonology and supra-segmental phonology. Segmental phonology deals with the analysis of segments. Supra-segmental phonology looks at the analysis of units larger than segments such as the syllable (Hyman, 1975:186). Our study entails both segmental and supra-segmental phonology. In segmental analysis, we investigate phonological processes occurring on the borrowed words, which affect the segments. In supra-segmental analysis, we study the syllable of borrowed words focusing on syllable structure, syllable weight and stress placement. We intend to demonstrate the interplay between syllable structure formation and phonological processes affecting the loanwords as they get domesticated into Kiswahili. In this study, we use phonetics as the basis of our phonological analysis of the loanwords being investigated. That is, we make reference to phonetic features of the data used in this study.

We investigate loanwords as the linguistic units within which syllables are to be found. This is because it is words that are borrowed, bringing with them syllables as part of their phonological composition.

Our study is diachronic given that borrowing is a diachronic/historical phenomenon (Mberia, 1993; Lyle, 1998). A conventional diachronic symbol (>) is used to indicate any

change that has taken place across languages. In this study, we demonstrate a linguistic change from (Language A) to (Language B) using the formulation: (Language A) > (Language B).

1.7 Definition of Terms

Borrowing

It is the process of taking a lexical item or part of it from one language and adding it to another, either with its original, modified or new meaning. In this process, a word or part of it, or a group of words of one language are picked and used by speakers of another language to become part of their language. Borrowing is a result of contact between speakers of two or more languages.

Loanword (LW)

It is a lexical item that has been acquired into a language through the borrowing process. A loanword is a word that is used in the receiving language, either with the structure of the lending language or with a modified structure.

Sourceword (SW)

It is a lexical item which is copied into another language. This is the word of the lending language, which is taken by the receiving language. Though it has been acquired by the receiving language, it continues to be used in the lending language. It bears the structure of the lending language.

Source Language (SL)

It is the language from which a lexical item is acquired through borrowing. This is the language that has donated the sourceword to the receiving language.

Recipient Language (RL)

It is the language that acquires a lexical item from the source language through borrowing**.** It is the language that receives the sourceword from the source language to use it as a loanword.

Standard Kiswahili

It is the standardized variety of Kiswahili which is used in formal settings, for example, in educational institutions and parliament. It enjoys academic input and modernization. Unlike regional dialects, this version was formulated to be used across geographical and social boundaries.

Modern Standard Arabic (MSA)

It is the standardized variety of Arabic. It is used in formal settings, for example, in educational institutions and literary texts. It is not restricted by geographical boundaries, but used by all learned Arabic speakers.

Syllable

It is a phonological unit of utterance that constitutes an onset, nucleus and coda. The most important part of the syllable is the nucleus. Every syllable must have a nucleus which can be occupied by either a vowel or a syllabic consonant. The onset and the coda are optional and they are occupied by consonant(s). A syllable does not have any grammatical or semantic function, but it breaks a word into units of utterance of time.

Tier

It is a level of phonological representation in non-linear phonology. It is a plane that displays phonological description in a language, be it tone, syllable structure, stress or segments.

Association Line

It is the line that links up the tiers in non-linear phonology. It shows the connection between units in one tier and another.

Adaptation

It is a process in which a borrowed linguistic item adjusts to conform to the pattern of the recipient language.

Adoption

It is a process in which a borrowed linguistic item enters into the recipient language with the pattern of the source language. The loanword does not conform to the pattern of the recipient language.

Phonotactic Rules

Phonotactics refers to the sequential arrangements of phonological units which occur in a language. Phonotactic rules are the conditions that permit the formation of well-formed

words and restrict formation of ill-formed words in a language. These rules reflect speakers' knowledge of what combination of sounds are allowed within a syllable in their language.

1.8 Literature Review

In this section, we review previous researches that are relevant to this study. This section is divided into five parts: first, studies on Kiswahili; second, the theoretical studies on phonology; third, studies on borrowing and loanwords; fourth studies on MSA; and, fifth, literature on the Generative CV-Phonology theory.

1.8.1 Review of Literature on Kiswahili

There are many linguistic issues that remain unresolved in Kiswahili. Kiswahili phonemic inventory is one of the key controversial issues (Iribemwangi, 2010:40). Linguists give different positions on the number and types of vowel and consonant segments in Kiswahili. According to Iribemwangi (2010) and Iribemwangi & Karuru (2012), the issue of the number of Kiswahili consonants has been argued for long by linguists with differing positions. Some linguists are of the view that Kiswahili has a total of 32 consonants. A proponent of this view is Ashton (1944) who holds that Kiswahili phonemes include prenasalised consonants and foreign segments including the segment /x/. Another group of linguists states that there are 25 consonants in Kiswahili. This group is represented by Kihore et al (2001) and Habwe & Karanja (2004) who list the foreign segments excluding the segment /x/. Yet, another group holds the position that Kiswahili has a total of 27 consonants. In this group, Iribemwangi (2010) includes

borrowed segments (except the segment /x/), and the labio-dental nasal /ɱ/ in the inventory. Mohamed (2001) and Matinde (2012) assert that Kiswahili has 24 and 26 consonants, respectively.

A larger group of linguists hold the view that Kiswahili has 29 consonants. These linguists include Polome (1967), Aswani (1995, 2001) and Massamba et al (2004). Though they hold the same view on the number of consonants in Kiswahili, they have divergent views on which consonants constitute the 29 segments. Polome (1967) and Massamba et al (2004) include aspirated consonants as part of Kiswahili phonemes; while Aswani (1995, 2001) includes prenasalised consonants. Polome (1967), Aswani (1995, 2001) and Massamba et al (2004) do not include the foreign voice-less velar fricative /x/ in Kiswahili phonemic inventory. Our view is that Kiswahili has a total of 25 consonants. These consonants include the foreign segments /ð/, /θ/ and /ɤ/.

Bosha (1994) shows how Kiswahili substitutes some segments from Arabic, for instance, /x/ >/h/, /x/ > /k/, /q/ > /k/ and /ɤ/ >/g/. However, we disagree on the last substitution, that is, /ɤ/ >/g/, because we find that the segment /ɤ/ is not replaced in the loanwords used in our study. Bosha (1994:93) asserts that the segment /ɤ/ is replaced by /g/ in loanwords such as /gɔrɔfa/, /garama/ and /gali/. In our opinion, this change does not take place in the stated Kiswahili loanwords. Rather, the segment /ɤ/ is adopted with the loanwords in the RL as discussed in Chapter Four. Therefore, in our opinion, the segment

came into Kiswahili through MSA words such as /ɤɔrɔfa/ for *storey*, /ɤarama/ for *cost*, /ɤali/ for *expensive*, /ɤaðabu/ for *anger* and /ɤasia/ for *chaos*. Other phonological processes observed in Bosha (1994) include vowel and consonant deletion, consonant replacement by vowel, vowel coalescence, monophthongisation, consonant strenghthening, and pharyngealised consonants losing their emphatic feature when they get to Kiswahili. These are, among others, some of the processes that have been discussed in the data analysis of our study.

It is noted that some linguists have listed the voiced velar fricative /x/ as a Kiswahili phoneme. Linguists such as Ashton (1944), Mohamed (2001), Iribemwangi (2010) and Matinde (2012) hold this view. According to Iribemwangi (2010:45), the segments /x/ and /h/, are not allophones of /h/, but two different phonemes in Kiswahili. On the contrary, it is our view that /x/ is not a phoneme in Kiswahili. According to Hyman (1975:67), a phoneme is a minimal unit that can function to distinguish meaning in words. For instance, in the Kiswahili words [baba] for *father* and [bapa] for *blade* the segments /b/ and /p/ are phonemes because they bring a difference in the meaning of the words. First of all, the segment /x/ is a foreign segment from MSA. In this study, we observe that foreign segments bring a difference in meaning with other foreign segments from MSA, and not with segments found in Kiswahili words of Bantu stock. We also find that the segment /x/ cannot distinguish meaning among Kiswahili loanwords borrowed

from MSA. For this reason, we are of the opinion that, although /x/ is used widely in Kiswahili loanwords, it is not a Kiswahili phoneme. Rather, /x/ is a segment used in free variation in some of Kiswahili loanwords such as /sabalxɛri/ for *good morning*, /axɛra/ for *paradise*, /xɛri/ for *fortunate* and /taxmisa/ (a poem with five lines in every stanza).

Linguists hold different views about Kiswahili syllable structures. In this study, we acknowledge that the linguists apply different theories in coming up with Kiswahili syllable patterns. Generally, all linguists attest that Kiswahili has the syllables CV and V. However, most linguists hold different views on the syllable CCV because some like Mgullu (1999), Kihore et al (2001), Massamba et al (2004), Habwe & Karanja (2004), Iribemwangi (2010) and Matinde (2012), claim that Kiswahili has the syllable CCV constituting a nasal consonant, an oral consonant and a vowel, for instance, the first syllable of [mbɛ$gu] for *seed*. Another CCV syllable constitutes an oral consonant, a glide and a vowel, for example, the first syllable of [kwɛ$nda] for *go.* In this study, we treat these two sequences of syllables as CCV. This is because the theory applied in this study, that is, Generative CV-Phonology recognizes only the consonant and vowel elements. According to this theory, the nasals and glides are treated as consonants except when they function as nuclei in a syllable. Another syllable is the CCCV which constitutes three consonants, for example, the first syllable in the words [mbwɛ$ha] for *hyena* and [spri$ŋgi] for *spring*. The glide in the first syllable of the word [mbwɛ$ha] is also treated as a consonant in accordance with the theory being applied in this study. As

discussed in the subsequent Chapters, this study, guided by Generative CV-Phonology model, observes that Kiswahili has the open syllables CV, V, CCV and CCCV; as well as closed syllables CVC and VC. More details are in the next chapter.

Bosha (1994) investigates the adaptation of MSA loanwords in Kiswahili. However, there are fundamental differences between Bosha's and our study. First, Bosha investigates MSA loanwords at the phonological, morphological, syntactic and semantic levels, while our study concentrates on the phonological level only. Second, we approach the loanwords phenomenon from the syllable point of view, by focusing on how Kiswahili and/or MSA syllable structures influence the syllable structure of Kiswahili loanwords and Kiswahili phonology in general, while Bosha's work does not focus on the syllable. Third, Bosha (1994) uses the General Theory of Loanwords, while our study applies a phonological theory, that is, the Generative CV-Phonology making our work phonological. All the same, Bosha (1994) is useful in providing some of the data used in our study.

On the whole, the studies we have reviewed on Kiswahili have given us insight on Kiswahili phonology in terms of the phonemic inventory and syllable structure. Moreover, a number of the studies have assisted by providing data that is analysed in this study. Specifically, these are Zawawi (1979), Bosha (1993, 1994) and Almabrok (2004). Other studies have given us an understanding of loanwords adaptation, for example, Bosha (1994), Aswani (1995, 2001) and Mwita (2009). This study has benefited immensely from the foundation provided by previous scholars on Kiswahili. However, we observe that despite the wide scholarship done on Kiswahili phonology, there is little

work done on Kiswahili syllable structure. The more recent studies on Kiswahili syllable structure are done by Aswani (1995, 2001) and Mwita (2009). Nonetheless, these studies do not compare the syllable structures of the loanwords and their sourcewords. It is our opinion that more investigations need to be done on the syllable structure of Kiswahili loanwords by using a syllable oriented theory that will display the syllables of the sourceword and of the loanword simultaneously. The Generative CV-Phonology theory enables us to showcase the phonological processes affecting the syllables in the course of borrowing in Kiswahili.

1.8.2 Review of Literature on Phonology

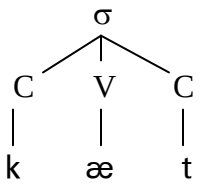
This section discusses issues related to the syllable as well as natural phonological rules.

1.8.2.1 Review of Literature on the Syllable

A syllable is a phonological unit of utterance which is made of the onset, nucleus and coda (Trubetzcoy, 1969; Hyman, 1975; Lass, 1984; Katamba, 1989; and Fromkin et al: 2003). Abercrombie (1967:40) refers to the three parts of a syllable as syllable phases, namely a) the release b) the vowel c) the arrest, respectively. The onset is the initial position within a syllable. The nucleus is the position following the onset; while the coda is the final position within a syllable. A syllable has its parts or phases occupied by consonant and vowel segments. The vowel segment usually occupies the nucleus or central part of the syllable, while the consonant segments occupy the marginal parts of the syllable, that is, the onset and coda (Ladefoged, 2000:215). Thus, the consonant at the beginning of a syllable triggers off the syllable, while the consonant at the end brings to an end the syllable. However, it is not always that all the three phases are occupied by

segments. Sometimes the release or arrest consonants may not be there in a syllable. The nucleus must always be there for a unit to qualify as a syllable. Therefore, a syllable can either be V, CV, VC or CVC. As stated by Abercrombie (1967:73), a syllable must have the central part; but it may or may not have the marginal parts. Thus, the English word /kæt/ is monosyllabic whose structure is as follows:

(1)



Gloss

cat

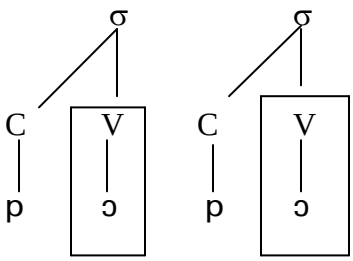
In example (1), the first consonant /k/ is the onset of the syllable, the vowel /æ/ is the nucleus or peak, while consonant /t/ is the coda of the syllable.

Hyman (1975) says that the relevant part of the syllable is the rhyme, whose nucleus and coda must be occupied. This is because the rhyme plays an important role of distinguishing between the light and heavy syllables. A syllable whose rime solely consists of a short vowel, for instance CV, is a light syllable. A syllable whose rhyme consists of either a long vowel V:, or has a VV (in diphthongs) or VC sequence, is a heavy syllable. This means that any non-branching nucleus will have light weight, while a branching nucleus will have heavy weight. It is important to note that Hyman's view about the coda does not apply to Bantu languages which have zero coda in their syllables. It appears that when Hyman (1975) was describing the syllable structure, he was drawing examples from languages that have codas in their syllables, English in particular. He did

not consider Bantu languages whose coda is not occupied by any segment. So, in the case of Bantu languages, it is the presence or absence of a branching nucleus that determines the weight of the syllable. If the nucleus is not branching, then its syllable weight will be light. If on the other hand, the nucleus is branching, then its syllable acquires heavy weight. In the case of Kiswahili, most syllables have a non-branching nucleus (which means light syllables), as exemplified below:

(2)

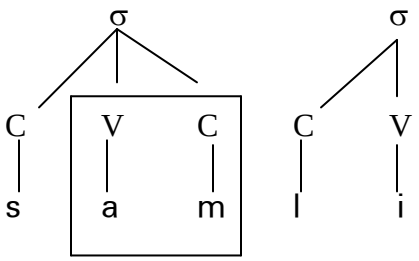
Light syllable:



Gloss

bat

Heavy syllable:



Gloss

ghee

The onset does not play a role in determining syllable weight (Hyman, 1975 and 2003; Katamba, 1989). Hyman (2003:5) states 2 types of syllable weight patterns, which are also expounded by Katamba (1989). One pattern defines a light syllable as one whose rhyme has one short or lax vowel, that is, V syllable; while a heavy syllable is one whose rhyme has either a long or tense vowel and/or a final consonant (or more), that is, either

V: or VC. The second pattern defines a light syllable as one whose rime has a short or lax vowel regardless of the consonant in the margin, that is, CVC^{0}; and a heavy syllable as one whose rhyme has a long or tense vowel regardless of the consonant in the margin, that is, V:C^{0}. It does not matter whether the coda is present or not, what matters is the length of the vowel. Kiswahili and MSA follow the first pattern which not only considers the length of the vowel, but also the presence or absence of a coda in the rhyme.

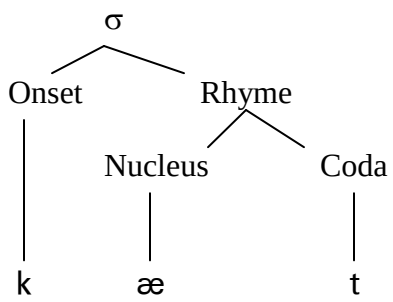
Syllable weight is important in determining stress placement in different languages (Hyman, 2003:5). Before deciding where stress is marked in a syllable, the syllable boundaries must be marked and the syllable weight be identified. Again, as Katamba (1989:179) asserts, the syllable onset does not play any role in determining the applicability of stress rules. Since stress is a matter of greater auditory prominence (Katamba, 1989), stressed syllables tend to have higher pitch and longer duration than their unstressed counterparts. The main phonetic ingredients of stress are pitch, length and loudness. Phonologically, there are several kinds of stress, one of which is word stress (Katamba, 1989:222). Word stress is the prominence given to one of the syllables in a word having more than one syllables, or to the only syllable of a word. Every syllable has some element of stress. However, in any word there is one syllable that is more salient than the rest in that word. This means that there are two degrees of stress within a word: primary stress and secondary stress. The more salient stress is the primary stress; while the less salient is the secondary stress. A word with only one syllable will have the primary stress only. Stress, according to Katamba (1989) is not a vowel feature,

rather, it is an autosegmental property of the word. That is, stress belongs to the syllable, it is not confined to a segment.

There are two types of stress. According to Hyman (1975:204), they are free stress and fixed stress. Languages with free stress are those which place prominence on different syllables depending on the syllables structure of the word. Languages with fixed stress restrict the placement of prominence on a particular syllable within a word, say for example, on the penultimate syllable. On the contrary, fixed stress is completely predictable. Stress tends to stay close to either the beginning or end of a word. According to Hyman (1975:208), a rule which assigns penultimate stress is more natural than a rule which assigns final stress. Hence, penultimate stress is favoured over final position by languages, for example, Kiswahili and MSA.

The syllable plays an important function in phonological organization of a language. According to Katamba (1989:153), a syllable is purely a phonological entity in relation to its function in a language. He states that the syllable is at the heart of phonological representation. According to linguists, a syllable has a branching hierachical structure. Using a multi-tiered framework, the syllable can be diagrammatically represented as follows:

(3)



Gloss

cat

As stated by Abercrombie (1967), Hyman (1975), Clark & Yallop (1990) and Ladefoged (2000), languages have different patterns of syllables and segment clusters. This is because every language has its syllabification constraints that determine the syllable boundaries in its words. In general, all languages have the preferred syllable structure CV, which is said to be a universal syllable. Other syllable types are obtained in a language depending on the phonotactic rules of the language. Hyman (1975) outlines Pulgram's principles of syllabification which help in determining the syllable boundaries in a language. The principles are a) Maximal Open Syllabicity b) Minimal Coda & Maximal Onset and, c) irregular coda. Pulgram's principles have been adopted by Clements & Keyser (1983) in their syllabification procedure called Onset First Principle. These principles have assisted in determining syllable boundaries and consonant clusters in our Kiswahili and MSA data.

Hyman (1975) makes a statement to the effect that syllable structure and word structure are intimately related such that whatever happens to the syllable has to happen to the word as well. For instance, sequential constraints that apply at word initial position also operate in syllable initial position, though occasionally they may differ. This is relevant

to our study, as we are investigating the relationship between word and syllable structure in the realization of morphophonological processes.

Katamba (1989:164-168) explains the three important functions of the syllable in language. One, the syllable is a basic phonotactic unit in the sense that it regulates how segments combine in a word. In every language, there are constraints that apply with regard to combination of segments in a word. It is the syllable structure that determines which combinations are permitted and which ones are not in any given language as stated by Katamba (1989:164) that, "One of the most basic functions of the syllable is to regulate the ways in which lower level units (consonants and vowels) of the phonological hierarchy can combine." As Katamba (1989) and Hyman (1975) state, the syllable is the unit that applies phonotactic rules in the formation of words in languages. The syllable plays the role of filtering only the permissible sound sequences. Every language has its own specific syllable structure constraints that control the combination of segments in syllables. Thus, based on the syllable structure constraints, there are well-formed syllables and ill-formed syllables in every language. The well-formed syllables are those that are permitted by the phonotactic rules of a language. The ill-formed syllables are those that are not allowed by the phonotactic rules of a language. Thus, some of the well-formed MSA syllables are ill-formed syllables in Kiswahili. For instance, the MSA syllable CV: and CVCC are considered ill-formed in Kiswahili because Kiswahili phonotactic conditions do not permit for long vowels and consonant clusters at final position. A number of loanwords from MSA came with ill-formed syllables of their SL with respect to Kiswahili constraints. These ill-formed syllable structures from MSA

have to be modified to conform to the well-formed Kiswahili syllables. However, some of the MSA loanwords are adopted with ill-formed syllables (with regard to Kiswahili constraints) which become part of Kiswahili syllable structure, for instance, the CVC syllable is observed in a number of Kiswahili loanwords borrowed from MSA (Mwita, 2009).

The second function of the syllable is that it is the domain of phonological rules in a given language. Katamba (1989:166) says, "the syllable structure often plays an important role in conditioning the application of phonological rules internal to a language." This means that the position of segments in a syllable is crucial in determining what phonological processes would occur (Hyman, 1975), for instance, a vowel is usually inserted at word final position in Kiswahili words that have closed syllables. The second function of the syllable also concerns the phonological processes that are motivated by the need to preserve or create preferred syllables. The preferred syllables are achieved by applying preferred syllable structure rules (PSSRs) discussed by Schane (1973). The preferred syllable structure rules (PSSRs) are one category of natural rules in phonology which are discussed in section 1.8.2.2.

The third function of the syllable is to control the structure of complex segments. Segments at the segmental tier can have various structures depending on their features. The syllable controls the combination of segments in the way those segments are associated with the CV-tier. For this reason, Katamba (1989:169) says, "one function of the syllable is to provide an analysis of the internal structure of segments, and to indicate the number of rhythmic units present in a syllable." As a result of this function, three

patterns of internal segmental structure are possible depending on how the segments are linked to the CV-tier. The three patterns include: one-to-one association of V or C with a segment; simultaneous association of one segment with two C or V slots, and; the simultaneous association of a single C slot with two segmental distinctive feature matrices. Further details on the patterns are discussed in 1.9.1.3 under the theory section in this study. The three functions of the syllable discussed above are important in the adaptation process of loanwords in Kiswahili. The three functions portray that the syllable is an important unit in the phonology of loanwords in Kiswahili.

Consonant clusters within a syllable are another important aspect in language. Abercrombie (1967:75) asserts that, "some languages have structural restrictions of various sorts which operate within the limitations imposed by the range of patterns of their syllable structure." This refers to the way the consonant clusters are arranged within a syllable. Some languages, for example, Kiswahili permit consonant clusters at syllable initial but not at syllable final position. Other languages permit consonant clusters in syllable final but not at syllable initial position, for instance, MSA. Consonant clusters are discussed in detail under the theory section 1.9 in this study.

1.8.2.2 Review of Literature on Natural Phonological Rules

Phonology is a branch of linguistics which studies the sound systems of languages. It is concerned with the range and functions of sounds in specific languages. In phonology, there are natural rules as postulated by Schane (1973). According to Schane (1973) and Hyman (1975), natural phonological rules are the universally expected phonological processes that recur in all languages. Natural phonological rules are also said to be

unmarked rules given that they occur normally in all languages. There are three categories of natural rules, namely: assimilation rules; preferred syllable structure rules; and maximum differentiation rules. Assimilation rules involve adaptation of features by a near-by segment, in which a segment ends up being similar to the other segment(s). Examples of assimilation rules in Kiswahili include homorganic nasal assimilation, palatalization, strengthening and weakening, and vowel harmony. Preferred syllable structure rules (PSSRs) are the rules that convert complex or 'abnormal' syllable structures to simpler or 'normal' ones. PSSRs are the syllable structure processes that are motivated by syllable structure constraints of a language. Schane (1973) and Kenstowisz & Kisseberth (1979) say that syllable structure processes affect the relative distribution of consonants and vowels within a word. That is, these processes determine the positions of consonant and vowel segments in a syllable or word as governed by the language's phonotactic rules. Examples of Preferred syllable structure rules in Kiswahili are vowel coalescence, segment deletion, glide formation and segment insertion. However, Schane (1973:208) states that not all of the PSSRs necessarily yield the optimal CV syllable. In some cases, the preferred syllable structure rules would yield syllable types other than CV. Maximum differentiation rules tend to keep segments as far apart from one another as possible, thereby making them less similar to each other. Maximum differentiation rule is also referred to as a dissimilation rule. In Kiswahili, glide formation is an example of maximum differentiation rule. This process occurs in the environment of two adjacent vowels, where one of the vowels changes to a glide. Due to this change, one of the vowels becomes less similar to the other, such that there is a sequence of a glide followed by a vowel.

1.8.3 Review of Literature on Borrowing and Loanwords

Borrowing is a product realized through linguistic contact of two languages (Anttila, 1972; Versteegh, 2001; Thomason, 2001; Hall-lew, 2002; Myers-Scotton, 2002; and Winford, 2003). The borrowing process occurs in the context of two or more language speakers coming into contact with each other. Iribemwangi & Karuru (2012:49) state that borrowing is a result of language contact stressing Langacker's (1968) views that, there is no language whose speakers have ever had contact with any other language that may be said to be completely free of borrowed forms. As speakers interact, they end up borrowing words from another language they are in contact with. In the case where two or more languages come into contact, the speakers naturally, tend to use words from the other languages along with their own words. That is why Winford (2003:33) states that:

> This kind of contact [that is, borrowing] may be the result of socio-cultural forces such as immigration, invasion or military conquest, the realignment of national boundaries or the establishment of inter-group contact for purposes of trade, marriage, and so on.

Anttila (1972), Lyle (1998), Versteegh (2001) and Hall-lew (2002) assert that borrowing takes place for two main reasons, namely, need and prestige. However, there are other reasons for borrowing, for instance, bilingualism, euphemism, and building a sense of identity (Hall-lew, 2002:5). In this study, we focus on two factors of borrowing, namely, need and prestige. Speakers often find themselves that they require to name a new concept or item. If new cultural items are introduced into a speech community, the speakers have to create words to refer to the foreign items. Anttila (1972:155) notes that speakers can nominate new items by using several ways, including loan translation, metaphor or straightforward borrowing. The new items that require nomination are often

non-existent prior to their being borrowed in the language. More often, speakers tend to borrow words instead of using loan translation or metaphors, thus, confirming Hall-lew's (2002:4) view that, borrowing is one of the most frequent ways of acquiring new words.

Winford (2003:29) asserts that borrowing can occur under a variety of conditions, including close interaction between the recipient language and source language speakers in bilingual communities. She states that most borrowing associated with distant contact arise from the need to designate new things, persons, places and concepts especially new areas of cultural knowledge and experience through contact with others, for example, development of science and technology. In this way, borrowing is one of the linguistic mechanisms used to fill semantic gaps in languages. In Kiswahili, new Islamic and cultural concepts from MSA were introduced to the Swahili people, for example, *Ramadhan* (holy month of Muslim fast), *Idd* (Muslim festival) and *madrasa* (Islamic religious school), have been borrowed and become part of Kiswahili. It is important to note that the Swahili people had their own religious beliefs prior to the arrival of Arabs. The Arabs came with Islamic religion which had concepts that were foreign to the traditional religion of the Swahili people. According to Iribemwangi (2013:2), borrowing also occurs as a result of foreign influence, that is, a foreign culture sometimes imposes its way of life on speakers of another language. The Arabs came and imposed their culture on the Swahili people resulting in the borrowing of concepts from MSA to Kiswahili.

Prestige is another important factor to induce borrowing in language. Winford (2003:37) says that, power and prestige differences between the speakers of languages involved

played an important role in promoting lexical borrowing from the high to the low language. Borrowing for prestige reasons occurs when speakers of a perceived subordinate group use lexical items from the language of the perceived high class group. In this context, the language of the rulers or influential is more preferred or adored than the language of the ruled. Therefore, speakers of the ruled group, in their effort to identify with the rulers, tend to use words from the prestige language. According to Versteegh (2001), Arabic was the language of prestige in many countries where it spread like Malta, Uzbekistan, Afghanistan, Uganda and Kenya. Due to the status of Arabic in these countries, many loanwords got into other languages including Kiswahili through borrowing for prestige reasons.

Anttila (1972:155) asserts that words that were borrowed for prestige reasons, in many cases, have their equivalent in the recipient language. Many of such words, for example, are cultural concepts such as *bride, sister, uncle, mother*; body parts such as *head, hand, legs, body hair*; natural beings like the *sun, moon* and *stars,* will always have words in all languages since they are universal. However, some speakers opt to use words from the other languages instead of the previously used words. In Kiswahili, for instance, words like *harusi* (wedding), *Mola* (God), *maradhi* (disease) and *damu* (blood) have their native equivalents in Kiswahili as *ndoa, Mungu, uwele* and *ngeu* respectively, yet the borrowed words have taken dominance in the language. It is our view that the two factors (need and prestige) have equally contributed to borrowing in Kiswahili. A number of words have been borrowed into Kiswahili to fill semantic gaps especially in the area of religion, trade, science and technology. Likewise, many loanwords have come into Kiswahili due to prestige.

Borrowing is one of the ways by which a language grows. According to Fromkin et al (2003:512), borrowing words from other languages is an important source of new words. There are many other ways of growing the vocabulary of a language. These include derivation, compounding, reduplication, acronymy, blending and abbreviation (Fromkin et al, 2003:93-112). With the exception of borrowing, these processes are intra-language. Borrowing is the only language change process that involves interaction of more than one language – it is an inter-linguistic process. By adding new words into a language, borrowing brings about a change in the language. Therefore, as Anttila (1972) and Hall-lew (2002) postulate, borrowing is an aspect of language change.

Hall-lew (2002:6), adopts Fantini's (1985) levels of borrowing which in this study, we refer to them as two types of borrowing, namely, pure (adopted) borrowing and adjusted (adapted) borrowing. Pure borrowing involves taking the word in the recipient language without making any structural alterations in the word. In adjusted borrowing, the loanword undergoes structural changes when it gets into the recipient language. The two types of borrowing occur in all languages, depending on the structure of the languages involved. If the structure of the SL is similar to the structure of the RL, then it is likely that pure borrowing will take place. If on the other hand, the structure of the SL is different from the structure of the RL, then it is likely that adjusted borrowing will occur. In adjusted borrowing the loanwords are usually modified to conform to the structure of RL (Paradis & Lacharite, 1997; Lyle, 1998; Versteegh, 2001; Winford, 2003; and Fromkin et al, 2003). However, as noted by Anttila, 1972; Lyle, 1998; Hall-lew, 2002; and Mwita, 2009; it is not always that adjusted borrowing occurs. Sometimes, loanwords

get into the RL with their form unchanged. In both types of borrowing, it would be interesting to find out how and why they take place between languages. In this study, we observe both pure and adjusted borrowing from MSA to Kiswahili, and we seek to explain why the changes take place or not. For instance, the MSA sourcewords /mamlaka/ for *authority* and /maktaba/ for *library*, are adopted in Kiswahili through pure borrowing since no restructuring takes place in Kiswahili loanwords /mamlaka/ and /maktaba/. On the contrary, MSA words /mawlaː/ for *God* and /ħaqiːqa/ for *fact* are adapted through adjusted borrowing in the Kiswahili loanwords /mɔla/ and /hakika/ given that their syllable structures and segments have been modified to conform to RL's phonotactic constraints.

Wherever borrowing takes place, it has the tendency to impact on the phonology of the RL. This is because it is through borrowing that the RL acquires new patterns (Hall-lew, 2002:6). This happens in the case where a loanword has been adopted into the RL with its original structure which is not in the RL. If the word is accepted into the RL with a foreign structure, then it is said that the RL has acquired a new form, which may be in terms of new segment, new segment sequence or new syllable structure. By so doing, the phonology of the RL will have been affected by the loanwords especially if new forms are incorporated. In line with that, linguists such as Anttila (1972:167) suggest that there should be a special class of loan segments. Zawawi (1979:140) holds that loanwords should be treated as part of the phonology of the RL. We are of the view that, since loanwords are being used in the RL, they have become part of the RL's phonology.

However, given that the etymology of loanwords is in the SL and not in the RL (Hall-lew, 2002:18), then loanwords should be placed in their own class or category. This is because it is not always possible to use a loanword together with an original word in minimal pair analysis to obtain phonemes of a given language. In this study, we observe that, it is only possible to get phonemes when loanwords alone are used without mixing with Kiswahili words of Bantu origin. For this reason, loan segments, sequences and syllables should be treated as a special class in the phonology of a language.

1.8.4 Review of Literature on MSA

MSA has a total of 6 vowels of which three are short vowels and the other three are long vowels. In addition, there are a total of 28 consonants (Bateson, 1967; Al-ani, 1970; Fischer, 2002; Watson, 2007; and Akidah, 2012). According to Fischer (2002) there are 3 types of syllables in MSA, namely CV, CVː and CVC. Bateson (1967) gives 4 syllable types in MSA as CV, CVː, CVC and CVːC. Al-ani (1960:87) and Akidah (2012:79) state that MSA has 5 syllable types, that is, CV, CVː, CVC, CVːC and CVCC. All syllables in MSA begin with a consonant 1(Bateson, 1967; Al-ani, 1970; Fischer, 2002). Moreover, there are geminate consonants in MSA. According to Crystal (2005:206), a geminate consonant consists of a sequence of identical adjacent segments, for example, -qq in the MSA word /ħaqq/ for *justice*. In MSA, when geminate consonants are found within one syllable as in the given example, they are not separated by a syllable boundary. On the other hand, when geminate consonants are found in a word with more than one syllable, the geminate consonants are separated by a syllable boundary, for example, in the word

/suk$kar/ for *sugar* (Al-ani, 1970:77). These principles also apply to consonant sequences in MSA, for example, -nf sequence in the word /sˤanf/ for *standard/skilled* are dominated by one syllable node, as opposed to tˤ-b sequence in the word /xutˤ$ba/ for *speech*, which are constituents of two different syllables. Usually, the first member of the geminate consonants occupies the position of the coda in the preceding syllable, while the second member of the geminate consonants is the onset of the following syllable. All long vowels belong to the same syllable in MSA. More details on MSA phonology are discussed in Chapter Two of this study. Generally, the literature we have reviewed on MSA has assisted by providing us with insight on MSA phonology. It has given us an understanding of MSA segments and syllabification in particular.

1.8.5 Review of Literature on Generative CV-Phonology

In this section, we discuss the theory applied in our study, that is, Generative CV-Phonology. The origin of generative theory is Chomsky's (1957) Generative Grammar. Chomsky (1957:15) states that, "grammar mirrors the behavior of the speaker, who on the basis of a finite and accidental experience with language, can produce or understand an indefinite number of new sentences". Grammar refers to the speaker's knowledge of a given language. It is the native speaker's ability to produce and understand an indefinite number of sentences he has never encountered before. According to Chomsky (1957), the knowledge of the rules that a native speaker uses is called competence, while the actual speech as constrained by the rules is known as performance. This overall principle of generative grammar is applicable to all levels of grammar, that is, syntactic, semantic and

phonological. As such, generative grammar has three components which are: generative syntax, generative semantics and generative phonology.

Generative phonology is the phonological component of generative grammar which constitutes the phonological rules and phonetic representation. Generative phonology is responsible for converting underlying forms of the lexicon into surface phonetic representations through the application of phonological rules. According to Clements & Keyser (1983:1), generative phonology is characterized by linear sequences of segments in its phonological representation. Generative phonology does not use hierarchical organization other than the syntactic phrase structure. In other words, generative phonology analyses phonological representation syntagmatically. Generative phonology can exhibit the segments involved in a sentence and how they are ordered. Thus, it can analyse a sentence and demonstrate its constituent parts up to the segment level. Examples of generative phonology linear models include Natural Generative Phonology (NGP) and Natural Phonology.

Generative phonology has its shortcomings. According to Clements & Keyser (1983:1), generative phonology did not consider the important role of the syllable in phonological organization. They note that:

> 'there has been increasing evidence that the exclusion of the syllable is a serious omission in generative phonology and that many phonological rules only receive appropriate formulations in terms of this notion.'

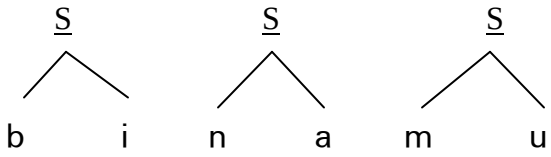
Further, generative phonology (which is linear) could not capture certain features bigger than the segment, such as tone, vowel harmony and syllables. This is because generative

phonology never considered the syllable to have a role in phonological organization. There is no symbol to represent syllables and to mark syllable boundaries in generative phonology. According to Clements & Keyser (1983:2), it is these shortfalls of linear phonology that led to phonologists like Goldsmith (1974, 1976), Liberman (1975), William (1976), and Liberman and Prince (1977) to develop new models that could overcome the shortfalls. The new models extracted certain properties of utterances such as tone and stress, to represent them as features extracted from the linear string of segments and arrayed them on independent planes (or levels of representation). This led to the introduction of multi-linear sequences of feature matrices to handle larger units (syllables) by use of tiers and association lines. However, despite the development of non-linear phonology, it maintained the generative approach of formalism, rules, well-formedness and derivational processes. Examples of generative non-linear models are Autosegmental Phonology, Metrical Phonology and CV-Phonology.

Generative CV-Phonology is a non-linear model focused on the syllable structure that was developed by Clements & Keyser (1983). Generative CV-Phonology holds that many phonological rules only receive appropriate formulations in terms of the syllable. In line with Hyman (1975) and Katamba (1989), which we have discussed in 1.8.2.1, the syllable is a phonological unit that plays a significant role in determining the organization of segments in a language. Many phonological processes in language are motivated by the need to maintain the preferred syllable structure of the language.

Generative CV-Phonology is an extension of Kahn's (1976) theory of the syllable, which had two tiers namely, segmental and syllable tier that were connected by association lines as shown below:

(4) Gloss



cousin

Kahn's (1976) theory was found by Clements & Keyser (1983) as wanting due to four reasons. One, the theory could not show the initial and final clusters of the syllable. Two, it did not consider resyllabification process since it does not give procedures for syllabification of words. Three, Kahn's theory did not distinguish between syllable peaks and marginal elements of the syllable, that is, the internal structure of the syllable. Last, the theory did not tackle the notion of syllable weight representation. Consequently, Clements & Keyser (1983) came up with a modified theory of the syllable, called Generative CV-Phonology. More details on the development of Generative CV-Phonology are discussed under theoretical framework in this study.

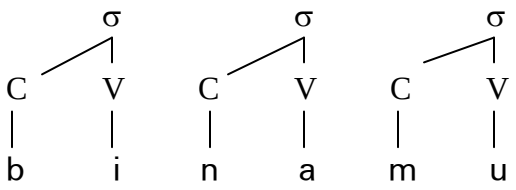
1.9 Theoretical Framework

1.9.1 Introduction

The Generative CV-Phonology model was built upon Kahn's (1976) theory of syllable representation. Kahn's model of the syllable has two tiers, namely, the syllable tier and segmental tier, as shown in example (4). Clements & Keyser (1983) modified Kahn's model by introducing a third tier, known as CV-tier to mediate between the syllable tier

and the segmental tier. The CV tier was introduced so as to tackle the shortfalls identified in Kahn's model. Thus, the Generative CV-Phonology has three tiers as demonstrated below:-

(5)



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CV-Phonology model provides more details about the syllable than Kahn's model. Apart from showing the number of syllables that are in a word, CV-Phonology model shows the nucleus and the margins of the syllable. According to Clements & Keyser (1983:10), the CV tier distinguishes the functional positions of the elements within a syllable. Elements of this tier distinguish between syllable peaks and syllable margins in that segments dominated by V elements are the syllable nucleus, while segments dominated by C elements are the syllable margins. Thus, in (5) the segments /i/, /a/ and /u/ are syllable nucleus, while /b/, /n/ and /m/ are syllable margins. The elements of the CV tier also serve the function of defining the timing units of speech production in the syllable. Single elements of C or V represent one timing unit; double elements represent two timing units, three elements represent three timing units and so on. The CV-tier also plays the role of displaying syllable weight. As has been discussed in 1.8.2.1, the nucleus of the syllable plays the role of distinguishing between the heavy and light syllables. It is in the CV tier where we see the branching or non-branching of the nucleus, and therefore distinguish

the light from the heavy syllable. As has been stated, the position of the nucleus is occupied by the V- elements only in this theory.

1.9.2 Generative CV-Phonology Tenets

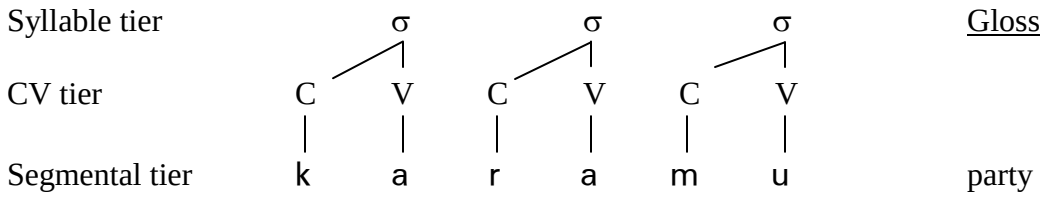
There are three tasks and two principles within this theory. According to Clements & Keyser (1983:25), Generative CV-Phonology has three main tasks. The tasks are: to specify well-formed expressions of the theory, to specify the parameters governing the varying choices of syllable types, and to specify language specific rules that govern syllabification in languages. The two principles that are important in this theory are core syllable division and syllable transformations. We discuss them below.

1.9.2.1 Well-formed Expressions

As has been stated in 1.8.5, Generative CV-Phonology is a non-linear model which has three tiers. Each of the tiers has a certain vocabulary associated with it. The segmental tier has a single column of phonetic features of consonants and vowels. The CV tier has two elements, C and V to denote

[-syllabic] and [+syllabic] elements, respectively. The syllable tier is denoted by a single element (σ) as demonstrated below:

(6)



The three tiers are connected to each other using association lines. In this model, the syllable node dominates the CV elements. Therefore, the CV elements are immediate constituents of the syllables. Likewise, the consonant and vowel segments are the immediate constituents of the CV elements.

1.9.2.2 Core Syllables

In Generative CV-Phonology model, every language has its core syllables. The syllable type found in all languages is presumably CV (a consonant followed by a vowel), while other syllable types vary from one language to another. Clements & Keyser (1983:28) say that the other syllable types are realized in languages by the application of either or both of the following rules on the CV syllable type:-

i) deleting syllable initial C (to obtain V syllable)

ii) inserting syllable final C (to obtain CVC syllable)

(Clements & Keyser 1983: 28)

From the above rules, four types of languages can be identified in terms of syllable structure. All languages fall into one of these categories depending on the rules they apply:-

Type I: CV

Type II: CV, V (applied rule i)

Type III: CV, CVC (applied rule ii)

Type IV: CV, V, CVC, VC (applied rule i and ii)

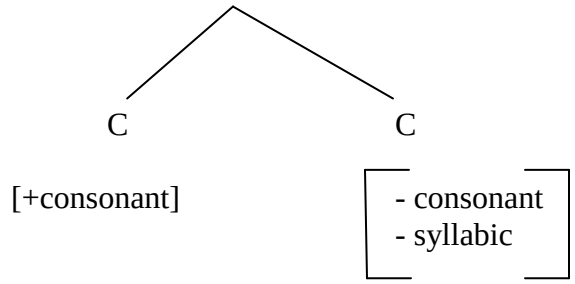
(Clements & Keyser 1983: 29)

Kiswahili words of Bantu origin belong to type II, having only CV and V syllables. With the incoming of loanwords, Kiswahili now enters into type IV having CV, V, CVC and VC. The last two syllables, that is, CVC and VC are observed in loanwords. MSA can be said to be in type III having CV and CVC as its core syllables. Besides the core syllables obtained by the rules (i) and (ii), some languages have well-formed core syllable types that are made of consonant and vowel clusters. MSA has syllables of consonant and vowel clusters at final and medial positions respectively, that is, CVCC and CV:C. Kiswahili has consonant clusters at syllable initial position only, that is, CCV and CCCV.

Words are fully syllabified at the lexical representation level (Clements & Keyser, 1983: 27). Therefore, syllable structures encountered in surface representation will be similar or identical to those found in underlying representation. Every language has the maximal syllable, for example, Kiswahili has the maximal syllable C^3VC, meaning that it allows a maximum of three consonants at syllable initial position, a single vowel and not more than one consonant at syllable final position. The C^3VC structure is possible in both Kiswahili words of Bantu origin and borrowed words. MSA has the maximal syllable CV^2C^2, meaning that it allows only one consonant at syllable initial position, followed by up to two vowels and, a maximum of two consonants at syllable final position.

According to Clements & Keyser (1983: 31), constraints apply on the segment sequences within a syllable. These constraints are referred to as positive and negative syllable structure conditions, which are applied to generate the set of well-formed core syllables for each language. The positive syllable structure conditions (PSSCs) state the general canonic form of well-formed consonant and vowel clusters in terms of sequences of natural classes. PSSCs are the conditions which specify the consonant clusters that are permitted in a given language. For instance, in Kiswahili, initial consonant clusters may contain an obstruent or sonorant followed by a glide such as bw-, mw-, fj- and pj- as represented below:

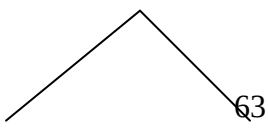
(7)



is admissible

The negative syllable structure conditions (NSSCs) apply to the output of the PSSCs to specify certain subsequences within the syllable as ill-formed. Thus, NSSCs perform a filtering operation by prohibiting ill-formed syllable sequences. NSSCs are the conditions which specify the consonant clusters that are not permitted in a given language. For instance, in Kiswahili words of Bantu stock, certain consonant clusters are not permitted as given in the following rule:

(8)



C C is inadmissible

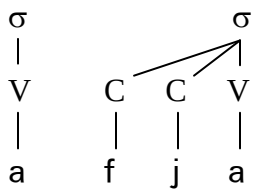
[+consonant] [- consonant, - syllabic, +coronal]

The condition given in (8) therefore, excludes consonant clusters such as mj-, tj- and sj- in Kiswahili words of Bantu stock. In Chapter Two, we expound more on Kiswahili consonant clusters.

1.9.2.3 Core Syllable Associations

There are universal and language specific core syllable associations between elements of the CV tier and elements of the segmental tier. The universal core syllable association stipulates that V-elements dominate [-consonant] segments which includes vowels and syllabic consonants; while C- elements dominate both [+consonant] and [-consonant,-syllabic] segments, which includes all the obstruents. In other words, V-elements dominate syllabic segments; while C-elements dominate non-syllabic segments as shown in the example below:

(9)

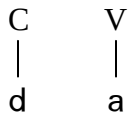


Gloss

health

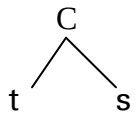
Core syllable associations can either be one-to-one, one-to-many or many-to-one. One-to-one association is ideal for singular segments since it links the C and V elements to a single segment as shown below:

(10)



One-to-many association links the C or V element to two or more segments. It is ideal for complex segments as shown below:

(11)



Many-to-one association links more than one C or V elements to a single segment. It is ideal for geminate segments, for example:

(12)

1.9.2.4 Core Syllable Division

According to Clements & Keyser (1983:37), elements of the CV tier are grouped into core syllable inventory selected by the language in question. This core syllable division is constrained by the Onset First Principle which stipulates that:

(13)

a) Syllable-initial consonants are maximized to the extent consistent with the syllable structure conditions of the language in question.

b) Subsequently, syllable-final consonants are maximized to the extent consistent with the syllable structure conditions of the language in question.

The two phases of the principle above apply in the order given: phase (a) must precede phase (b).

Therefore, fully formed core syllables should be derived using the procedure of syllabification as follows:-

(14)

i) V -elements are pre-linked to the σ s.

ii) C -elements to the left are adjoined one by one as long as the configuration resulting at each step satisfies all relevant syllable structure conditions.

iii) Subsequently, C elements to the right are adjoined in the manner described in (b) above.

1.9.2.5 Syllable Transformations

According to Clements & Keyser (1983:53), there are processes which transform core syllable representations into the frequently distinct set of surface syllable trees. Some of these processes affect elements of the segmental tier exclusively, while some affect the CV and syllable tiers. These processes include insertion and deletion of association lines,

as well as segment insertion, deletion, substitution and metathesis on the CV tier. The general effect of these operations is to preserve phonological well-formedness through derivations (Clements & Keyser, 1983:54). Therefore, phonological rules are applied on ill-formed syllables to realize well-formed syllables. Clements & Keyser (1983:54) state that rules of syllabification continue to apply throughout phonological derivations in accordance with Resyllabification Convention which states that:

(15)

> the output of every rule is resyllabified according to the syllable structure rules examined up to that point in the derivation.

The Resyllabification Convention in (15) implies that all association lines between C-elements and the syllables, as well as all floating syllables are erased, and that the resulting configuration is resyllabified according to the algorithm given in (14).

1.9.3 Application of Generative CV-Phonology Theory

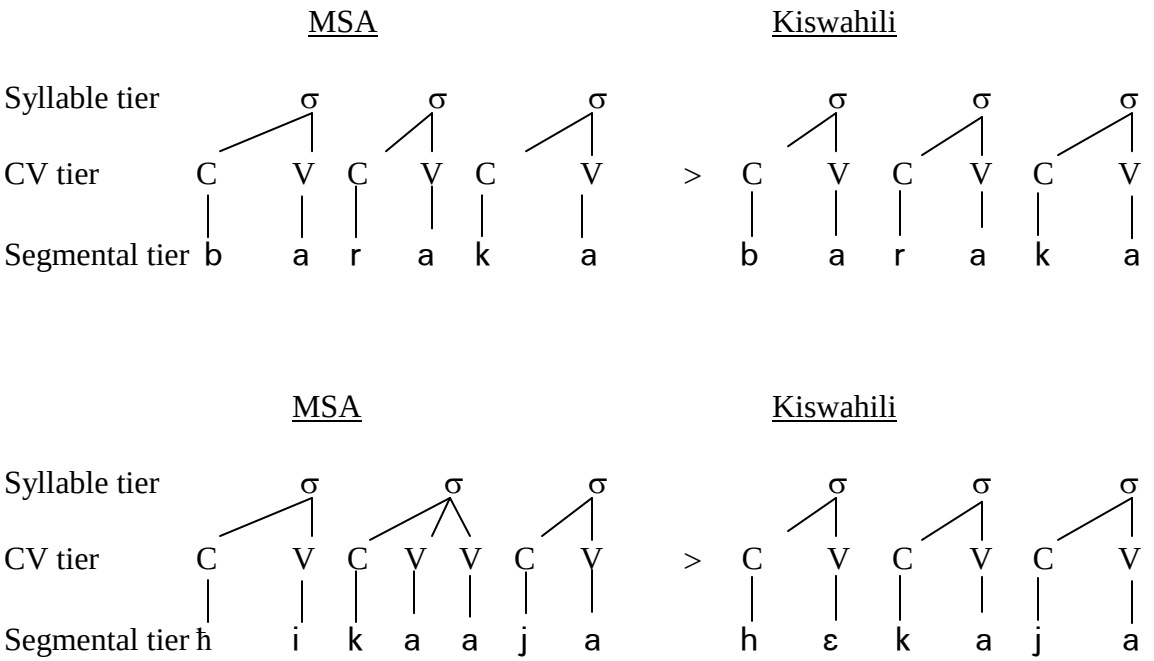
In this section, we explain how the Generative CV-Phonology model applies to the data analysis of this study. We have used all tenets of the theory in this study.

1.9.3.1 Well-formed Expressions

In this study, we use the well-formed expressions of the theory. The model has three tiers, namely, the syllable tier denoted by the symbol (σ), the CV tier denoted by C and V, and the segmental tier denoted by phonetic representation. The tiers are connected using association lines, as exemplified below:

(16)

	MSA		Kiswahili	Kiswahili Gloss
a.	/baraka/	>	/baraka/	blessing
b.	/ ħika:ja/	>	/ hɛkaja/	a tale/fable/legend



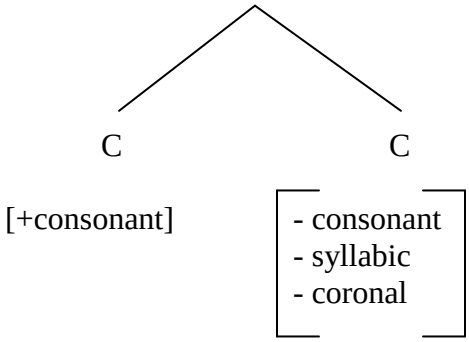
Our data is analysed using the model having the three tiers as shown in (16). The model shows the syllables of the SW on the left side, and the syllables of the LW on the right side. The symbol > is used to indicate that the change is occurring from MSA to Kiswahili. Therefore, in (16), the SW in MSA changes to the LW in Kiswahili.

1.9.3.2 Core Syllables

Core syllables are the main syllable structures found in a language as constrained by its phonotactic conditions. Each language has a selection of core syllables by applying one or both of the rules described in 1.9.2.2. Kiswahili has the core syllables CV, V, CVC and VC by applying both rules. MSA's core syllables are CV and CVC by applying rule (ii)

only. Consonant and vowel clusters are also part of core syllables of a language. The clusters are governed by PSSCs and NSSCs of a language. MSA permits both consonant and vowel clusters in final and medial positions as observed in the syllables CVCC, CVː and CVːC. Kiswahili permits consonant clusters only at the initial position as observed in the syllables CCV and CCCV. This study applies the positive and negative syllable structure conditions to generate well-formed consonant clusters in Kiswahili words of Bantu origin as well as the loanwords. For example, some of the PSSCs in Kiswahili words of Bantu origin can be summarized as follows:

(17)

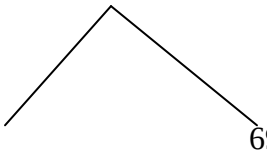


is admissible

This condition permits consonant clusters of pw-, bw-, mw-, tw-, sw-, tʃw-, ɲw-, kw- and gw-. The consonant clusters described by the rule in (17) are found in Kiswahili words of Bantu origin, for example, *pwani* (coast), *bwawa* (dam), *mwenge* (torch), *twanga* (to pound), *swara* (gazelle), *kunywa* (to drink), *machweo* (sunset), *kwapa* (armpit) and *gwanda* (calico garment).

In Kiswahili loanwords, the PSSCs can be summarized by the rule:

(18)



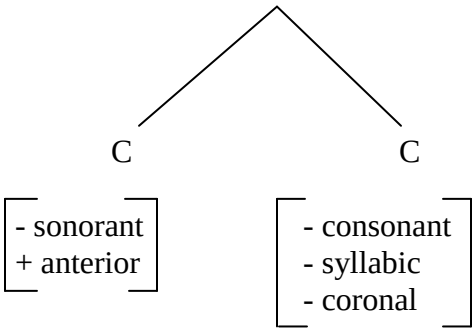
C C is admissible

[+consonant] [- consonant, - syllabic, + coronal]

This condition permits consonant cluster of fj- in Kiswahili loanwords such as *afya* (health).

Some of the NSSCs in Kiswahili words of Bantu origin can be summarized by the rule:

(19)

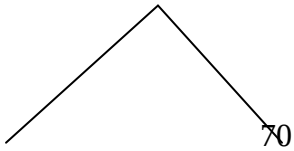


is inadmissible

This condition excludes consonant cluster of fw- in Kiswahili words of Bantu origin. For instance, the word *fwata** is not permited; instead *fuata* (to follow) is permitted in Kiswahili.

In Kiswahili loanwords, the following NSSC rule applies:

(20)



C C is inadmissible

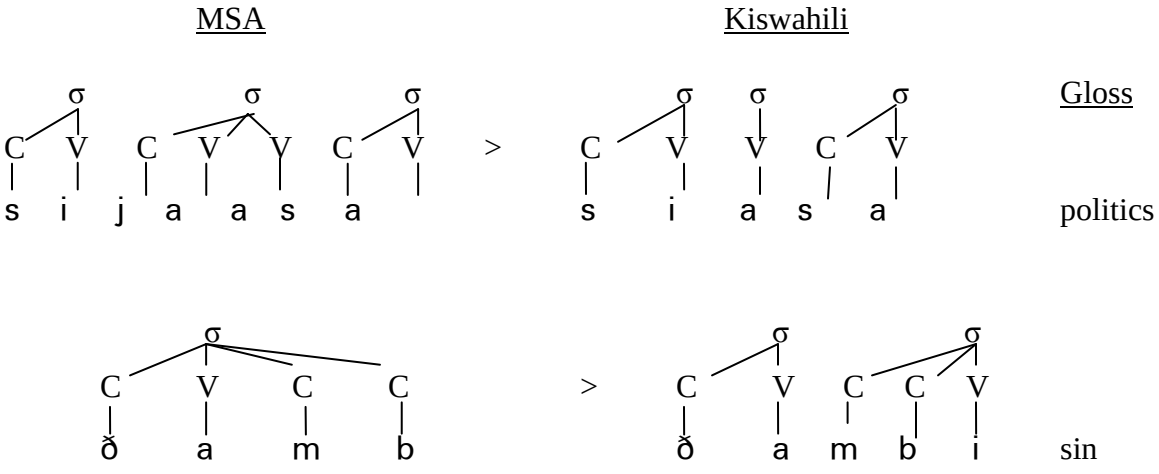
[+ consonant] [- consonant, - syllabic, - coronal]

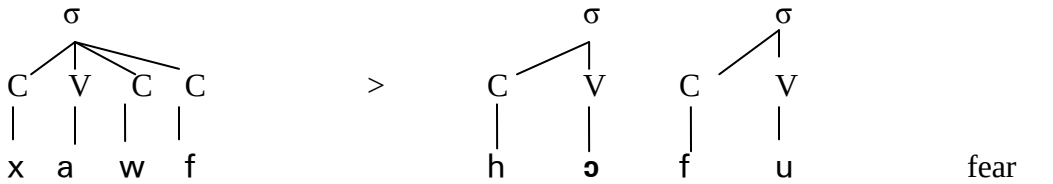
This condition excludes consonant cluster of fw- in Kiswahili loanwords. For instance, *fwarakana** instead of *farakana* (to be estranged/parted) is impermissible in Kiswahili.

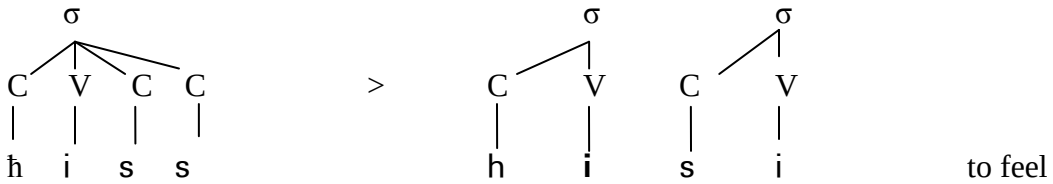
1.9.3.3 Core Syllable Associations

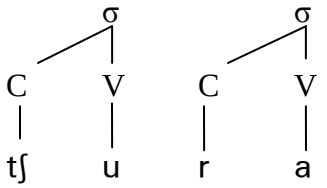
This study applies the universal core syllable associations to link elements of the CV tier and elements of the segmental tier. The syllabic segments are dominated by V elements while the non-syllabic segments are dominated by C elements. We acknowledge that glides can be categorized as G elements as it happens in other theories such as NGP. However, in this study, we opt to categorize glides as C elements given that they function as non-syllabic segments. Syllabic nasals are categorized as V elements because they function as syllable nucleus. We use the one-to-one core syllable association between CV elements and the segments. The segments may be single segments, or complex segments such as affricates, geminate consonants and long vowels. For example:

(21)







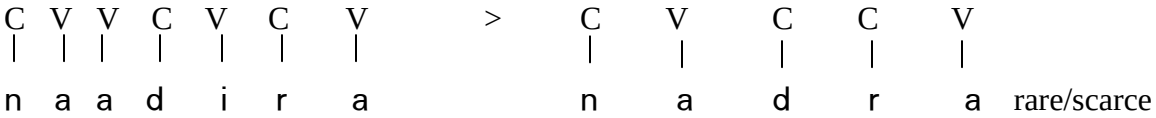


1.9.3.4 Core Syllable Division

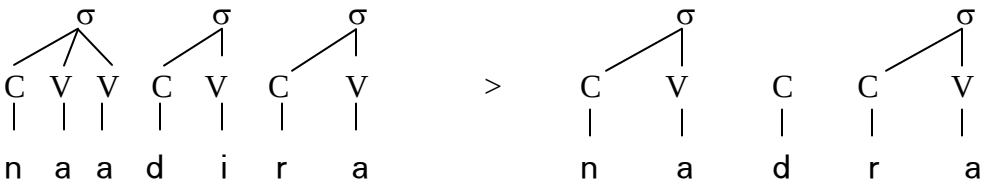
Core syllable division principle of this theory provides the guideline on the syllabification of words in languages. It stipulates the procedures of marking syllable boundaries in words as constrained by the Onset First Principle. In this study, we apply the Onset First Principle in generating well-formed syllables of Kiswahili data. The principle is used to mark syllable boundaries of the data using the algorithm in (14) as demonstrated below in the Kiswahili loanword '*nadra*':

(22)

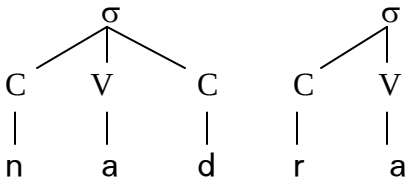
	MSA	KISWAHILI	
Step 1			Gloss
	σ σ σ	σ σ	



Step 2



Step 3



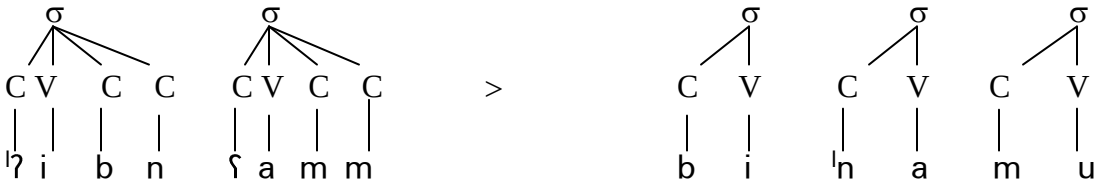
1.9.3.5 Syllable Transformations

Syllable transformations principle stipulates that there are phonological processes that occur, thus affecting the syllable structure of the words involved. The syllable transformations affect the three tiers of the syllable. In this study, we analyse phonological operations on the syllable, CV and segmental tiers of Kiswahili loanwords. We treat the syllable structure of SW as ill-formed with respect to Kiswahili syllable structure. Thus, the processes occurring on the loanwords are aimed at realizing the well-formed syllable structures in Kiswahili. These processes are discussed in detail in Chapters 3 and 4. The Resyllabification Convention in (15) is applied as prompted by phonological processes on the loanwords, for example:

(23)

MSA Kiswahili

/ ʔibn ʕamm / > / binamu/



In 23, syllable transformations have taken place as follows: loss of two association lines between the syllable tier and the CV tier; in the segmental tier, deletion of glottal stop /ʔ/, pharyngeal fricative /ʕ/ and bilabial nasal consonant /m/; metathesis from i-b to b-i; and insertion of high back vowel /u/. In the CV tier, the syllable CVCC has been transformed to CV and, therefore, the heavy syllables have been transformed to light syllables. At the syllable tier, the number of syllables has increased from 2 in the sourceword to 3 each having a C and V slot in the loanword. Hence, in this study the principles of well-formed expressions, PSSCs and NSSCs, core syllable division and syllable transformations are used as exemplified above.

1.9.4 Distinctive Feature Perspective

Distinctive Feature (DF) theory was developed by Chomsky & Halle in the Sound Pattern of English (1968). According to Hyman (1975:25), phonetic features are ultimately the factors responsible for the way phonological systems function. DF is a theory of phonetic features that are used in phonological analysis of languages. The distinctive features have two functions, namely, a) to capture the phonological contrasts of languages, and b) to

describe the phonetic content of segments derived by phonological rules as well as underlying segments (Hyman, 1975:42). The features in DF are mostly ariculatory, but there are prosodic features as well. In this study, we analyse phonological processes occurring on Kiswahili loanwords entering the language from MSA. The phonological processes take place on the three tiers of our model, that is, the syllable tier, the CV tier and segmental tier. In order to capture the phonological contrasts of the segment, DF uses a binary system of distinctive features. As such, the sign (+) indicates the presence of a feature, while the sign (–) indicates the absence of a feature. When analyzing phonological processes in the segmental tier, we need to use DF perspective in order to explain the motivation of the phonological processes on Kiswahili loanwords in terms of phonetic features.

1.10 Hypotheses

The hypotheses for this study are as follows:-

i) Some of the Kiswahili syllable structures are similar to MSA syllable structures while some syllable structures are not similar.

ii) Loanwords borrowed from MSA are adapted to conform to Kiswahili syllable structures.

iii) Some loanwords are adopted into Kiswahili with MSA syllable structures.

iv) Kiswahili phonology is significantly affected by loanwords from MSA.

1.11 Methodology

In this section, we explain how we have gathered and analysed our data for purposes of this study. Our methodology is divided into two stages, that is, Data collection and Data analysis.

1.11.1 Data Collection

This study analyses the syllable structure of Kiswahili words of Bantu origin as well as Kiswahili loanwords borrowed from MSA. Since syllables are found in the context of words, we purposed to collect words from texts in the library and from speakers in the field. In the library, we have selected Zawawi (1979), Bosha (1993) and (1994), Almabrok (2004) which have investigated on Kiswahili loanwords from Arabic. In addition, we identified loanwords borrowed from Arabic in two Standard Kiswahili dictionaries namely, *Kamusi ya Kiswahili Sanifu* by TUKI (1981) and *Kamusi ya Kiswahili-Kiingereza* by TUKI (2001). Since we purposed to collect as many loanwords as possible found in Kiswahili from the texts, we have made a list of 242 Kiswahili loanwords borrowed from Arabic. This list constitutes CORPUS A of our data (see Appendix A). We have compiled another list of 235 Kiswahili words of Bantu origin from *Kamusi ya Kiswahili Sanifu* authored by TUKI (1981) and from books that are written in Kiswahili. This list constitutes CORPUS B of our data (see Appendix B). From the library, we have collected a total of 477 words to be part of our data.

In our field data collection, we employed observation method. We found it necessary to collect words from the field so as to get primary data as used by Kiswahili speakers. We have compiled a list of 84 Kiswahili loanwords as they were ordinarily used by people in public fora such as meetings, schools, broadcasting media houses and colleges. This list

constitutes CORPUS C of our data (See Appendix C). Furthermore, we have compiled another list of 239 Kiswahili words of Bantu origin as they were ordinarily used by people in public fora such as meetings, schools, broadcasting media houses and colleges. This list constitutes CORPUS D of our data (See Appendix D). In the field, we have gathered a total of 323 words to be part of our data. The four lists are categorized into two sets: first, is a set of Kiswahili loanwords in CORPUS A and C; and second, a set of Kiswahili words of Bantu origin in CORPUS B and D. All the words (800 in total) in the four lists have been vetted by Kiswahili and MSA experts in order to confirm that they are Kiswahili words of Bantu origin or loanwords from MSA. The four lists presented to the informants are found in appendices A, B, C and D.

We have identified loanwords on the basis of their structure and etymology because borrowed words often have foreign syllable structures and segments, as well as foreign origin and history. Loanwords often represent new cultural concepts that are not in the RL. Thus, we have identified some loanwords on cultural basis. That is, words which represented Arabic or Islamic concepts are considered to be possible loanwords in Kiswahili. After identifying the loanwords, we confirmed with MSA informants that the words are found in MSA. Moreover, Kiswahili informants confirmed for us the loanwords borrowed from Arabic. The words which were rejected by the informants as loanwords from Arabic were removed from the lists. Likewise, Kiswahili words of Bantu origin have been identified on the basis of their Bantu syllable structures, segments and etymology. Many of these words represented natural or universal concepts that are found in basically all languages. In addition, many of the Kiswahili words of Bantu origin have

semblance with words in other Bantu languages. Thus, we identified them on the basis of their structure and origin with respect to Bantu languages.

Our sample design was purposive. The criterion used to select our informants was the fact that the informants must be Kiswahili and MSA speakers. The MSA interviewees had MSA competence. A number of MSA informants were our colleagues and students in the Arabic section of the Department of Linguistics and Languages, University of Nairobi. Other MSA informants were located in Mombasa and Malindi where MSA is predominantly used for religious purposes. These informants comprised *madrassa* teachers who daily use MSA in teaching Islamic religion. The Kiswahili interviewees also had Kiswahili competence. They comprised our colleagues and students in the Department of Kiswahili, University of Nairobi.

Our sample is stratified into two groups of Kiswahili and MSA. The Kiswahili and MSA strata have 8 informants each. It is our opinion that this being a qualitative research, 8 informants from each stratum provide adequate data that is representative of Kiswahili and MSA populations. This is because in linguistics, even one informant is sufficient to provide enough data for linguistic analysis. However, we opted for eight informants for each stratum to ensure that we obtain credible data.

We employed the focused interview method to collect our data from the Kiswahili and MSA informants. In so doing, we asked each of the eight Kiswahili informants to articulate in Kiswahili the words listed in CORPUS A, B, C and D (see Appendix A, B, C and D). This was done to identify and confirm the segments and syllable structures of

Kiswahili words of Bantu origin and Kiswahili loanwords. Then, we asked each of the eight MSA informants to articulate in MSA the words listed in CORPUS A and C (see Appendix A and C). We needed this data for purposes of establishing the segments and syllable structures of MSA sourcewords. We tape-recorded the informants' utterances as they produced the words using an IC recorder. The tape recorded utterances of the informants are the data that we analysed in this study. All the Kiswahili and MSA informants gave uniform utterances which showed an agreement on the segments and syllable structures of the words articulated. We did not ask the informants about syllable structures of the words, given that we were only seeking for their articulations for us to analyse the syllables as linguists.

1.11.2 Data Analysis

We apply the Generative CV-Phonology theory in the data analysis of this study. Using our competence in Kiswahili, we have transcribed the tape recorded Kiswahili data into phonetic symbols. We have also engaged competent MSA speakers and phonologists to phonemically transcribe MSA data into phonetic symbols. Having done the transcription in phonetic symbols, we marked the syllable boundaries of both Kiswahili and MSA data. We were guided by the theory in determining the syllable boundaries of our data. The Onset First Principle, the PSSCs and NSSCs assisted us to determine syllable structures that seemed ambisyllabic. The transcription and marking of syllable boundaries of the data were counter-checked and confirmed by other Kiswahili and MSA experts. We then grouped the transcribed MSA and Kiswahili data into monosyllabic, disyllabic, trisyllabic, four syllabic and five syllabic words.

Using the Onset First Principle, we have drawn the syllable structure of each word in the data. The syllables were first drawn for Kiswahili and MSA words separately. By drawing the syllable structures of the data, we have identified Kiswahili and MSA syllable structures. This has been done for the purpose of comparing and contrasting Kiswahili and MSA syllables focusing on the segments, syllable structure, syllable weight and stress placement.

The syllables were then drawn for MSA SWs and Kiswahili LWs. This was done to compare the syllable structure and segments of MSA sourecwords and Kiswahili LWs with focus on segments, syllable structure, syllable weight and stress placement. These syllables have been used to analyse the changes taking place from the MSA sourcewords to Kiswahili loanwords. Last, we have explained the syllable transformations and phonological processes that take place in the MSA sourcewords to realize Kiswahili LWs. It is from these syllables that we are able to observe syllable structure adaptation and adoption in Kiswahili loanwords. Subsequently, we highlighted MSA's impact on Kiswahili phonology through the loanwords. Finally, we have drawn conclusions based on the findings of our study.

ENDNOTES

[1] There are also native Swahili speakers who speak Kingwana, a Swahili dialect spoken in Congo.

[2] TUKI is currently known as Taasisi ya Taaluma za Kiswahili (TATAKI) based in Dar es Salam, Tanzania.

CHAPTER TWO

KISWAHILI AND MSA SYLLABLE STRUCTURES

2.0 Introduction

In this chapter we preview the phonemic inventories of both Kiswahili and MSA. We also examine Kiswahili and MSA syllables with a view to make comparisons on their segments, syllable structures and stress placement. We demonstrate that the only major similarity between Kiswahili and MSA is CV syllable, while there are differences between the two languages in terms of segments and syllable structures. The similarity and differences in the two languages are the attributes that play a crucial role in the segmental and syllable structure adaptation of loanwords into Kiswahili, hence the need to analyze the sound systems of the two languages.

2.1 Kiswahili Phonemic Inventory

In this section we discuss Kiswahili and MSA phonemic inventories. Haugen (1950) suggests that it is only a complete analysis of the sound system and the sequences in which sounds appear that could give us grounds for predicting which sounds a speaker would be likely to substitute in each given case. On this ground, it is necessary to

describe the phonemic inventories of the languages under study. We need to understand Kiswahili and MSA phonological systems, which have been used in the analysis of our data. This enables us to see which features are transferred from MSA to Kiswahili, and those which are not.

Diverse Kiswahili phonemic inventories have been given by several linguists as has been observed in Chapter One. This is partly because of the foreign segments found in the language. A section of linguists assert to the adoption of certain foreign segments, whereas others do not. In the sub-section below, we analyse Kiswahili phonemic inventory with a view to state how many segments there are in Kiswahili.

2.1.1 Kiswahili Vowels

A vowel is a segment which is articulated without any constriction or obstruction of the airstream in the oral cavity (Ladefoged, 2000:12). The phonological parameters used to categorize vowels are: tongue height, tongue position and lip shape (Abercrombie, 1967:56-58; Ladefoged, 2000:13). The tongue height parameter is concerned with raising part of the tongue involved when producing a vowel sound. Thus, in terms of tongue height, a vowel can be [+ high], [+ low] or [- high, - low]. The tongue position parameter shows the point along the tongue that is involved in the articulation of the vowel sound. There are three points with regard to this parameter: the front part of the tongue including the tip, the middle of the tongue which normally involves the larger part of the tongue blade and, the back of the tongue which involves the back part and the root of the tongue in articulating a vowel sound. Therefore, in terms of tongue position, a vowel can be [+back], [-back] or [-back,-front]. The third parameter is the shape of lips when

producing a vowel sound. There are only two shapes that can be realized in the articulation of vowels: lip rounding and lip spreading. When a vowel is produced with the rounding of lips it is said to be [+round]; when there is spreading of lips the vowel is said to be [-round].

All vowels are syllabic because they function as syllable nuclei. This means that in the syllable, vowels do not occupy the onset and coda since they are the most sonorous of all segments.

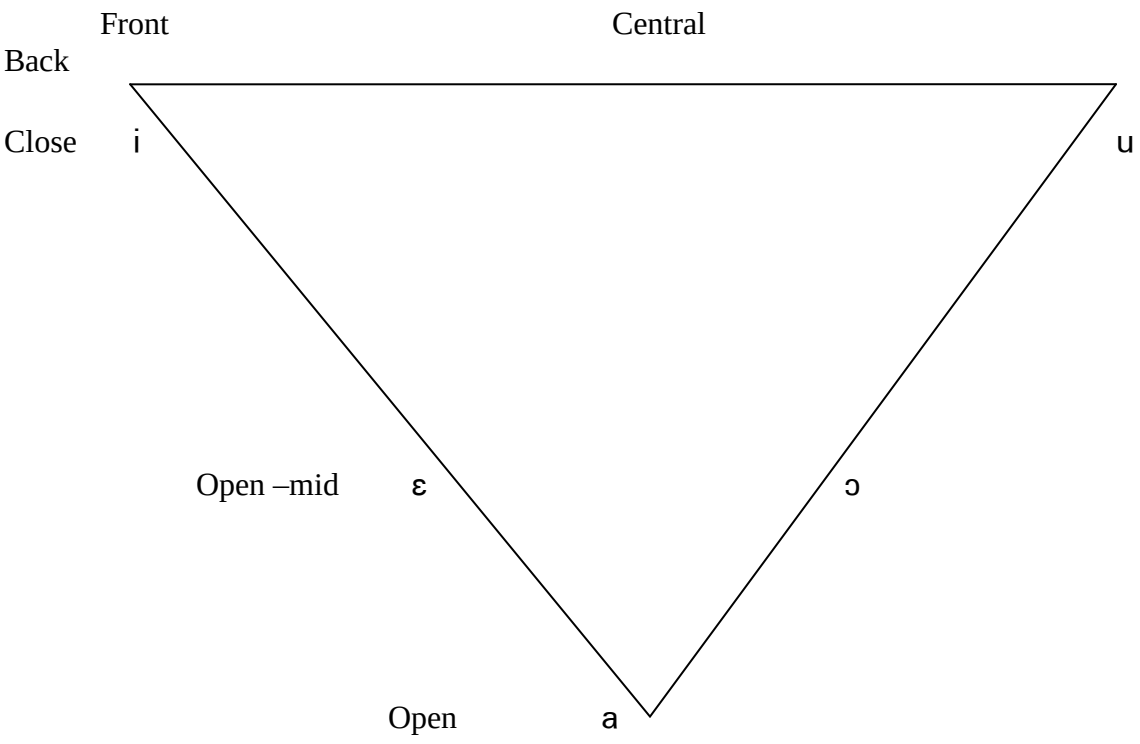
In terms of vowels, Bantu languages are grouped into two: in one group are languages with five vowels [a, ɛ, ɔ, i, u], and in the second group are those with seven vowels [a, ɛ, ɔ, e, o, i, u] (Guthrie, 1948:45). Kiswahili falls in the first group given that is has five vowels. Aswani (1995:43-44; 2001:54) states that Kiswahili vowels are: /a/, /e/, /i/, /o/ and /u/. Though we agree with the number of vowels in Kiswahili, we have a different view concerning the mid vowels /e/ and /o/. In phonology, the various mid vowels as given in the IPA (2005) chart include /e/, /ɛ/, /ə/, /ʌ/, /ɜ/, /ɐ/, /o/ and /ɔ/. In our view, Kiswahili does not have /e/ and /o/ as its mid vowels. Rather, Kiswahili mid vowels are /ɛ/ and /ɔ/ as found in words such as /ɛmbɛ/ for *mango* and /ɔa/ which means to marry in the case of a man (Mgullu, 1999:66; Kihore et al, 2001:21; Iribemwangi, 2010:37; Matinde, 2012:72). The difference between these two pairs of vowels is in the tongue height involved during their articulation. The first set /e/ and /o/, is produced with the

blade of the tongue raised higher than in the production of the latter set /ɛ/ and /ɔ/. As such /e/ and /o/ are [+tense] vowels while /ɛ/ and /ɔ/ are [+lax] vowels.

The five Kiswahili vowels are thus /a/, /ɛ/, /ɔ/, /i/ and /u/. /i/ and /u/ are [+high] vowels. The vowels /ɛ/ and /ɔ/ are [- high, - low] since they are articulated with the tongue raised vertically halfway from its neutral position in the oral cavity. /a/ is the only [+low] vowel. In terms of tongue position, /u/ and /ɔ/ are [+back] vowels which when produced, the body of the tongue retracts backwards from its neutral position. /i/, /ɛ/ and /a/ are [-back] vowels because they are produced with the tongue body pushed forward within the oral cavity. As regards the lip shape parameter, /u/, and /ɔ/ are round vowels which are articulated with the narrowing of the lip orifice, making the lips to form a round shape. This is because the two vowels have the feature [+back]. /i/, /ɛ/ and /a/, being [-back] vowels are produced with the spreading of the lips rather than rounding, therefore they are not round vowels. Akidah (2013:4) says that Kiswahili has two diphthongs, namely, /ai/ and /au/. According to Ladefoged (2000:28), diphthongs involve the movement from one vowel to another within a single syllable. This means that diphthongs are articulated as a single segment. In our view, /ai/ and /au/ are not diphthongs in Kiswahili, since they do not portray a change in quality within a syllable, rather, they are articulated in separate syllables. The description of Kiswahili vowels can be summarized as follows:

Fig. 1

KISWAHILI VOWELS



Their distinctive features of Kiswahili vowels are given as follows:

(24)

/a/	/ɛ/	/ɔ/
+syllabic	+ syllabic	+ syllabic
+low	- high	- high
- back	- low	- low
- round	- back	+ back

— — __ - round __ __ + round __

/i/

+ syllabic
+ high
- back
- round

/u/

+ syllabic
+ high
+ back
+ round

As was stated in 1.9.1.3, all vowels are classified as syllabic within the Generative CV-Phonology model. Therefore, all the Kiswahili vowels are [+syllabic], given that they occupy the nuclear position of the syllable.

2.1.2 Kiswahili Consonants

A consonant is a segment which is articulated with a drastic stricture of the airstream in the vocal tract (Ladefoged, 2000:5). Four main parameters are used in considering the consonantal segment. They include: the place of articulation, manner of articulation, state of glottis and airstream mechanism (Abercrombie, 1967:44-50; Ladefoged, 2000:12). The place of articulation refers to the cavity features. According to Katamba (1989:43-45), cavity features specify where in the vocal tract modifications of the airstream take place in the production of particular sounds. The cavity features include [+ or – coronal], [+ or – anterior], [+ or – labial] and [+ or – distributed]. Specifically, the place of articulation involves the particular part of the oral tract that is involved in the production of the consonant. This is the place where that constriction of airstream takes place by either

narrowing or completely blocking the passage before its release. With regard to the place of articulation, consonants can be bilabial, labio-dental, inter-dental, alveolar, post-alveolar, retroflex, palatal, velar, uvular, pharyngal or glottal (IPA, 2005).

The manner of articulation, which Katamba (1989:50-51) refers to as manner features, involves the kind of constriction the airstream undergoes in the production of the consonant. Manner features include [+ or – continuant], [+ or –lateral], [+ or –nasal], [+ or –strident] and [+ or –delayed release]. The airstream may be completely blocked before it is released, or slightly obstructed allowing it to pass through with friction. Thus, manner of articulation can produce a consonant which is a stop, a fricative, an affricate, a lateral, a trill or a glide.

The state of the glottis is a laryngeal feature which informs us of the resistance the airstream goes through on its way from the lungs towards the oral cavity. Depending on the presence or absence of that resistance caused by the vocal cords, a consonant can either be voiced or voiceless. A voiced segment is the one that experiences the airstream resistance, while a voiceless one does not. According to O'connor (1973: 25-30) and Ladefoged (2000:122-123), other laryngeal features include breathy voice or murmur (whisper) and creaky voice (friction).

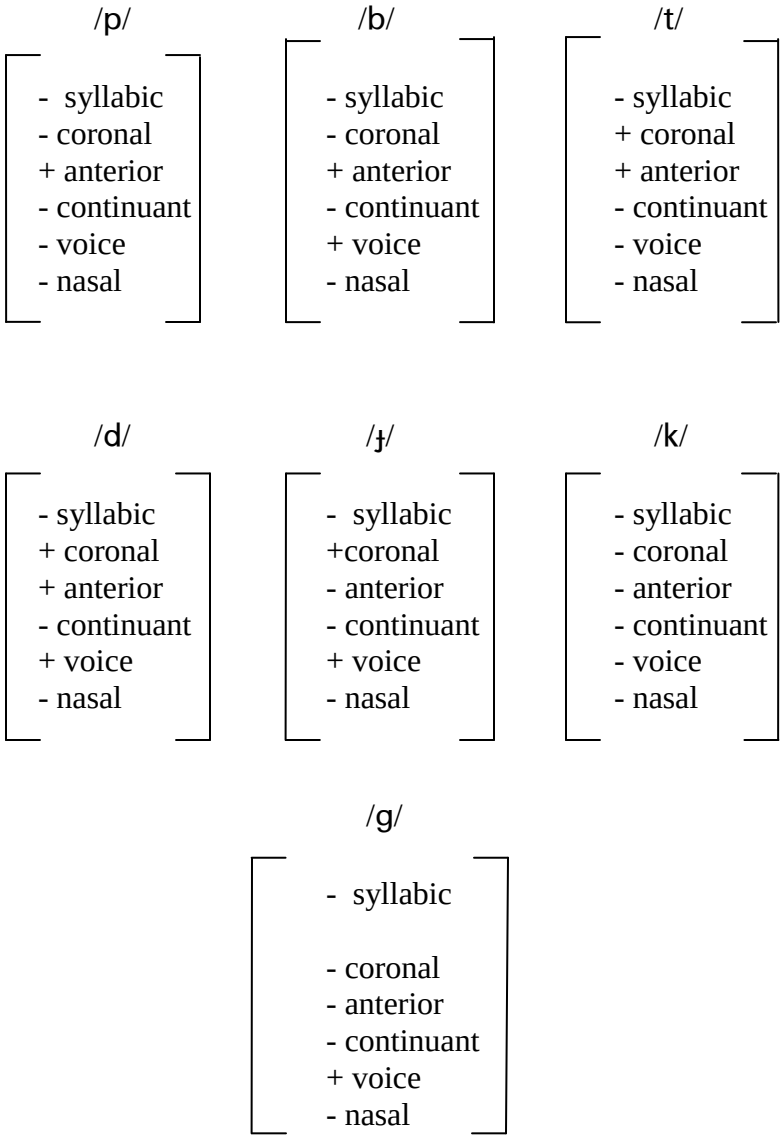
The airstream mechanism concerns the tract through which the airstream passes in the production of a consonant. There are two cavities that can be used to articulate a consonant. One is the oral cavity whereby the airstream from the lungs passes through the oral cavity only, giving the oral segments. Second is a situation where the airstream

passes through both the oral and nasal cavities simultaneously, thus, giving nasal segments. According to O'connor (1973:47), a nasal consonant is produced when there is no velic closure, and so the airstream passes through the nasal cavity as well. This observation is contrary to linguists such as Sethi & Dhamija (1992:21), who hold that in the production of nasals, the oral passage is closed while the nasal passage remains open. This implies that nasal consonants are articulated when the airstream passes only through the nasal cavity. In our opinion, a consonant cannot be articulated when the airstream does not pass through the oral cavity. Referring to the definition of consonants, we have stated that a consonant production involves the constriction or obstruction of the airstream mechanism, which takes place in the oral cavity. If the airstream passes through the nasal cavity only, then there would be no obstruction of the airstream to produce the intended consonant. Thus, the airstream has to partly pass through the nasal cavity and the oral cavity to produce nasal consonants.

2.1.2.1 Stops

Stops are articulated with total closure followed by a sudden release of the airstream (Ladefoged, 2000: 8). Due to this airstream closure, they all bear the feature [-continuant]. The stops found in Kiswahili are /p/, /b/, /t/, /d/, /ɟ/, /k/ and /g/. Within the Generative CV-Phonology model, these stops are classified as nonsyllabic given that they do not occupy nuclear position of the syllable. In accordance with the four parameters, the distinctive features of Kiswahili stops are as follows:

(25)



2.1.2.2 Fricatives

Fricatives are produced with a slight obstruction of the airstream without completely blocking it (Ladefoged, 2000:10). Since the airstream is not completely blocked, all of

them have the feature [+continuant]. Fricatives are also nonsyllabic from the perspective of Generative CV-Phonology model. In Kiswahili, fricatives comprise /f/, /v/, /s/, /z/, /ʃ/, /h/, /ð/, /θ/ and /ɤ/. Of these, the last three were adopted from MSA through loanwords. The distinctive features of Kiswahili fricatives are shown below:

(26)

/f/

- syllabic
- coronal
+ anterior
+ continuant
- voice
- nasal

/v/

- syllabic
- coronal
+ anterior
+ continuant
+ voice
- nasal

/s/

- syllabic
+ coronal
+ anterior
+ continuant
- voice
- nasal

/z/

- syllabic
+ coronal
+ anterior
+ continuant
+ voice
- nasal

/ʃ/

- syllabic
+ coronal
- anterior
+ continuant
- voice
- nasal

/h/

- syllabic
- coronal
- anterior
+ continuant
- voice
- nasal

/ð/

- syllabic
+ coronal
+ anterior
+continuant
+ voice
- nasal

/θ/

- syllabic
+ coronal
+ anterior
+continuant
- voice
- nasal

/ɤ/

- syllabic
- coronal
- anterior
+ continuant
+ voice
- nasal

2.1.2.3 Affricates

Affricates are obstruents produced with an initial complete closure, followed by a gradual release of the airstream (Ladefoged, 2000:11). They are non continuants given that the airstream is initially blocked before it is released. According to Katamba (1989: 51), it is the feature [+ or – delayed release] that distinguishes stops from affricates. In Kiswahili, there is only one affricate /tʃ/. Within the Generative CV-Phonology model, affricates are classified as nonsyllabic. We note that MSA has no affricates. The distinctive features of Kiswahili affricate are:

(27)

/tʃ/

- syllabic
+ coronal
- anterior
- continuant
+ del. release
- voice
- nasal

2.1.2.4 Nasals

It has been stated in 2.2.2 that nasals are articulated with the airstream passing through both the oral and nasal cavities concurrently (Ladefoged, 2000:8). Nasals are non-continuants because the airstream is initially blocked before it is suddenly released in the oral cavity. The Kiswahili nasal segments are /m/, /n/, /ɲ/ and /ŋ/. In accordance with the Chomskian theory, it is syllabic nasals are treated as [+syllabic]. Also, according to Generative CV-Phonology model, only the syllabic nasals that are classified as

[+syllabic] in this theory. As such, all the Kiswahili nasals /m/, /n/, /ɲ/ and /ŋ/ are syllabic because they function as syllable nuclei. This can be attested in Kiswahili words such as [mtu] for *person*, [nta] for *wax,* [ɲ tʃi] for *country* and /ŋgɛ/ for *scorpion*. The distinctive features of Kiswahili nasal consonants are:

(28)

/m/	/n/
+ syllabic	+ syllabic
- coronal	+ coronal
+ anterior	+ anterior
- continuant	- continuant
+ voice	+ voice
+ nasal	+ nasal

/ɲ/	/ŋ/
+ syllabic	- syllabic
+ coronal	- coronal
- anterior	- anterior
- continuant	- contintuant
+voice	+ voice
+nasal	+ nasal

2.1.2.5 Liquids

Liquids are produced with a slight obstruction of the airstream which is then released to pass through the sides of the tongue blade. In Kiswahili, there is the lateral /l/ and the trill /r/. In the Chomskian theory, syllabic liquids are classified as [+syllabic] (Ladefoged, 2000:215), given that they function as syllable nuclei in a number of languages, for example, in the English word /teɪ-bl/. Even then, liquids are not [+syllabic] in Kiswahili

because within the Generative CV-Phonology, they do not constitute a syllable nuclear in the said language. The distinctive features of Kiswahili liquids are as follows:

(29)

/l/

- syllabic
+ coronal
+ anterior
+ continuant
+ voice
- nasal
+ lateral

/r/

- syllabic
+ coronal
+ anterior
+ continuant
+ voice
- nasal
- lateral

2.1.2.6 Glides

Glides are articulated with a stricture of open approximation involving no closure, friction or contact of the tongue and lips (Abercrombie, 1967:79; Ladefoged, 2000:11). Phonetically, glides are similar to vowels given that they are articulated without any obstruction of the airstream. Phonologically, glides are treated as consonants since they function in language as syllable margins. Within the Chomskian perspective and Generative CV-Phonology theory, glides cannot function as syllable nuclear without a vowel. Kiswahili glides are /w/ and /j/, whose distinctive features are:

(30)

/w/

- syllabic
- coronal
+ anterior
+ continuant
+ voice
- nasal

/j/

- syllabic
+ coronal
- anterior
+ continuant
+ voice
- nasal

In summary, Kiswahili has a total of thirty segments comprising five vowels and twenty five consonants. This phonemic inventory is inclusive of borrowed segments from MSA.

2.1.3 Kiswahili Distinctive Features

Having identified Kiswahili segments, we also outline the phonetic attributes of the segments using the Chomskian distinctive features. This is because the Chomskian distinctive features have been used in data analysis in the subsequent chapters of this study. The Chomskian distinctive features are in seven categories, that is:

a) Major class features

b) Cavity features

c) Tongue body features

d) Tongue root features

e) Laryngeal features

f) Manner features

g) Prosodic features.

The Major class features define the major classes of sounds relevant in phonological analysis. They include: 1) consonantal v/s non consonantal

2) syllabic v/s non syllabic

3) sonorant v/s non sonorant

In this study, the first two features have been relevant in segment analysis. When necessary, the feature sonorant has also been applicable. In Kiswahili, [+consonantal] segments are /p, b, t, d, k, g, tʃ, ɟ, f, v, s, z, ʃ, θ, ð, ɤ, m, n, ɲ, ŋ, l, r/. [- consonantal]

segments are /a, ɛ, ɔ, i, u, w, j/. [+syllabic] segments in Kiswahili are /a, ɛ, ɔ, i, u, m, n, ɲ /. The rest are [- syllabic]. Kiswahili [+sonorant] segments are /a, ɛ, ɔ, i, u, l, r, m, n, ɲ /. [- sonorant] segments are /p, b, t, d, k, g, f, v, s, z, ʃ, θ, ð, ɤ, tʃ, ɟ, w, j /.

Cavity features are concerned with the place of articulation. They include:

1) coronal v/s non coronal
2) anterior v/s non anterior
3) labial v/s non labial
4) distributed v/s non distributed

In this study, the first three features have been applied in segment analysis. In Kiswahili, [+coronal] segments are /θ, ð, s, z, t, d, l, r, n, ʃ, tʃ, ɟ, j, ɲ /; Kiswahili [-coronal] segments are /p, b, m, w, f, v, k, g, ɤ, ŋ, h /. [+anterior] segments in Kiswahili are /p, b, m, f, v, θ, ð, s, z, l, r, t, d, n, w /; while [-anterior] segments are /tʃ, ɟ, j, ʃ, ɲ, k, g, ɤ, ŋ, h /. Kiswahili [+labial] segments include /p, b, m, f, v, u, ɔ, w /; and the rest of Kiswahili segments are [-labial].

Tongue body features are concerned with the position of the tongue body during the production of a segment from its neutral position. The features include:

1) High v/s nonhigh
2) Low v/s nonlow
3) Back v/s nonback
4) Velar suction v/s nonvelar suction

In this study, the first three features have been applied. In Kiswahili [+high] segments include /i, u, w, j, ʃ, tʃ, ɟ, k, g, ɤ/; the other segments are [-high]. The only Kiswahili [+low] segment is /a/, while /ɛ/ and /ɔ/ are [-high, -low]. Kiswahili [+back] segments include /k, g, ŋ, ɤ, u, ɔ/. [-back] Kiswahili segments are /p, b, m, t, d, tʃ, j, w, a, i, ɛ /.

Tongue root features involve the retracting of the tongue or pushing it forward in the production of a segment. The features include:

1) ATR v/s non ATR
2) Tense v/s lax

The second feature has been applicable in this study. Kiswahili [+tense] vowels are /i /and /u/, while [+lax] vowels are /a, ɛ, ɔ/.

Laryngeal features are concerned with the position of the vocal cords in the production of a segment. The features include:

1) Spread glottis v/s nonspread glottis
2) Constricted glottis v/s nonconstricted glottis
3) Voiced v/s voiceless

The last feature only has been applied in this study. In Kiswahili, [+voiced] segments are /b, d, g, ɤ, ð, v, z, ɟ, m, n, ɲ, ŋ, l, r, w, j, i, a, ɛ, ɔ, u/. The rest of the segments in Kiswahili are [-voiced].

Manner features are concerned with the way the airstream mechanism is obstructed in the production of a consonant. The features include:

1) Continuant v/s noncontinuant
2) Lateral v/s nonlateral
3) Nasal v/s non-nasal
4) Delayed release v/s instantenous release
5) Strident v/s nonstrident

In this study, the first four features have been applied. Kiswahili [+continuant] consonants are /f, v, θ, ð, s, z, l, r, ʃ, j, w/; while [-continuant] consonants are /tʃ, ɟ, m, n, ɲ, ŋ, p, b, t, d, k, g/. Kiswahili [+lateral] consonants are /l, r/; the rest are [-lateral]. In Kiswahili, [+nasal] consonants include /m, n, ɲ, ŋ/; the other consonants are [-nasal]. The only [+delayed release] consonant in Kiswahili is /tʃ/. The rest of the consonants are [-delayed release].

Prosodic features are associated with units larger than a segment, for instance, a syllable or word. The features include:

1) Long v/s short
2) Stress v/s nonstress
3) Tone v/s nontone

In this study, the first two features have been applied. In Kiswahili, [+long] segments do not exist. Thus, all segments in Kiswahili are [-long]. In MSA, there are long or geminate

vowels and consonants. With regard to stress, a segment is [+stressed] depending on the position of its syllable in a word, in both Kiswahili and MSA. A summary of Kiswahili consonants is given in the table below:

Fig.2

KISWAHILI CONSONANTS

	Bilabial	Labio-dental	Dental	Alveo-lar	Post-alveolar	Retro-flex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d			ɟ	k g			
Nasal	m			n			ɲ	ŋ			
Affricate					tʃ						
Trill				r							
Fricative		f v	θ ð	s z	ʃ			ɤ			h
Approximant	w						j				
Lateral approximant				l							

*This table is adapted from IPA Revised (2005), with modifications.

2.2 MSA Phonemic Inventory

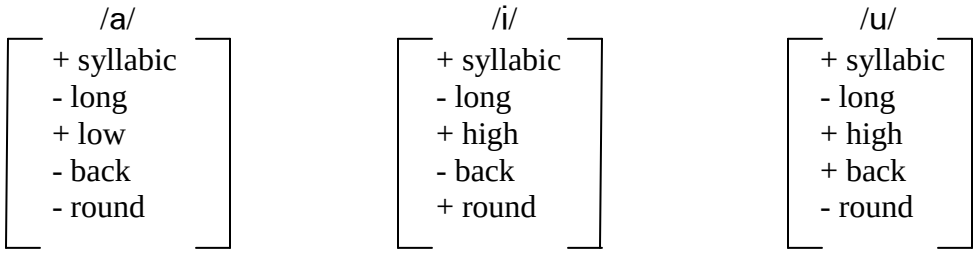
MSA has both vowel and consonant segments in its inventory. A number of these segments are similar to Kiswahili segments. However, there is a difference in some of the segments in terms of tongue height and length for the vowels, and place of articulation for the consonants.

2.2.1 MSA Vowels

MSA has three short vowels /a/, /i/ and /u/ (Akidah, 2012). Unlike Kiswahili, MSA does not have mid vowels. This is typical of Semitic languages like Aramaic and Amharic

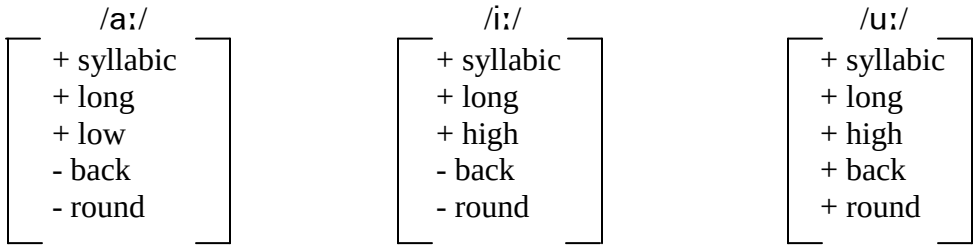
which have the three vowels only (Watson 2007). The distinctive features of MSA short vowels are:

(31)



Long vowels in MSA function as phonological phonemes. The three vowels given above have their long counterparts as /aː/, /iː/ and /uː/, respectively. Long vowels have an additional feature of length. Within the Generative CV-Phonology model, length is about the timing units of the C or V elements. Thus, the long vowels in MSA have two timing units (that is, V+V). The distinctive features of MSA long vowels are:

(32)



In addition to the single vowels, MSA also has diphthongs. Abercrombie (1967:60), Katamba (1989:12) and Ladefoged (2000:28), state that diphthongs are vowels whose quality changes during their production. Diphthongs are a combination of either two different vowels, or a vowel and a glide produced as one segment. English, for instance

has eight diphthongs made of vowels only: /ɑɪ/ as in *buy*, /eɪ/ as in *say*, /ɔɪ/ as in *toy*, /əʊ/ as in *so*, /ɑʊ/ as in *now*, /ɪə/ as in *hear*, /eə/ as in *pair* and /ʊə/ as in *poor*[1]. In our MSA data, we find diphthongs made of a vowel and glide /aj/ and /aw/ in words such as /ɬajʃ/, /ʃajtˁaːn/, /sˁawm/ and /mawlaː/. Therefore, we concur with Akidah (2012; 2013:4) that /aj/ and /aw/ are the MSA diphthongs. The distinctive features of MSA diphthongs are as follows:

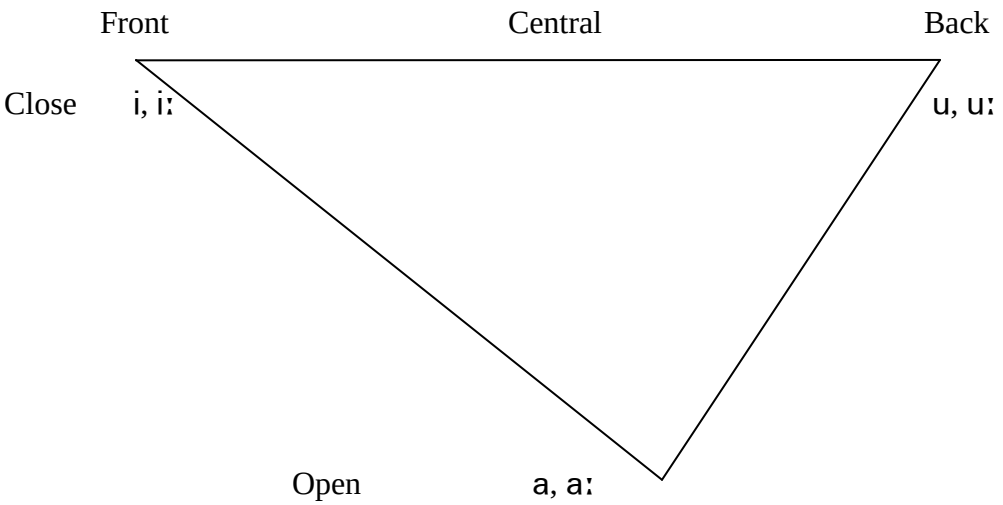
(33)

/aw/	/aj/
+ syllabic	+ syllabic
- long	- long
- high	- high
- back	- back
+ round	- round
+ tense	+ tense

In this study, we are of the view that, there are no diphthongs in Kiswahili, since we have not found any in our data, and it is not recorded in any literature. A summary of MSA vowels is provided in the chart below:

Fig.3

MSA VOWELS



2.2.2 MSA Consonants

MSA consonants include stops, fricatives, nasals, liquids and glides. Nineteen of them are similar to those of Kiswahili. However, there are nine MSA segments which have a different feature from Kiswahili ones.

2.2.2.1 Stops

MSA stops can be categorized into two; that is, emphatic stops and non-emphatic stops. The MSA stops are /b/, /t/, /tˤ/, /d/, /dˤ/, /k/, /q/ and /ʔ/. Of these, /tˤ/ and /dˤ/ are emphatic, while the rest are non-emphatic. IPA (1949:14) and Al-Ani (1970:44) refer to the emphatic consonants as pharyngealized, meaning that a velarised segment is different from a pharyngealized segment (Ladefoged, 2000:218-219). Here we need to also differentiate between the features pharyngeal and pharyngealized. Pharyngeal is a cavity

feature which involves the place of articulation. According to Abercrombie (1967:51), a pharyngeal segment is produced with the stricture of the airstream mechanism taking place between the back wall of the pharynx and the root of the tongue body. Thus, there are pharyngeal segments, for instance, the MSA fricative /ħ/. On the other hand, pharyngealisation occurs as a secondary articulation in the production of certain segments. Abercrombie (1967: 62) states that segment pharyngealisation takes place if the tongue is low in the mouth and retracted towards the back wall of the pharynx. This implies that a segment which is not pharyngeal can be pharyngealised. The pharyngealized segments are the emphatic segments. Pharyngeal feature is nonexistent in Kiswahili consonants, hence there are no such consonants in the language. Thus, /tˤ/, and /dˤ/ are the MSA pharyngealised stops. /ʔ/ is a glottal plosive which in many cases is not easily audible to the hearer, though the speaker is conscious that he is producing it (Akidah 2012:81). The distinctive features of MSA stops are as follows:

(34)

/b/	/t/	/ tˤ/
- syllabic	- syllabic	- syllabic
-coronal	+coronal	+ coronal
+anterior	+anterior	- anterior
- continuant	- continuant	- continuant
+ voice	- voice	- voice
- nasal	- nasal	- nasal
		+ pharyngeal

/ d /

- syllabic
+ coronal
+ anterior
- continuant
+ voice
- nasal

/dˤ/

- syllabic
+ coronal
- anterior
- continuant
+ voice
- nasal
+ pharyngeal

/k/

- syllabic
- coronal
- anterior
- continuant
- voice
- nasal

/q/

- syllabic
- coronal
- anterior
- continuant
- voice
- nasal
+ uvular

/ʔ/

- syllabic
- coronal
- anterior
- continuant
- voice
- nasal
+ glottal

2.2.2.2 Fricatives

MSA fricatives are also grouped into two, namely the emphatic fricatives and non-emphatic fricatives. MSA fricatives are /f/, /θ/, /ð/, /ðˤ/, /s/, /sˤ/, /z/, /ʃ/, /dʒ/, /x/, /ɤ/, /ʕ/, /ħ/ and /h/. As has been stated in 2.3.2.1, the emphatic segments are the pharyngealized segments. Therefore, the MSA pharyngealized fricatives are /ðˤ/ and /sˤ/; while the rest are not pharyngealized. /ʕ/ and /ħ/ are MSA voiced pharyngeal fricatives. The distinctive features of MSA fricatives are:

(35)

/f /

- syllabic
- coronal
+anterior
+ continuant
- voice
- nasal

/θ/

- syllabic
+ coronal
+anterior
+ continuant
- voice
- nasal

/ð/

- syllabic
+ coronal
+anterior
+ continuant
+ voice
- nasal

/ðˤ

- syllabic
+ coronal
- anterior
+ continuant
+ voice
- nasal
+ pharyngeal

/s/

- syllabic
+ coronal
+ anterior
+ continuant
- voice
- nasal

/sˤ /

- syllabic
+ coronal
- anterior
+ continuant
- voice
- nasal
+ pharyngeal

/z/

- syllabic
+ coronal
+ anterior
+ continuant
+ voice
- nasal

/ ʃ /

- syllabic
+ coronal
- anterior
+ continuant
- voice
- nasal

/ʤ/

- syllabic
+ coronal
- anterior
+ continuant
+ voice
- nasal

/x/

- syllabic
- coronal
- anterior
+ continuant
- voice
- nasal

/ ɤ /

- syllabic
- coronal
- anterior
+ continuant
+ voice
- nasal

/ ʕ /

- syllabic
- coronal
- anterior
+ continuant
+voice
- nasal

/ ħ /

- syllabic
- coronal
- anterior
+ continuant
- voice
- nasal
+ pharyngeal

/ h /

- syllabic
- coronal
- anterior
+ continuant
- voice
- nasal
+ glottal

2.2.2.3 Nasals

MSA has two nasals which are /m/ and /n/. In 2.2.2.4 it has been explained that Kiswahili nasals /m/ and /n/ have the feature [+syllabic] from the Generative CV-Phonology model perspective. In contrast, MSA nasals are not [+syllabic] (Akidah, 2012:73). Instead, the two nasals are marginal elements of a syllable in MSA. The distinctive features of MSA nasals are:

(36)

/m/

- syllabic
- coronal
+ anterior
- continuant
+ voice
+ nasal

/n/

- syllabic
+coronal
+ anterior
- continuant
+ voice
+ nasal

2.2.2.4 Liquids

MSA has two liquids, /l/ and /r/. Both liquids are similar to Kiswahili liquids in terms of distinctive features (Refer to 2.2.2.5).

2.2.2.5 Glides

MSA has two glides which are similar to Kiswahili ones, namely: /w/ and /j/. (Refer to 2.2.2.6). The table below shows a summary of MSA consonants:

Fig. 4

MSA CONSONANTS

	Bilabial	Labio-dental	Dental	Alveo-lar	Post-alveolar	Retro-flex	Palatal	Velar	Uvular	Pharyn-geal	Glottal
Plosive	b			t d tˤ dˤ			dʒ	k	q		ʔ
Nasal	m			n							
Trill				r							
Fricative		f	θ ð ðˤ	s z sˤ	ʃ			x ɣ		ħ ʕ	h
Approximant	w						j				
Lateral approximant				l							

* This Table is adapted from IPA Revised (2005), with modifications.

2.2.3 Remarks

In total, MSA has thirty six segments comprising three short vowels with their long counterparts, two diphthongs and twenty eight consonants. MSA has three short vowels /a/, /i/ and /u/; while Kiswahili has five short vowels /a/, /i/ /u/, /ɛ/ and /ɔ/. Moreover, MSA has three long vowels /aː/, /iː/ and /uː/, but Kiswahili has no long vowels. MSA does not have the segments /p/, /g/, /v/, /tʃ/ /ɲ/ and /ŋ/ which are found in Kiswahili. The MSA segments /ðˤ/, /tˤ/, /dˤ/, /sˤ/, /x/, /q/, /ʔ/, /ħ/ and /ʕ/ are not in Kiswahili. The segments outlined immediately above are found in either Kiswahili or MSA. The difference can be explained from the fact that the two languages belong to different

language families: MSA is Semitic while Kiswahili is Bantu. In summary, twenty two segments are found in both Kiswahili and MSA which include: /a/, /i/, /u/, /b/, /t/, /d/, /ɟ/, /k/, /f/, /θ/, /ð/, /s/, /z/, /ʃ/, /ɤ/, /h/, /m/, /n/, /l/, /r/, /w/ and /j/. The segments /θ/, /ð/ and /ɤ/ are the foreign sounds that came to Kiswahili as part of loanwords from MSA. We are aware of the fact that the segments /θ/, /ð/ and /ɤ/ exist in other Bantu languages. However, in this study we observe that the segments are found in Kiswahili loanwords borrowed from MSA. More details on these segments are in Chapter Four of this study.

2.3 Kiswahili and MSA Syllable Structures

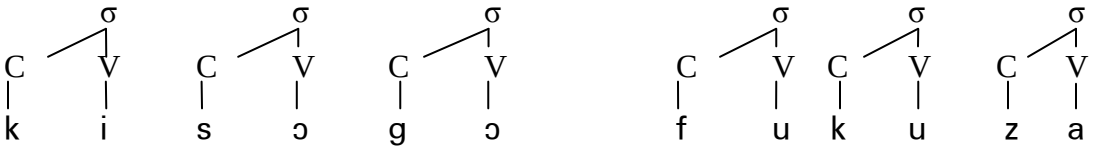
Having looked at the sound systems of the two languages, we embark on their syllable structures. Every language has its own combination of sounds within a syllable and word (Ladefoged, 2000:230). According to Katamba (1989:165), all syllable structures follow phonotactic rules which dictate combinations of sounds that are allowed in a particular language.

2.3.1 CV Syllable

A CV syllable constitutes one consonant and one vowel segment. Clements & Keyser (1983:28) state that CV syllable is presumably found in all languages such as English, Arabic and Bantu languages. It is the most preferred syllable in all world languages. In this study, we observe that both Kiswahili and MSA have this syllable structure in greater part of their words. In fact, Iribemwangi (2010:54) asserts that CV forms the bulk of syllables in Kiswahili. The syllable is observed in many Kiswahili words of Bantu origin as demonstrated in the following examples:

(37)

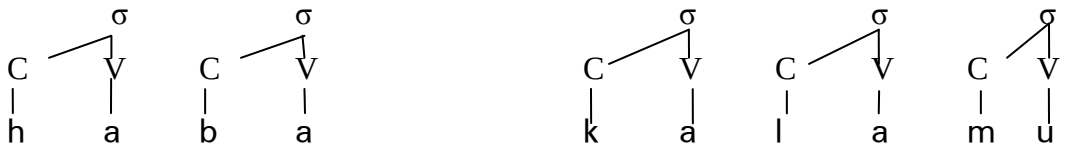
	Kiswahili Gloss
a. /fika/	arrive/reach
b. /tʃapa/	to cane
c. /kisɔgɔ/	back of head/nape
d. /fukuza/	to chase away



The preferred syllable is also found in Kiswahili loanwords borrowed from MSA such as:

(38)

	Kiswahili Gloss
a. /haba/	little
b. /hɔɟa/	a point/argument
c. /kalamu/	pen
d. /fɛðɛha/	shame/disgrace/scandal

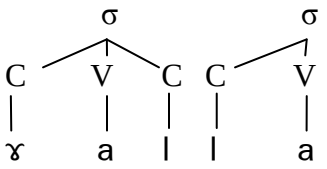


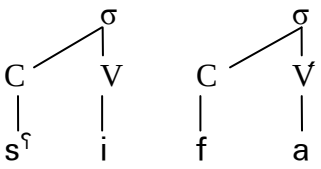
h ɔ ɬ a f ɛ ð ɛ h a

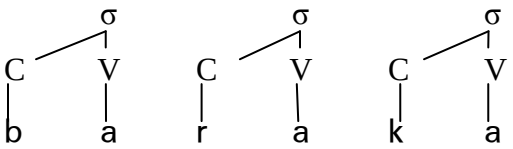
We note that CV is also a preferred syllable structure in MSA, despite the prevalence of other syllable types. There are many words that have the CV structure such as in the examples given below:

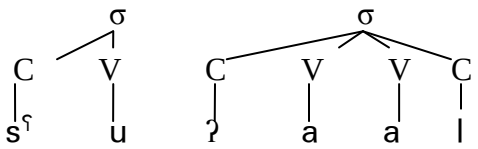
(39)

	MSA Gloss
a. / ɤalla/	yield
b. / sˁifa /	praise
c. / baraka /	blessing
d. / sˁu ʔ aːl /	a question









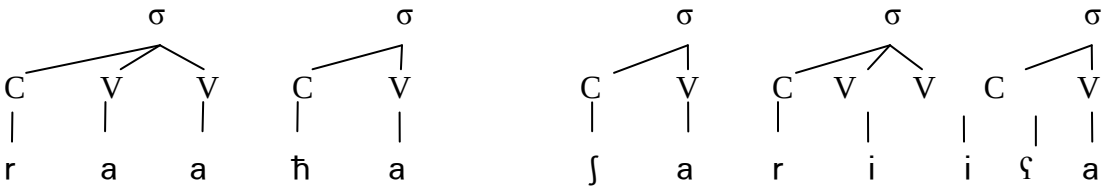
The examples in (39) indicate that open syllables are not a preserve of Bantu languages only. MSA also has open syllables as part of its syllable structure. In fact, Al-Ani (1970:87) and Akidah (2012:81) attest to this fact, stating that CV is the most common syllable structure in MSA.

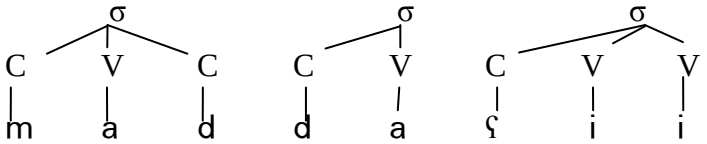
2.3.2 CV: Syllable

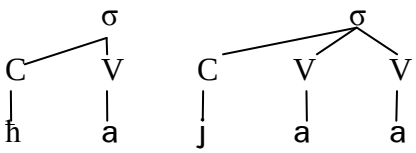
The syllable CVː comprises a consonant and a long vowel. Linguists such as Bateson (1967) and Fischer (2002) contend that the syllable structures in MSA are CV and CVC only. In other words, the two linguists do not acknowledge the existence of the syllable type CVː in MSA. However, it is evident in this study that there are more syllable structures than the two they posit. We have confirmed the existence of CVː syllable in MSA which is described by Al-Ani (1970) and Akidah (2012) as CVV. MSA words with CVː syllable are given hereby:

(40)

	MSA Gloss
a. / raːħa /	pleasure
b. / ʃariːʕa/	law
c. / muddaʕiː/	alleger
d. / ħ aj a ː /	life







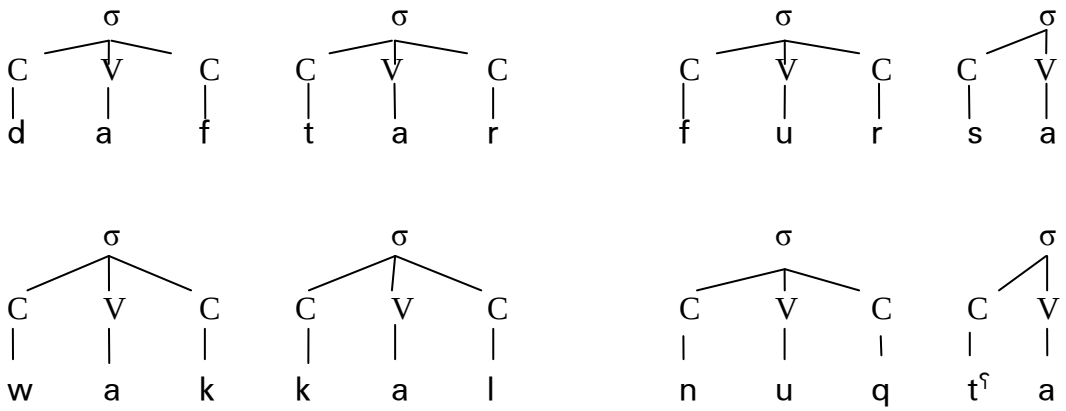
According to Al-Ani (1970:87), if or when two vowels of the same kind follow each other, they are treated as a monophthong, and therefore, cannot be split. Thus, Al-Ani (1970) and Akidah (2012) acknowledge the -VV sequence as one long vowel. Accordingly, the CVV syllable described by Al-Ani (1970) and Akidah (2012) may also be represented as CVː denoting a consonant element that is followed by a single long vowel. This implies that the two vowels indicated by the two linguists in CVV are actually one long vowel which we indicate in this study as CVː. We have observed from our data that there is no CVː syllable in Kiswahili even in borrowed words. In some studies, borrowed words are transcribed with Vː but in actual sense they are not long vowels. Rather, the segments are a sequence of two vowels, associated to separate syllables each, for instance, the word /maalum/ has syllables CV-V-CVC (not CVː-CVC).

2.3.3 CVC Syllable

CVC syllable comprises a consonant followed by a short vowel ending with a consonant. The syllable is found in MSA as provided by Bateson (1967), Al-Ani (1970), Fischer (2002), Watson (2007) and Akidah (2012). In this study, we have observed that the syllable CVC is common in MSA words such as:

(41)

	MSA Gloss
a. / daftar /	exercise book
b. / fursa /	opportunity
c. / wakkal /	to delegate
d. /nuqtˤa /	a second

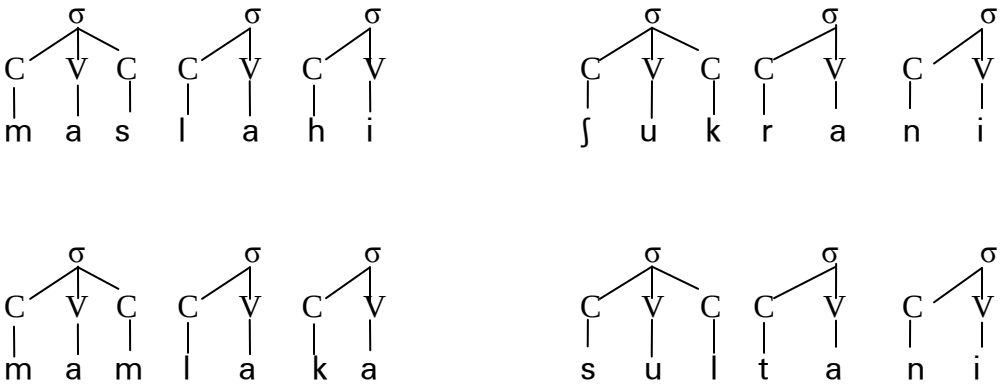


Al-Ani (1970:77) states that if or when there is a cluster of two consonants following one another, whether geminate or otherwise, they are separated by a syllable boundary, such that the first member of the cluster occupies the coda of the preceding syllable, and the second member occupies the onset of the following syllable as shown in 41(c). As we have stated in 1.8.4, geminate consonants are separated by syllable boundaries if they are in a word which is not monosyllabic. Due to this, the syllable structure CVC is bound to be prevalent in MSA. However, we note that the separation of consonant sequences does not apply at word final positions. This syllable occurs in initial, medial and final positions in MSA.

In Kiswahili, CVC syllable is observed in loanwords only, but not found in Kiswahili words of Bantu origin. In many cases, it appears in initial and medial, but rare in final position of Kiswahili words. Linguists such as Aswani (1995) and Mwita (2009) also attest that CVC is one of the syllables found in Kiswahili loanwords only, for example, in words such as /daktari/ for *doctor* in English and /sultani/ for *Sultan* in MSA. Examples of borrowed words from MSA that bear the CVC syllable are as follows:

(42)

	Kiswahili Gloss
a. /maslahi/	benefits
b. /ʃukrani/	thank you
c. /mamlaka/	authority/mandate
d. /sultani/	sultan



2.3.4 CCV Syllable

The CCV syllable structure comprises a cluster of two consonants ending with a vowel. Mwita (2009:50) observes that this syllable type is usually found at word or syllable initial position of Kiswahili words. The syllable is found in Kiswahili words of Bantu origin such as:

(43)

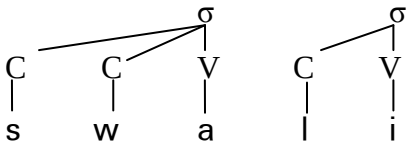
	Kiswahili Gloss
a. /mwikɔ/	taboo
b. /fjɛka/	to slash
c. /tunza/	to take care of/maintain
d. /mwɔŋgɔ/	liar

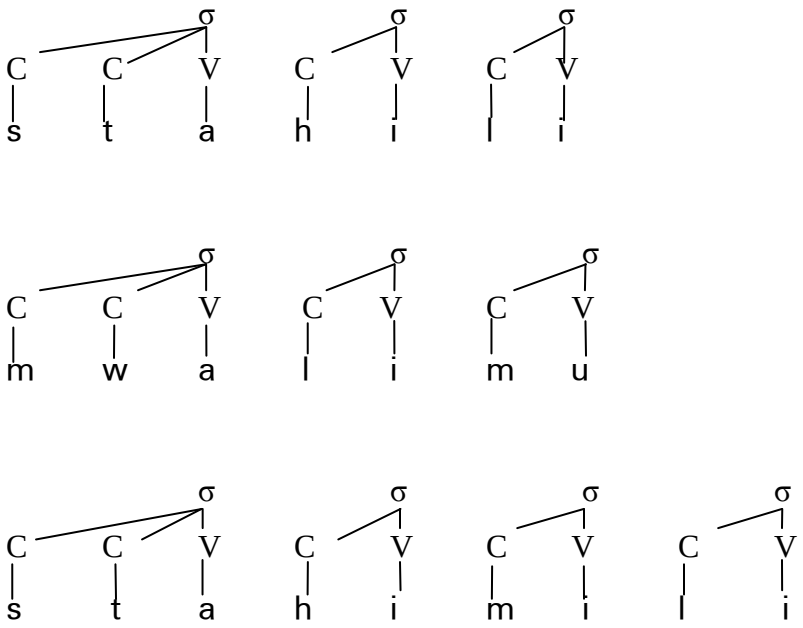
Some linguists' view is that the syllable structure of 43(c) is CVC$CV, that is, tun$za. In our view, this is possible with other theories, for example, NGP. However, within the Generative CV-Phonology model, when the Onset First Principle (Refer to 1.9.1.4) is applied, it obtains a different syllable structure given in 43(c), that is, CV$CCV. According to this principle, a consonant cluster at the syllable onset is preferred to having a consonant as a coda in Kiswahili. In addition, Hyman (1975) attests that syllable structure and word structure are similar in languages. Thus, since words can begin with the consonant cluster nz- in Kiswahili, the same cluster can appear at the onset of a syllable.

CCV structure is not found in MSA because consonant clusters in syllable or word initial position are not permitted in the language. However, the CCV syllable type is observed in Kiswahili loanwords such as in the given examples:

(44)

	Kiswahili Gloss
a. /swali/	question
b. /stahili/	deserve
c. /mwalimu/	teacher
d. /stahimili/	to bear with





From the examples in (44), we have found out that in Kiswahili, the CCV syllable appears in four kinds of segment sequences. These are swa-, sta-, ʃta- and mwa-. Of the sequences, the first three are seen in the loanwords only.

2.3.5 CCCV Syllable

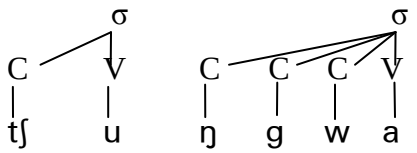
CCCV is a syllable that constitutes a three consonants cluster and a vowel. In this study, we observe that the syllable is found only in Kiswahili words of Bantu origin. The syllable is not in MSA since consonant clusters at initial position are not part of MSA syllable structure. Examples of Kiswahili words bearing the syllable include:

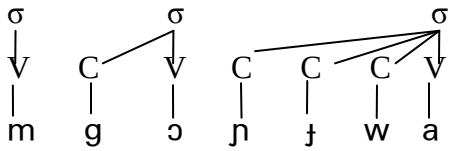
(45)

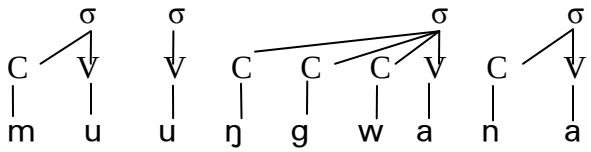
	Kiswahili Gloss
a. /tʃuŋgwa/	an orange fruit

b. /mgɔɲɟwa/ patient/sick (of a person)

c. /muuŋgwana/ civilized (of a person)







The examples in (45) indicate that the consonant clusters in the CCCV syllable comprise a nasal segment, followed by a stop and a glide.

2.3.6 V Syllable

A V syllable constitutes only a vowel segment, a syllabic nasal or a syllabic liquid. The V syllable with a vowel segment is commonly found in Kiswahili, for example:

(46)

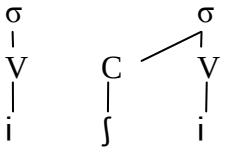
Kiswahili Gloss

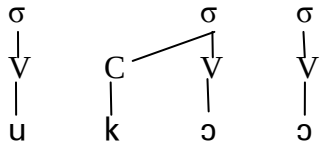
a. /iʃi/ to live

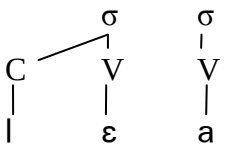
b. /ukɔɔ/ clan

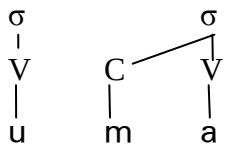
c. /lɛa/ to bring up

d. /uma/ to bite









As Clark & Yallop (1990:68) assert, syllabic nasals are reasonably common in African languages. V syllables made of syllabic nasals /m/, /ŋ/, /ɲ/ and /n/ are seen in Kiswahili words:

(47)

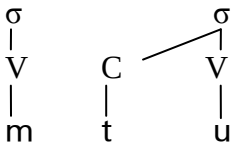
Kiswahili Gloss

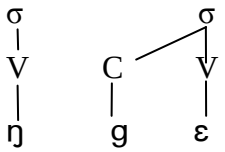
a. /mtu/ a person

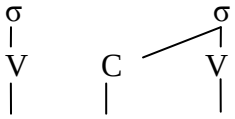
b. /ŋgɛ/ a scorpion

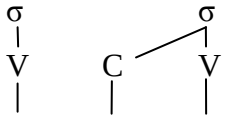
c. /ɲɟɛ/ outside

d. /nzi/ housefly







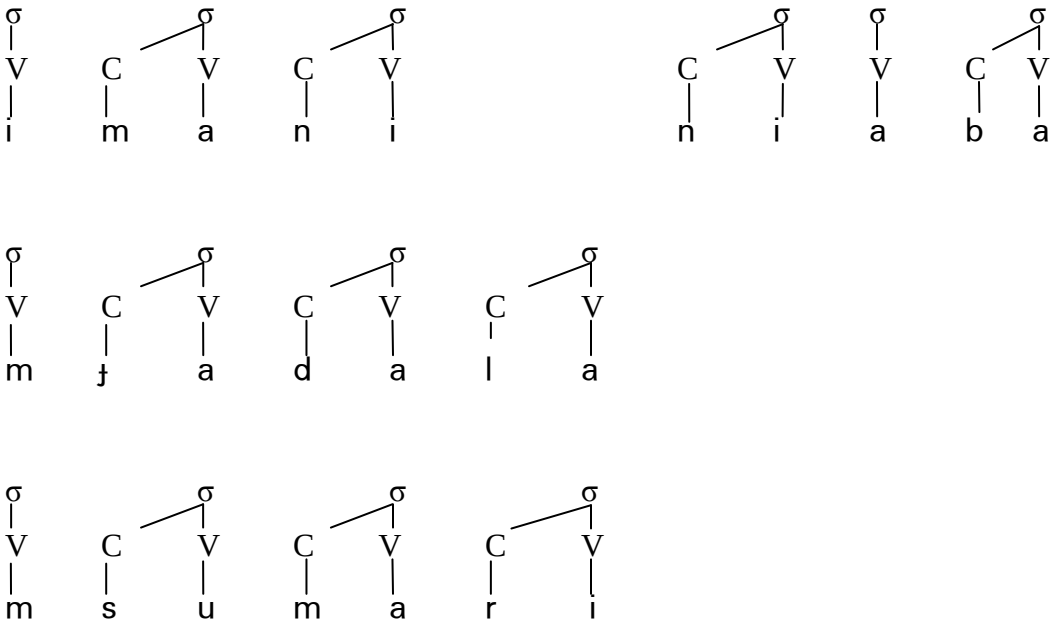


ɲ ɬ ɛ n z i

We have also found Kiswahili loanwords from MSA having V syllable structure which is occupied by either a vowel or a syllabic nasal in words such as:

(48)

	Kiswahili Gloss
a. /imani/	faith
b. /niaba/	on behalf
c. /mɬadala/	discussion
d. /msumari/	nail



The examples in (48) show that the syllabic nasal mostly found in Kiswahili loanwords is the bilabial nasal /m/. This is because the bilabial nasal /m/ can stand as a syllable nucleus and therefore, as a syllable on its own. According to the Generative CV-Phonology model, any segment whether vowel or consonant that occupies the nucleus position is syllabic. In this theory, a segment that is syllabic is associated to a V element

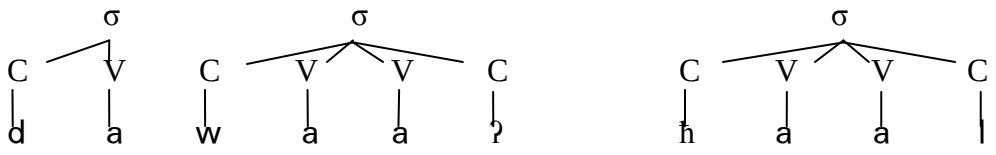
of the CV tier, as shown in items (48 c, d). In MSA, the syllable type V does not exist because there is no syllable or word in MSA that begins with a vowel (Fischer, 2002:30). In many MSA words, there is a glottal stop /ʔ/ or pharyngeal fricative /ʕ/ that precedes the vowel segment. These initial consonants may not be clearly plausible to the hearer, although the speaker articulates them (wa Mberia, 1993:92; Akidah, 2012:81). This explains why for instance in Mwita's (2009:55) data, the syllable initial glottal stop and pharyngeal fricative are not included, which then obtain wrong results with regard to loanword syllable structure changes.

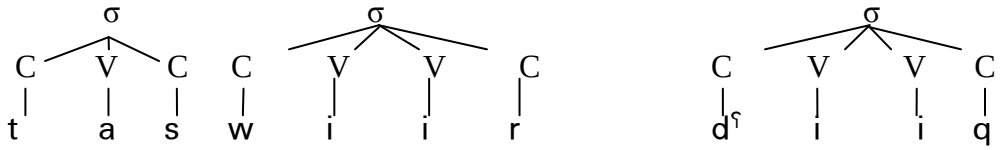
2.3.7 CV:C Syllable

CV:C is a closed syllable that begins with a consonant followed by a long vowel and then ends with a consonant. Al-Ani (1970:87) and Akidah (2012:81) assert that CV:C is the least common syllable in MSA. This structure is evident in MSA words as shown in the following examples:

(49)

	MSA Gloss
a. /dawaːʔ/	medicine
b. /ħaːl/	state (of something/somebody)
c. /taswiːr/	picture/imagery
d. /dˁiːq/	distress





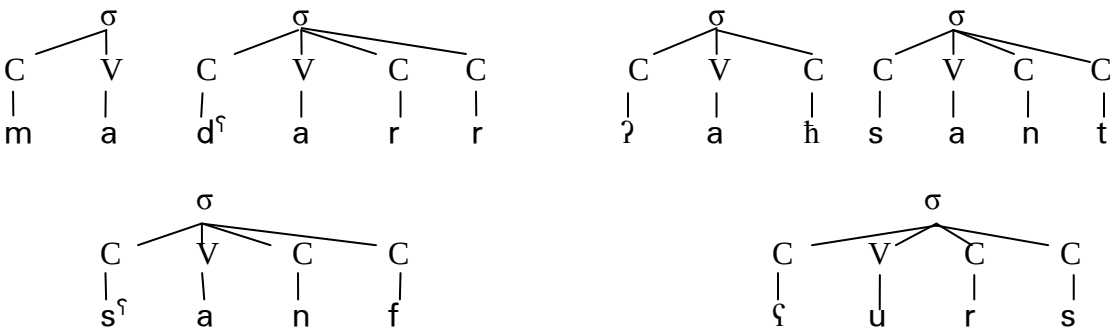
CV:C syllable is not found in Kiswahili because long vowels are not characteristic of Kiswahili. Furthermore, being an open syllable language, Kiswahili prefers open syllables at final positions.

2.3.8 CVCC Syllable

CVCC syllable is made of an initial consonant that is followed by a short vowel and ends with a cluster of two consonants. In MSA, the final consonant cluster can be made of geminate or different consonants. It occurs mostly in syllable final position or in isolation of MSA words such as:

(50)

	MSA Gloss
a. /madˤarr/	bad effects
b. /ʔaħsant/	thank you
c. /sˤanf/	standard/skilled
d. /ʕurs/	wedding



This is also a closed syllable that ends with a two consonants cluster. Kiswahili does not have this syllable type given that it shuns closed syllables and consonant clusters at final positions. In 50 (c), the alveolar nasal is not syllabic for two reasons. One, as has been stated in 2.3.2.3, MSA nasals are not syllabic, since they occupy the syllable margins only. Second, according to the Generative CV-Phonology, a segment that occupies the onset or coda of a syllable is non-syllabic, and therefore, it is associated to a C-element of the CV tier.

At this juncture we review Iribemwangi's (2010) list of Kiswahili syllables. Though Iribemwangi (2010:53-58) uses a different approach (NGP) in determining the syllable structure of Kiswahili words, we agree with six of his syllable structures, which are CV,V, CCV, CVC, VC and CCCV. The difference between our views is based on the theoretical approach of this study. Refer to section 2.4, where we have discussed Kiswahili syllable structures from the Generative CV-Phonology viewpoint. The six syllables listed by Iribemwangi (2010) are part of what we have discussed in 2.4. We have a different view on the other three syllables given by Iribemwangi (2010), which are CGV, CCGV and CVː. The reason is partly on the theoretical model used in our study and partly on the presence or absence of a syllable structure in Kiswahili. In Chapter One, we have explained that glides are treated as consonants within the theory applied in this study. This is because according to the well-formed expression tenet of the Generative CV-Phonology, there are only two elements C and V on the CV-tier, and there is no provision for G (glide). Thus, any segment that is not syllabic is treated as a C element.

Therefore, the CGV[2] and CCGV syllables posited by Iribemwangi (2010), from the standpoint of our theory are CCV and CCCV, respectively.

Iribemwangi's (2010) syllable CVː[3] raises the issue of long vowels in Kiswahili. As a matter of fact, long vowels do not exist in Kiswahili. What Iribemwangi (2010:57) posits as a long vowel is indeed a sequence of two vowels, that is, ka$a$ka$a, whose syllable structure is CVVCVV, daa$wa with syllable structure is CVVCV and mi$i$kɔ with syllable structure CVVCV. In our view, CVː syllable structure is not found in Kiswahili even among the loanwords. That is why, as will be observed in Chapter Three, long vowels are reduced to short vowels on getting into Kiswahili.

In summary, Kiswahili and MSA have common syllable structures, and syllables that are exclusive to each language. MSA syllables are CV, CVː, CVC, CVːC and CVCC; while Kiswahili syllables are CV, V, CCV, CCCV and CVC. The syllables common to both languages are CV and CVC. In this study, we note that a new syllable VC has emerged in Kiswahili through loanwords[4].

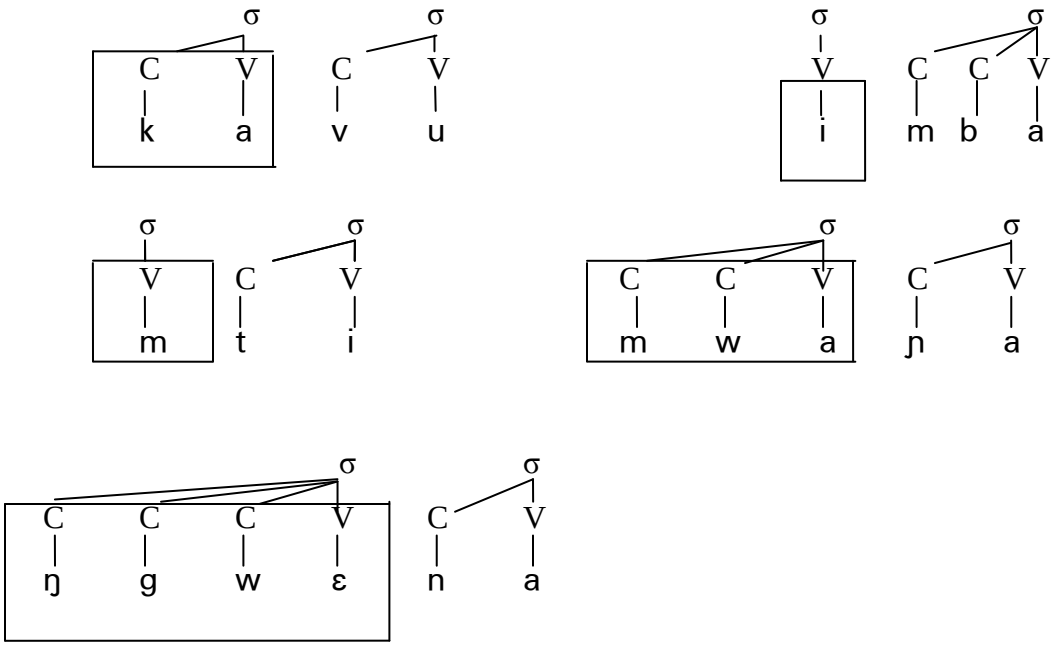
2.4 Kiswahili and MSA Syllable Weight

Syllable weight is determined by the content of its nucleus or rhyme. It has been noted in Chapter One, that there are two syllable types with regard to weight, namely, light syllable and heavy syllable. According to Clements and Keyser (1983:12), light syllables are those which have a single non-branching V element (V). On the other hand, heavy

syllables are those having a branching V element of either long or tense vowel (Vː), or a diphthong (VV or VC), or a vowel that is followed by a consonant (VC). In Kiswahili, some words with light syllables, which are in boxes, are shown below:

(51)

	Kiswahili Gloss
a. /kavu/	dry
b. /imba/	sing
c. /mti/	tree
d. /mwaɲa/	gap
e. /ŋgwɛna/	crocodile



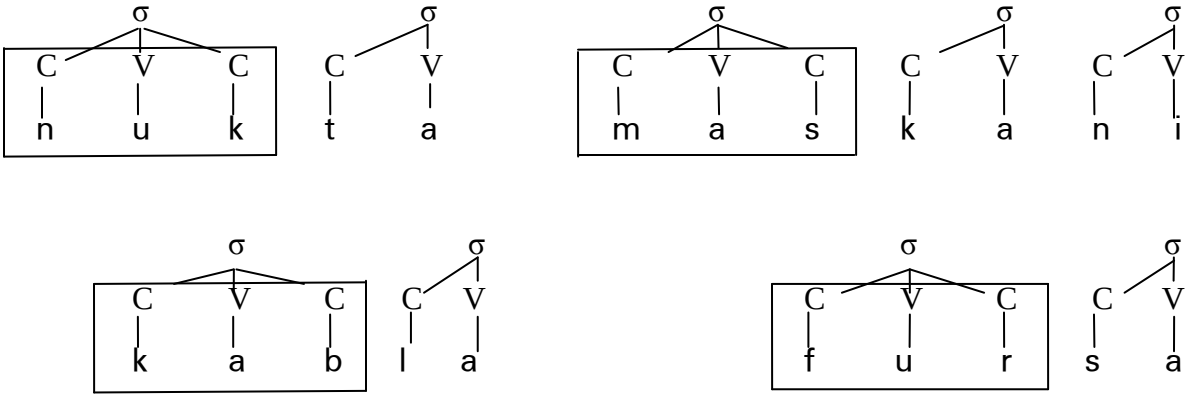
The examples in (51) show the non-branching V elements to be light syllables. They are non-branching in the sense that there is no other element that comes after the nucleus to the right within the syllable. Hyman (1975:189) asserts that the initial consonant of the onset is irrelevant in determining the phonological properties of a syllable. That is why

the C element to the left of the nucleus is not considered when it comes to syllable weight. Hence light syllables in Kiswahili are CV, V, CCV and CCCV only.

Heavy syllables found in Kiswahili are seen only in loanwords with CVC syllable structure such as:

(52)

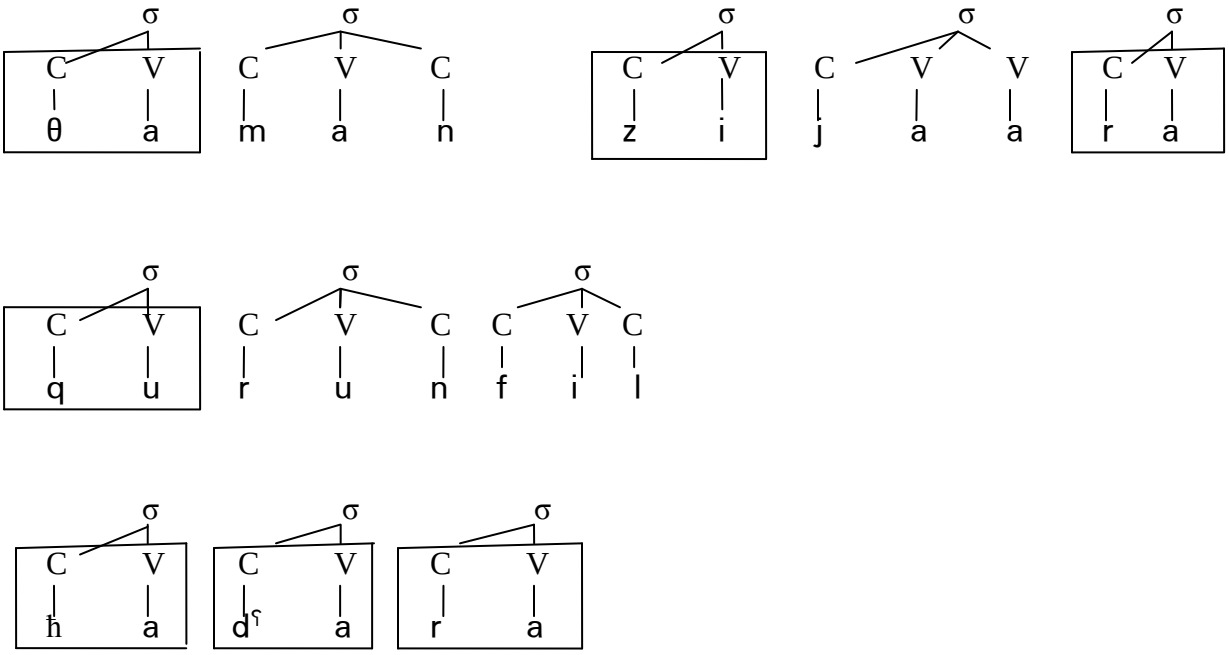
	Kiswahili Gloss
a. /nukta/	a second
b. /maskani/	an abode
c. /fursa/	opportunity
d. /kabla/	before



MSA light syllables are found in the words which have the CV syllable structure only such as:

(53)

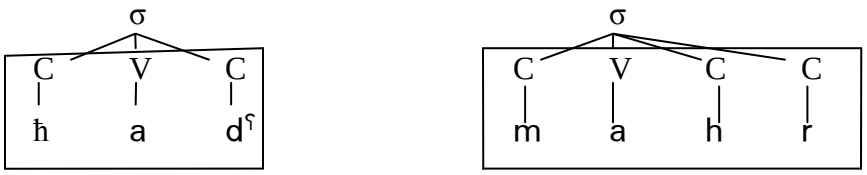
	MSA Gloss
a. /θaman/	value
b. /zija:ra/	tour
c. /qurunfil/	cloves
d. /ħadˤara/	in public

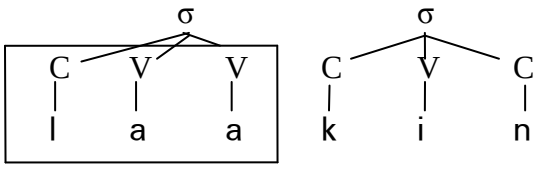


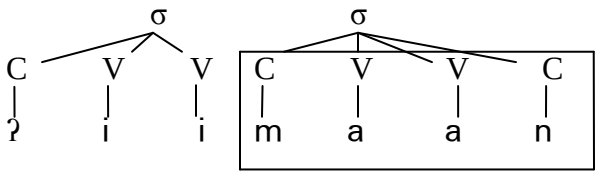
MSA heavy syllables have the structure CVC, CVCC, CVː and CVːC as observed in the following words:

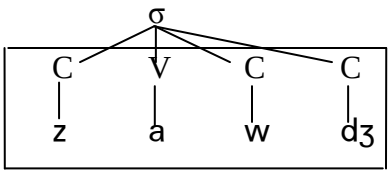
(54)

	MSA Gloss
a. /ħaðˤðˤ/	luck
b. /mahr/	bride wealth
c. /laːkin/	but
d. /ʔiːmaːn/	faith
e. /zawdʒ/	pair









Comparatively, MSA has more of the heavy syllables than Kiswahili. The only Kiswahili heavy syllable is CVC which was obtained from MSA through loanwords. MSA has four types of heavy syllables including CVC, CVː, CVCC and CVːC.

2.5 Kiswahili and MSA Stress Placement

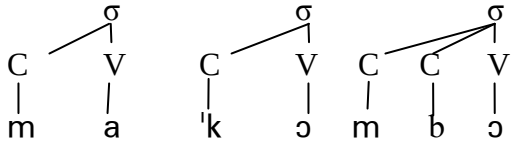
As stated by Hyman (1975:203) and Ladefoged (2000:225), stress is one of the suprasegmental features of prominence. Other supra-segmental features are tone and duration. Hyman (1975: 204) says that stress has a culminative function in language; that is, it is used to mark the peak of prominence on a syllable in a word. According to Katamba (1989:221), stressed syllables tend to have higher pitch and longer duration than their non-stressed counterparts.

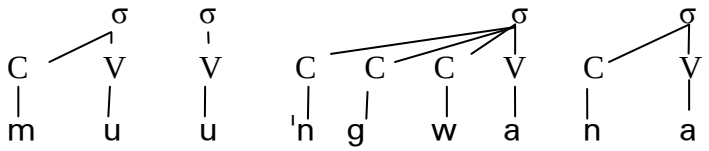
In terms of stress placement, there are two groups of languages (Hyman, 1975: 204). One group has free stress, where the prominence can occur on any syllable position depending on the word. The other group has fixed stress, that is, stress placement is restricted to one particular syllable position in a word, for instance, the first, second, penultimate or

ultimate syllable. Such languages have a completely predictable stress. Kiswahili has a completely predictable stress, which is marked on the penultimate syllable. We concur with Aswani (1995:68) on the predictability of stress in Kiswahili, as found in the words shown below:

(55)

		Kiswahili Gloss
a.	/ˈndugu /	brother
b.	/ˈɔmba/	pray
c.	/maˈkɔmbɔ/	leftovers
d.	/muuˈŋgwana/	civilized person





Stress placement in Kiswahili loanwords of MSA origin is also marked on the penultimate syllables only. So, stress placement is completely predictable in words such as:

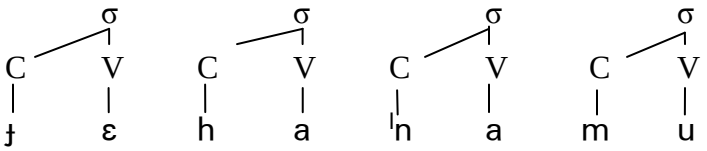
(56)

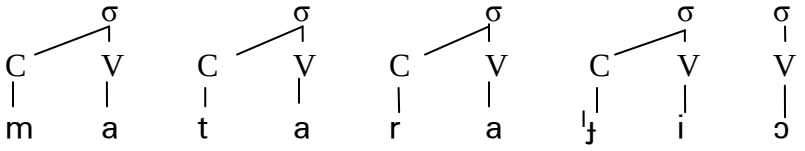
		Kiswahili Gloss
a.	/ˈhaɟa/	need/want/requirement

b. /iˈðini/ permission

c. /ɟɛhaˈnamu/ hell

d. /mataraˈɟiɔ/ expectations





Unlike Kiswahili, MSA belongs to the free stress group of languages, given that stress placement is not completely predictable (Al- Ani, 1970:88). According to Akidah (2012:82), stress placement in MSA depends on the syllable type and position in a word. Thus, when a word is made up of a string of CV syllables only, then the first syllable is given prominence, for example:

(57)

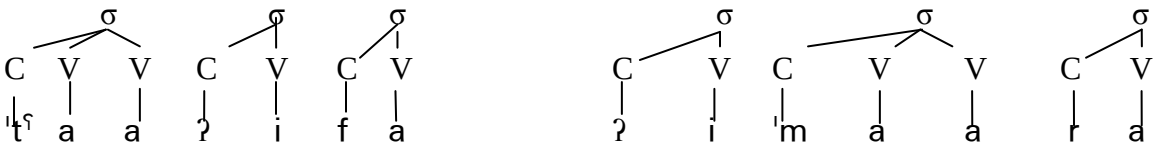
	MSA Gloss
a. / ˈluɤa /	language
b. /ˈħaraka/	movement

ˈl u ɤ a ˈħ a r a k a

If a word has only one long syllable, it is that long syllable which is given prominence as shown in the following MSA words:

(58)

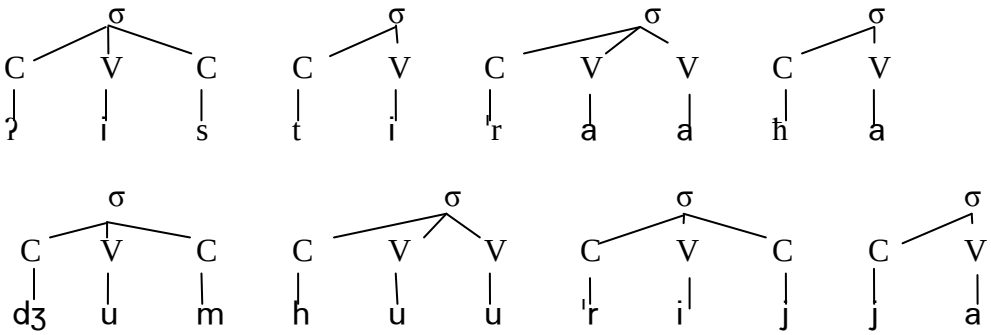
	MSA Gloss
a. / ˈtˤaːʔifa/	nation
b. /ʔiˈmaːra/	emirate



When an MSA word contains a string of two or more long syllables, then prominence is assigned on the long syllable that is closest to word final but never on the final syllable, for instance:

(59)

	MSA Gloss
a. /ʔistiˈraːħa /	leisure/comfort
b. /dʒumhuːˈrijja/	republic



Having considered the examples given in (57 - 59), we note that stress in MSA is predominantly on the penultimate syllable. If or when stress is not marked on the

penultimate, it is often marked on the antepenultimate. Though Al- Ani (1970) claims that MSA stress is not entirely predicted, we find that the opposite is true. In our view, MSA stress is marked on either penultimate or antepenultimate syllable (Akidah: 2012).

2.6 Kiswahili Consonant Clusters

In 1.9.1.2, we have mentioned that Kiswahili permits consonant clusters only on the syllable initial position. Kiswahili words of Bantu origin permit up to a maximum of three consonants at the syllable initial position. In most cases, the first member of the consonant cluster is a nasal, followed by a stop or an affricate, which is followed by the third member in the form of a bilabial glide. However, Kiswahili words bearing three consonant clusters are few. Many of such words in Kiswahili have clusters of two consonants. There are also a few cases of a consonant cluster involving the palatal glide as a second member. Thus, the table below gives a summary of Kiswahili consonant clusters:

(60) Table 1: A Summary of Consonant Clusters in Kiswahili Words of Bantu Origin

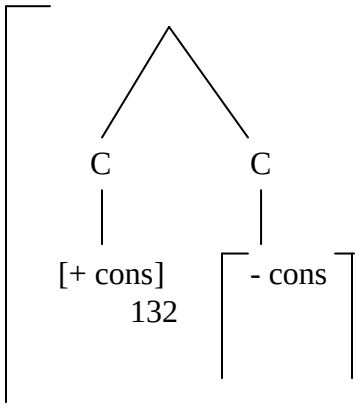
	w	**j**
p	+	+

b	+	-
m	+	-
f	-	+
t	+	-
tʃ	+	-
k	+	-
g	+	-
ɲ	+	-

The table given in (60) provides for the consonant clusters that are permitted in Kiswahili words of Bantu origin. The first column of the table has the initial consonants in a possible cluster of consonants. The next two columns bear the second consonant in a possible consonant cluster. The sign (+) indicates that the cluster is permitted in the language (PSSCs), while the sign (-) indicates that the cluster is not permitted in the language (NSSCs). From this table, we derive a rule that provides for the PSSCs in Kiswahili as follows:

(61)

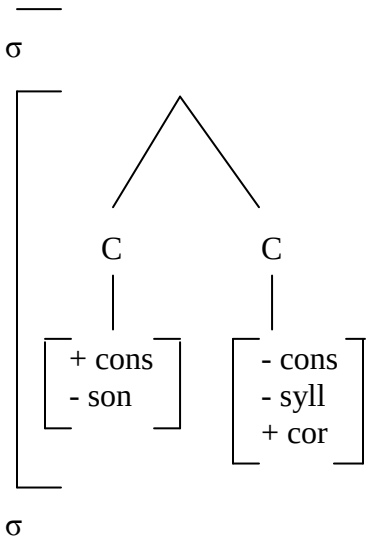
a)



- syll
- cor

is admissible

b)



is admissible

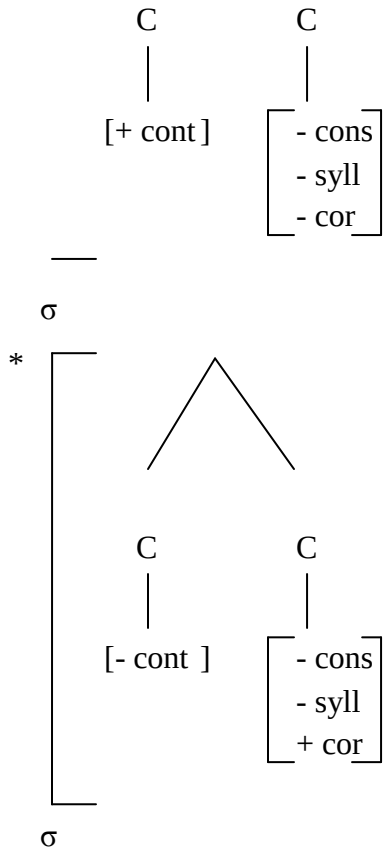
From the PSSCs in (61 a), Kiswahili words of Bantu origin permit the following consonant clusters:pw-, bw-, mw-, tw-, tʃw-, kw-, gw- and ɲw-. These clusters are found in Kiswahili words such *as pwagu* (a cheat), *bwaga* (throw down), *twaa* (take), *mchwa* (termite), *kwea* (climb), *mgwisho* (fly whisk) and *nywesha* (irrigate). The PSSCs in (61 b) indicate that Kiswahili words of Bantu stock permit pj- and fj- consonant clusters. Examples of Kiswahili words containing these clusters are *pyora* (to insult) and *fyonza* (suck).

Consonant clusters which are not permitted in Kiswahili words of Bantu origin are summarized in the NSSC rule below:

(62)

a) * Excludes:

b)



fw

Excludes:

bj, tj, tʃj, kj….

The NSSCs rules in (62) indicate that the consonant clusters which are not permitted in Kiswahili words of Bantu origin are: fw-, bj-, tj-, tʃj-, kj-, gj- and ɲj-. For instance, the hypothetical words *fwia, *byoka,* tyeka, *chyana, *kyona, *gyanzi and *nyyasi which do not exist in Kiswahili since the consonant clusters are not permitted by the language.

In Kiswahili loanwords, consonant cluster rules are governed by PSSCs and NSSCs derived from the table below:

(63) Table 2: A Summary of Consonant Clusters in Kiswahili Loanwords

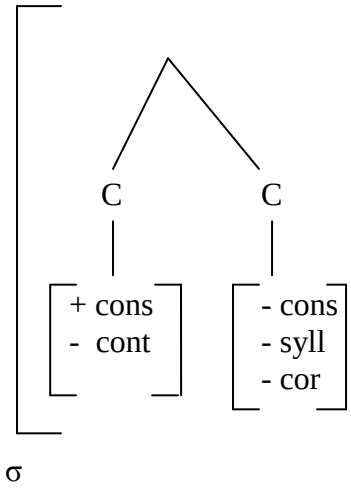
	w	**j**	**t**

m	+	+	-
f	-	+	-
s	+	-	+
g	+	-	-
ʃ	+	-	+

From the table in (63), Kiswahili loanwords permit consonant clusters that are conditioned by the following PSSC rule:

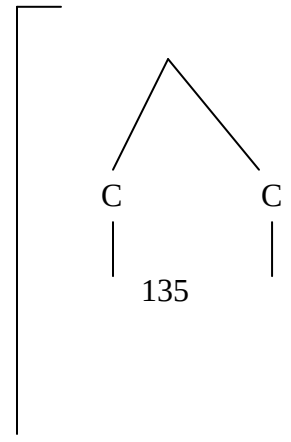
(64)

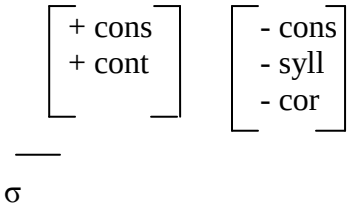
a)



is admissible

b)

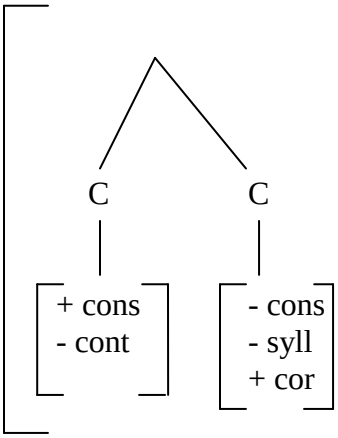




is admissible

σ

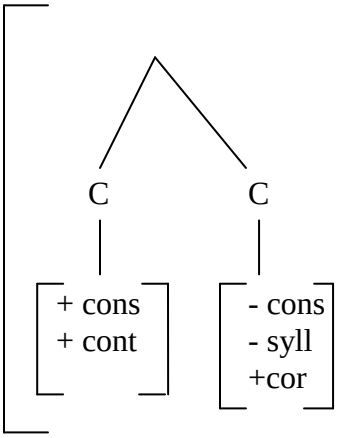
c)



is admissible

σ

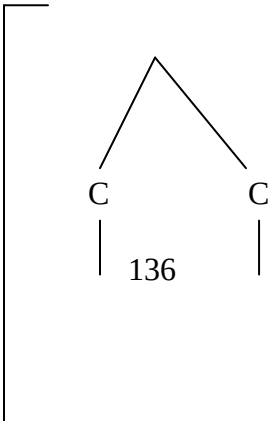
d)

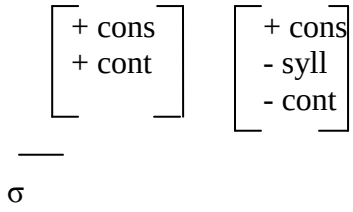


is admissible

σ

e)



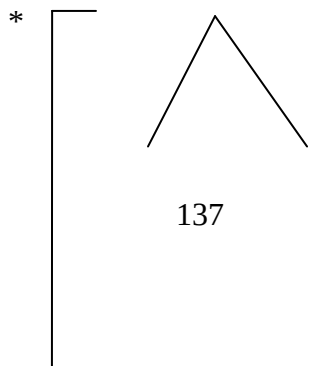


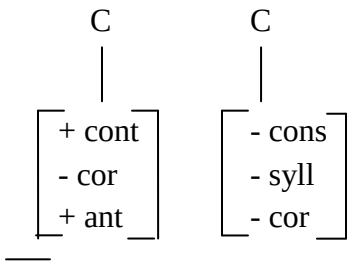
is admissible

The rules in (64 a – e) therefore, permit the consonant clusters mw-, sw-, gw-, ʃw-, fj-, st- and ʃt- in Kiswahili loanwords. The rule stipulates that these consonant clusters are permitted in Kiswahili words such as *mwajiri* (employer), *swala* (prayer), *gwaride* (parade), *shwari* (calm), *afya* (health), *stahiki* (deserve) and *shtaka* (accusation).

The consonant clusters which are not permitted in Kiswahili loanwords are summarized by the following NSSCs rules:

(65)

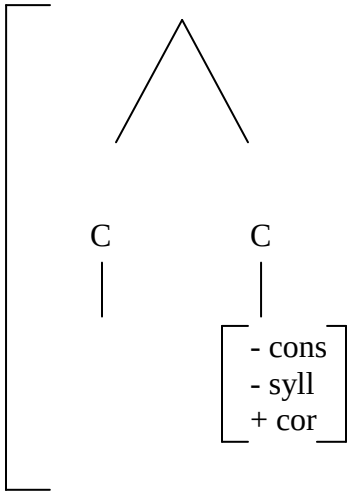
a)  Excludes:



fw

σ

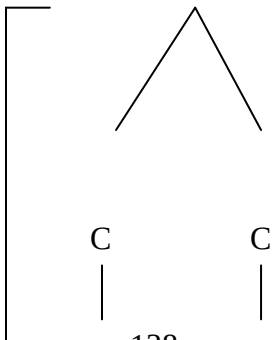
b) * Excludes:



bj, sj, tʃj, kj, gj, ʃj

σ

c) * Excludes:



$$\begin{bmatrix} \text{-cont} \\ \text{-son} \end{bmatrix}$$

pt, bt, mt, tf, tʃt, kt, gt

$$\sigma$$

Therefore, the rules in (65 a – c) do not permit consonant clusters pt-, bt-, mt-, tf-, tʃt-, kt- and gt- in Kiswahili loanwords such as **ptiba, *btarehe, *mtabibu, *tfani, *chtaka, *ktabu* and **gtalaka.* Given that the clusters are not permitted in Kiswahili loanwords, the words in asterisk are non - existent in the language.

Conclusion

In this Chapter, we have discussed Kiswahili and MSA sound systems. We have described the vowel and consonant segments as well as the syllable structures of both languages with a view to making a comparison. By so doing, we have displayed the feature similarities and differences between Kiswahili and MSA. Generally, there is one similarity and various differences between Kiswahili and MSA. The major similarity is the presence of CV in both languages as the preferred syllable structure. This is an obvious scenario given that CV is the preferred syllable universally. We have noticed various differences between these two languages. These differences can be explained by the fact that Kiswahili and MSA are from different language families. One of the differences is in the number of vowels: MSA has six vowels while Kiswahili has five vowels. In essence, Kiswahili has the mid vowels unlike MSA which has only high and low vowels. Kiswahili does not have diphthongs, which we have observed in MSA. Long

vowels are found in MSA but they are not in Kiswahili. MSA also has pharyngeal and pharyngealised consonants which are not found in Kiswahili. This place of articulation (pharynx) is not used in the articulation of any Kiswahili segment. These are important features in determining the syllable structure changes in the next Chapters.

We have seen that closed syllables are common in MSA. The closed syllable CVC in Kiswahili is seen in loanwords only. The same applies to heavy syllables, which were introduced into Kiswahili through loanwords. As we have seen in this Chapter, MSA has four types of heavy syllable: CVː, CVC, CVːC and CVCC. According to Schane (1973:209), there is some kind of hierarchy of preferred syllable structure in a language. In Kiswahili, the optimal syllable structure is CV (as in all languages). The next optimal syllable is V, while CCV and CCCV are the least Kiswahili preferred syllable.

ENDNOTES

[1] www.tedpower.co.uk/esl0105.html These examples were drawn from English because diphthongs are not found in Kiswahili, and MSA has only two diphthongs.

[2]Iribemwangi (2010) has used ½V to represent a glide. We opted to use G in place of ½V.

[3]Iribemwangi (2010) has used –VV to represent a long vowel. We opted to use –V: in place of –VV.

[4]The new syllable is discussed in detail in Chapter Four.

CHAPTER THREE

MSA LOANWORDS' ADAPTATION TO KISWAHILI SYLLABLE STRUCTURE

3.0 Introduction

In Chapter Two, we have described Kiswahili and MSA syllable structures. The Chapter forms the background for our data analysis in the subsequent chapters. In this Chapter, we illustrate how Kiswahili syllable structure constraints shape MSA loanwords adapted by the language. We argue that almost all the loanwords are retailored to conform to the syllable structure permissible in Kiswahili. For this reason, we contend that nearly all the phonological processes in the loanwords are basically motivated by preferred syllable structure rules (PSSRs). Moreover, we have found that the difference in phonemic inventory between Kiswahili and MSA also causes phonological changes in the loanwords. The MSA loanwords are restructured to bear Kiswahili syllable structures by substituting MSA syllables with Kiswahili syllables.

3.1 Retailoring of Kiswahili Loanwords

When loanwords are borrowed into a language, most of them undergo a retailoring process. Retailoring refers to the process of changing the structure of loanwords to be similar to the structure of the RL. According to Aswani (1995:55), loanwords borrowed into Kiswahili have to be retailored so that they conform to Kiswahili structure. Therefore, retailoring occurs on loanwords which are adapted into the RL, that is, adjusted borrowing. There are linguistic reasons that motivate the retailoring of loanwords. The motivation for the retailoring of loanwords is triggered by RL's

phonotactic constraints, as pointed by Hall-lew (2002:7) who states that, "complex motivations lie behind the form a loanword takes in the borrowing language, and such motivations are based on the patterns of word formation in both the donor and borrowing languages." This means that loanwords' retailoring is motivated by structural requirements of the RL.

In this study, we have observed that Kiswahili phonotactic constraints initiate the phonological processes that occur in syllables and segments of the loanwords in order to achieve the preferred syllable structures. This usually involves syllable transformations and phonological processes on loanwords. Aswani (1995:56), states that processes such as segment insertion, deletion, assimilation, vowel coalescence and glide formation are usually involved in retailoring of Kiswahili loanwords. In addition, Iribemwangi (2010:195) says that rules involving substitution, insertion and deletion are involved in the nativisation process of loanwords and the acquisition of the preferred syllable structure. The processes outlined by Aswani (1995) and Iribemwangi (2010) are described by Schane (1973:207) as the three categories of natural rules: assimilative rules, preferred syllable structure rules and maximum differentiation rules. Of the three categories, only the assimilative rules and preferred syllable structure rules are discussed by Aswani (1995) and Iribemwangi (2010). We note that more processes are involved in retailoring of Kiswahili loanwords. Retailoring of Kiswahili loanwords is also achieved by substituting most (but not all) MSA syllables alien to Kiswahili syllable structure.

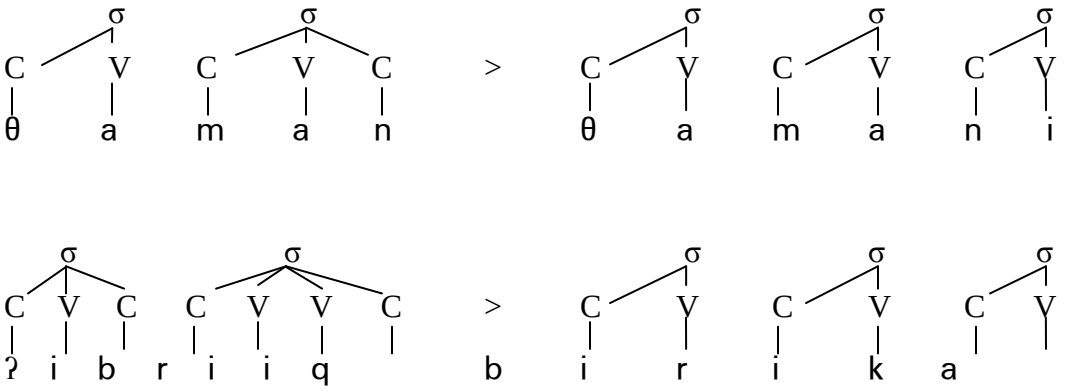
We have also observed that Kiswahili loanwords from MSA are copied from what the speakers hear from the SL. This means that the loanwords are not derived from the MSA

underlying structure, but rather from its surface structure. RL speakers pick what they hear from the SW and adopt it into their language. Paradis & Lacharite (1997: 381) summarise this well when they state that: 'the output of the source language is the basis of the loanword input'. Thus, Kiswahili loanwords are processed from MSA sourcewords that are received at the phonetic level. In our data showing retailoring of loanwords, MSA sourcewords are on the left side of the symbol >, while Kiswahili loanwords are on the right side of the same symbol, as hereby demonstrated:

(66)

			Kiswahili Gloss
a.	/θaman/ >	/θamani/	value
b.	/ʔibriːq/ >	/birika/	kettle

MSA Sourceword Kiswahili Loanword



3.1.1 Substitution of MSA Syllables

In this study, we have observed that as Kiswahili adapts the words from MSA, most of the closed syllables are modified to be open syllables especially at syllable and word final positions; and long vowels are either shortened or split into short vowels. Moreover, syllables with final consonant clusters are changed to remove either the entire cluster or one member of the consonant cluster. In the section following, we discuss how MSA syllables are substituted in Kiswahili loanwords.

3.1.1.1 Making Closed Syllables Open

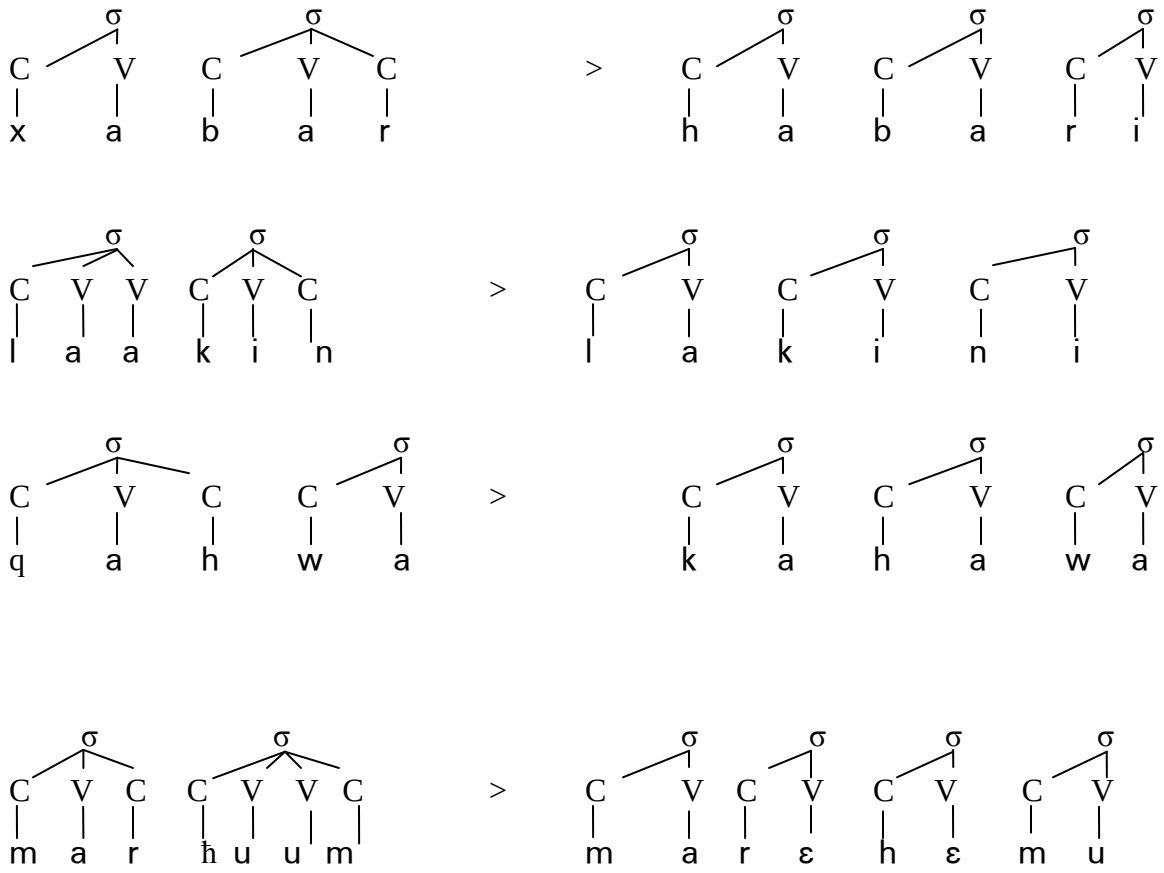
In Chapter Two, we have stated that MSA has three types of closed syllables. These are CVC, CV:C and CVCC. We observe that when loanwords containing these closed syllables get into Kiswahili, the syllables are made open. Iribemwangi (2010:185) states that one of the reasons for phonological changes occurring in Kiswahili loanwords is to avoid closed syllable structures especially at the end of a word. This is achieved either by inserting a vowel at final position or by deleting the final consonant(s). In this study, we note that all loanwords having CVCC and CV:C syllables in their SWs, and some of the loanwords with CVC syllables in their SWs are made open[1].

CVC is a common syllable structure in MSA words. In this study, it has been observed that many loanwords with CVC structure, are made open to form CV structure, for example:

(67)

Kiswahili Gloss

a.	/xabar/	>	/habari/	news
b.	/laːkin /	>	/lakini/	but
c.	/qahwa/	>	/kahawa/	coffee
d.	/marħuːm/	>	/marɛhɛmu/	the late



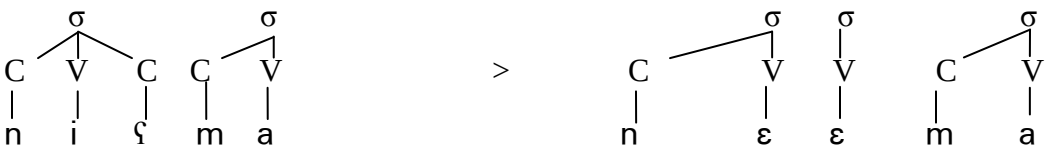
In (67), syllable transformations are seen to occur on the loanwords so as to realize open syllables. The CVC syllables in the SWs undergo transformations which yield CV syllables in the LWs. We observe that the closed syllable in the medial and final syllable position is made open through vowel insertion. In 1.9.1.1, it has been stated that according to the Generative CV-Phonology model, a vowel always functions as a syllable nucleus. Therefore, in (67), vowel insertion in the LWs results in increasing the number

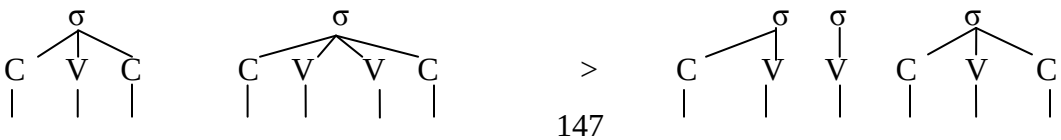
of syllables from two in the SWs to three in the LWs. Having inserted the vowel, the final consonant of the CVC syllable is moved to be re-associated to the new syllable to form a CV syllable. Thus, closed syllables at final positions of (67 a, b, d) are made open by vowel insertion. Similarly, closed syllables at medial positions in (67 c, d) are made open through vowel insertion. This is in line with Schane's (1973:211) statement that if a segment is deleted or inserted, the total syllable structure is changed. The examples in (67) demonstrate that when some loanwords with CVC syllables are borrowed into Kiswahili, they are changed to open syllables[2], in this case, the optimal syllable CV through the application of vowel insertion rule.

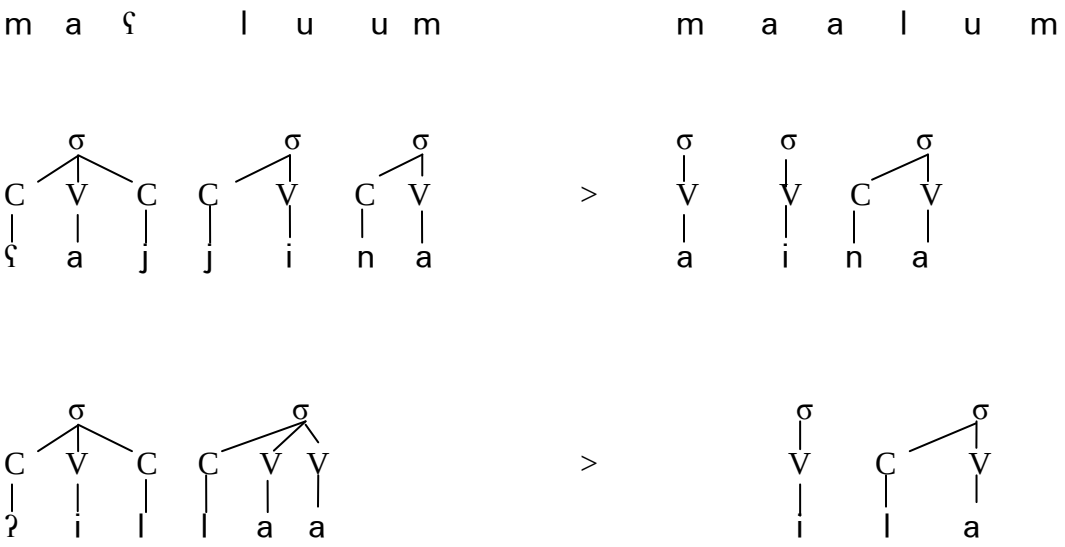
We also observe that some CVC syllables of the sourcewords are modified to be an open syllable, V, in Kiswahili loanwords such as:

(68)

				Kiswahili Gloss
a.	/niʕma/	>	/nɛɛma/	grace
b.	/maʕluːm/	>	/maalum/	special
c.	/ʕajjina/	>	/aina/	a kind of something
d.	/ʔillaː/	>	/ila/	but/except





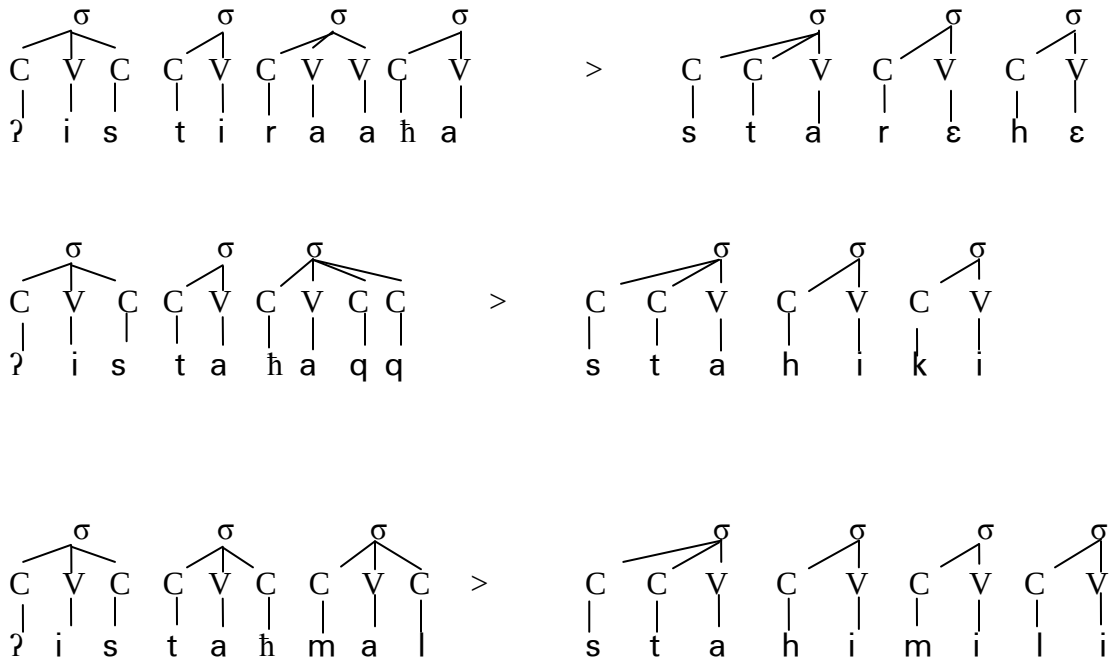


Syllable transformations in (68) demonstrate the realization of V syllable in the loanwords via phonological processes, mainly segment substitution and deletion at syllable initial and final positions. In (68 a, b), the syllable final pharyngeal fricative /ʕ/ is replaced by a [-high, - low, - back] and [+low] vowel respectively, thus ending up with two short vowels in separate syllables. The pharyngeal fricative /ʕ/ is replaced because it is not one of Kiswahili segments. In (68 c, d), two processes occur to realize the V syllable in the loanwords. First, the pharyngeal fricative /ʕ/ and glottal stop /ʔ/ respectively, are deleted. Second, syllable final consonants /j/ and /l/ are deleted leaving the syllables with vowels only, hence making the syllable open. In the case of (68 c), the initial consonant /j/ of the following syllable is also deleted, to yield a V syllable. In this study, we find that some of the loanwords with CVC syllable are modified to Kiswahili syllable V as exemplified in (68). In this case, we argue that the V syllable structure is preferred since Kiswahili does not have both the pharyngeal fricative /ʕ/ and glottal stop /ʔ/. For this reason, the MSA segments are either deleted or replaced by a vowel. In the case of (68 c, d), syllable final consonants are deleted to make the syllables open.

We also have observed the syllable structure CVC changing to CCV in Kiswahili loanwords, as shown in the following examples:

(69)

			Kiswahili Gloss
a. /ʔistiraːħa/	>	/starɛhɛ/	leisure/luxury/comfort
b. /ʔistaħaqq/	>	/stahiki/	to deserve
c. /ʔistaħmal/	>	/stahimili/	to bear with



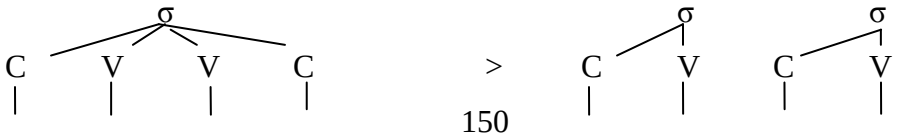
In (69), the glottal stop /ʔ/ and [+high, -back] vowel /i/ in the word initial CVC syllables are deleted leaving only the final consonant of the syllable. The final consonant gets re-associated to the following syllable, thus forming a CCV syllable. In our view, the glottal stop /ʔ/ is first deleted for phonemic reason. Since VC syllable is foreign to Kiswahili, the vowel is also deleted. As a result, the final alveolar fricative /s/ is moved to be dominated

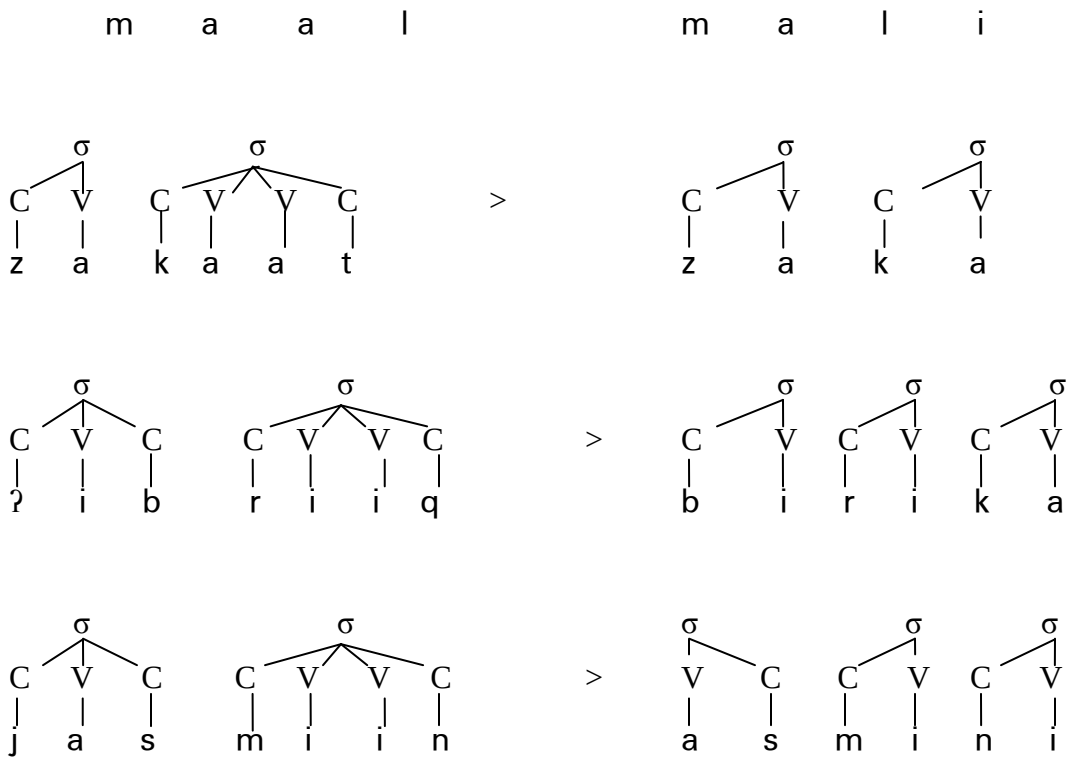
by the following syllable, which yields a CCV syllable comprising syllable initial consonant cluster sta-. Consequently, st- cluster, which is not permissible in Kiswahili words of Bantu stock, becomes one of the PSSCs in Kiswahili. This is because st- is a permissible syllable initial consonant cluster in Kiswahili loanwords. The CVC syllable in (69) bearing the segments ʔis- is altered by first of all deleting the glottal stop for phonemic reasons. This leaves the VC syllable whose vowel is also deleted leaving the consonant alone. The consonant is then re-associated to the following syllable to realize CCV syllable with a foreign initial consonant cluster st-. According to Schane (1973:208), not all the natural rules for preferred syllable structure necessarily yield the optimal structure with consonant-vowel alternation, there are exemptions. The examples in (69) confirm this statement in which the phonological processes have not obtained the optimal syllable. This syllable transformation is limited to a few loanwords from MSA in which CCV syllable is preferred over VC syllable.

CV:C syllable also undergoes processes that change it to the open CV structure. This is apparent in Kiswahili loanwords as given in the examples below:

(70)

			Kiswahili Gloss
a. /maːl/	>	/mali/	wealth
b. /zakaːt/	>	/zaka/	tithe
c. /ʔibriːq/	>	/birika/	kettle
d. /jasmiːn/	>	/asmini/ [3]	jasmine flower



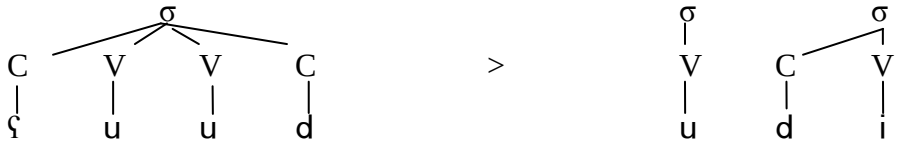


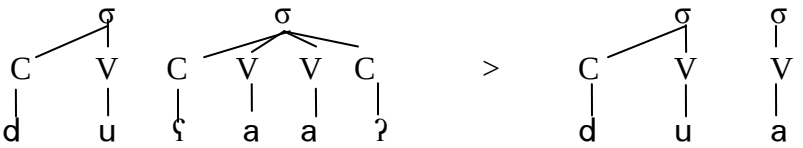
In (70), two phonological processes take place to change the CV:C syllables to CV. First, long vowels are shortened and are therefore realized as short vowels. All the SWs in (70) end with a closed syllable which is not permissible in Kiswahili. After vowel shortening, a vowel is inserted at word final position to make the syllables open and thereby obtain the preferred syllable. In the case of (70 c), a vowel is inserted between the bilabial stop /b/ and the trill /r/ to break up a possible consonant cluster and thereby form a CV syllable. This happens following the glottal stop and [+high, -back] vowel deletion in the first syllable of the SW. The consequence of these processes is the realization of an open syllable, CV, in particular.

The CVːC syllable is also changed to the V syllable structure. We find this change in Kiswahili loanwords such as:

(71)

			Kiswahili Gloss
a. /ʕuːd/	>	/udi/	incense of aloe wood
b. /dˁaʕiːf/	>	/ðaifu/	weak
c. /duʕaːʔ/	>	/dua/	prayer





In (71), syllable V is realized through three processes. The first process is glottal stop /ʔ/ and pharyngal fricative /ʕ/ deletion because they are not part of the Kiswahili phonemic inventory. The second process is long vowel shortening as they are not preferred in Kiswahili. These two processes affect all the items of (71). The third process is vowel insertion at word final position which affects (71 a, b) only with the aim of making the words to end with an open syllable, as preferred by the language.

3.1.1.2 Vowel Shortening

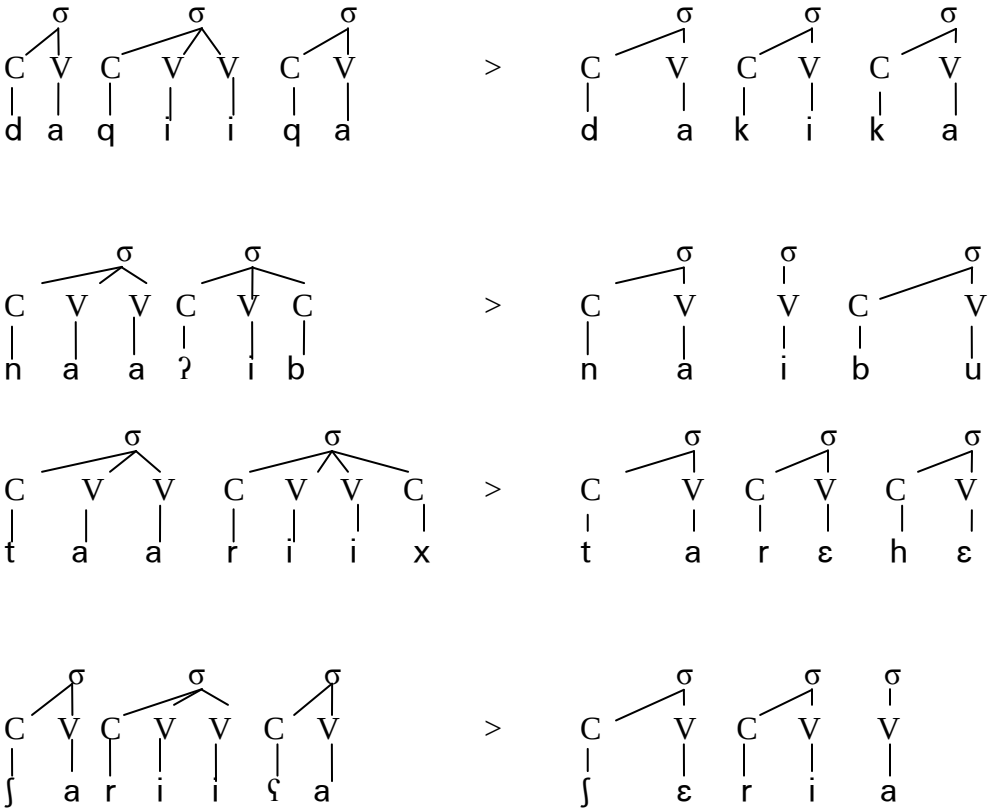
The MSA syllables with long vowels are CVː and CVːC, as explained in Chapter Two. As has been observed in some of the data discussed in 3.1.1.1, long vowels are usually shortened when they get into Kiswahili. This is because long vowels are not a characteristic of Kiswahili. Words such as /muumba/ and /maafa/ in Kiswahili do not have long vowels rather they are two vowel sequences. In this case, the vowels are dominated by two different syllables. In other words, the first syllable of the two words has one mora each, that is, CV-. Likewise, the second syllable of the two words has one mora each, that is, V. The length of the vowels in the first and second syllable is equal, only that the vowels are dominated by separate syllable nodes. In this study, we observe that long vowels are reduced to short vowels either by shortening them within one syllable or by splitting them to obtain two separate syllables. Iribemwangi (2010:191) asserts that long vowel shortening in loanwords is a regular occurrence in Kiswahili with the aim of attaining the preferred syllable structure. We observe that in Kiswahili loanwords, CVː syllables are changed to CV, V, and CCV syllables; while CVːC syllables are modified to CV and V syllables.

The CVː syllable is changed to CV as seen to occur in the following examples of Kiswahili loanwords:

(72)

			Kiswahili Gloss
a. /daqiːqa/	>	/dakika/	a minute of time
b. /naːʔib/	>	/naibu/	deputy
c. /taːriːx/	>	/tarɛhɛ/	date

d. /ʃariːʕa/ > /ʃɛria/ law

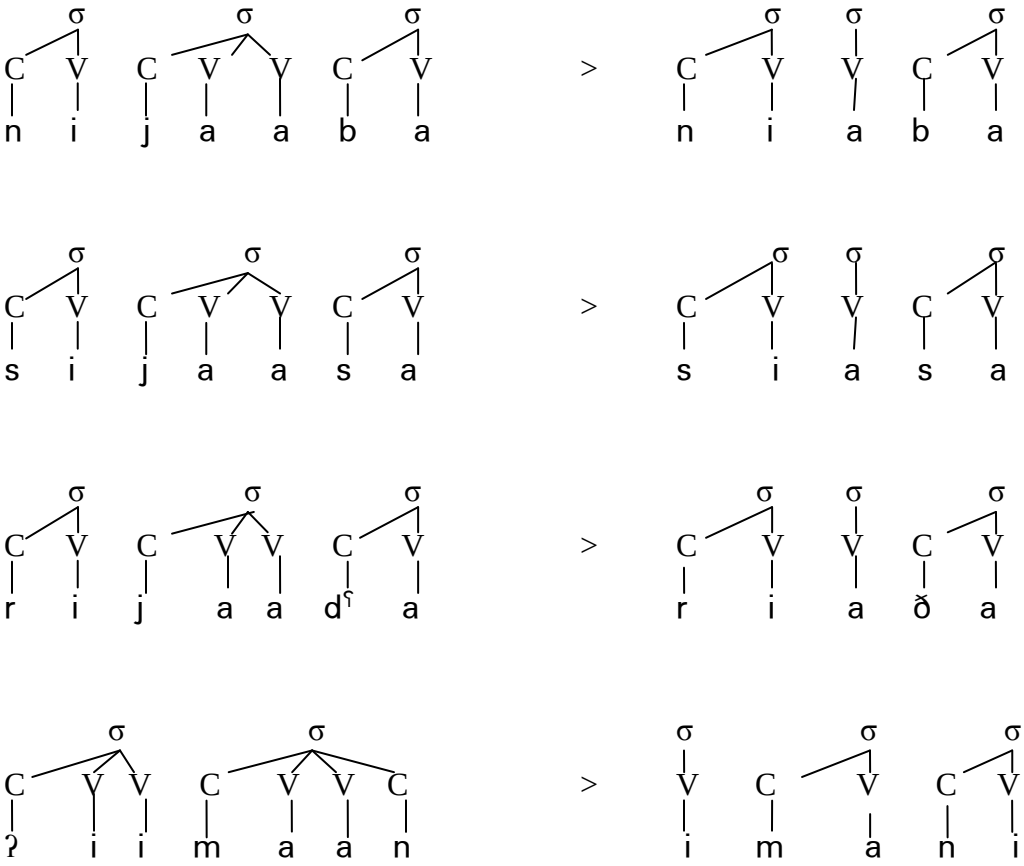


In (72), one phonological process is used to realize the CV structure in the loanwords. As is evident in all the items of (72), the long vowels in the CVː syllables are shortened. This is in line with Iribemwangi's (2010:190) view who states that when items with long vowels are loaned into Kiswahili, the long vowel is usually shortened. Given that long vowels and the syllable CVː are not part of Kiswahili, the long vowels are reduced to short ones. Thus, vowel shortening process results in achieving the optimal preferred Kiswahili syllable in the loanwords.

Other CVː syllables are changed to a short syllable V, as in the following instances:

(73)

			Kiswahili Gloss
a. /nijaːba/	>	/niaba/	on behalf of
b. /sijaːsa/	>	/siasa/	politics
c. /rijaːdˤa/	>	/riaða/	athletics
d. /ʔiːmaːn/	>	/imani/	faith



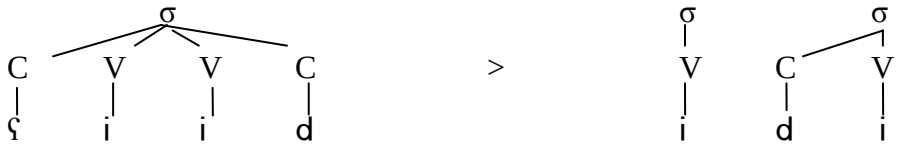
In (73), all the items have their long vowels shortened so as to achieve a short vowel. The second process is palatal glide /j/ deletion that happens in (73 a, b, c), leading to the realization of a V syllable at the expense of the optimal preferred CV syllable. The palatal glide is deleted in an inter-vocalic environment in the loanword to pave way for the

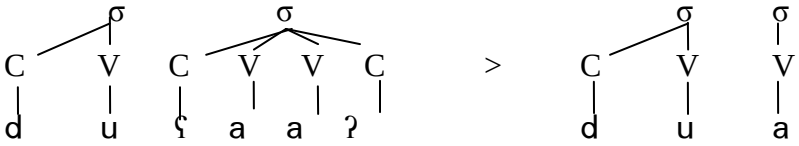
realization of V syllable. The examples in (73 a, b, c) indicate that at times the V syllable is preferred more than the optimal syllable in Kiswahili. According to Schane (1973:211), vowel coalescence is one of the PSSRs. In the environment where a high and a low vowel are adjacent to each other, the process would have occurred to realize the optimal syllable CV. This process happens in Kiswahili words for instance, /mɛnɔ/ (teeth). However, in the case of (73 a, b, c) vowel coalescence does not occur, rather the two vowels (after deleting the palatal glide) are articulated in separate syllables. In our view, the possible reason could be the order of the vowels. In the underlying structure of the word /mɛnɔ/, the low vowel precedes the high vowel. But in (73 a, b, c) the order is reversed such that the high vowel precedes the low vowel. In such an environment vowel coalescence does not happen in Kiswahili, for example, in words such as /miaka/ (years) and /mialɛ/ (rays). In the environment of a high vowel preceding a low vowel in some Kiswahili words, usually a bilabial glide is formed, for example, in the words /kwaŋgu/ for *mine (of a place*) and /mwana/ for *child*. At the same time, both the palatal glide /j/ and [+high, -back] vowel /i/ are [+high] in terms of tongue height. This means that two [+high] segments are neighbouring each other. For this reason, one of the segments is deleted, in this case, the palatal glide. The glottal stop /ʔ/ in (73 d) is deleted leaving the initial syllable with V structure. The glottal stop is deleted because Kiswahili does not have the segment in its phonemic inventory. The two long vowels are also shortened since Kiswahili does not have long vowels. These processes end up yielding the V syllable in the loanword of item (73 d).

The long vowels in CVːC syllable are reduced to V syllable structure in Kiswahili loanwords such as:

(74)

			Kiswahili Gloss
a. /ʕiːd/	>	/idi/	Idd festival
b. /dˁaʕiːf/	>	/ðaifu/	weak
c. /duʕaːʔ/	>	/dua/	prayer



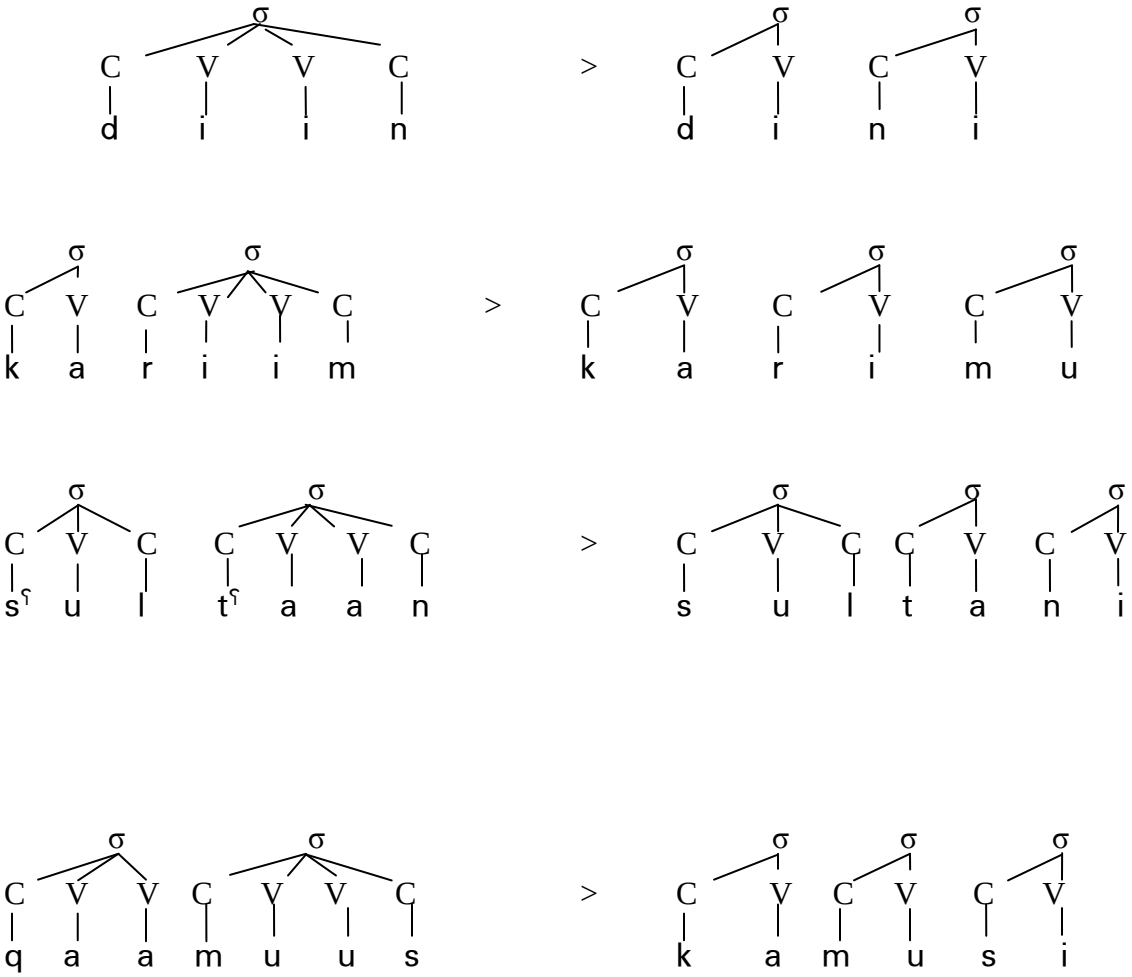


In (74), the glottal stop /ʔ/ and pharyngeal fricative /ʕ/ are deleted because they are not part of Kiswahili phonemic inventory. The deletion is followed by reduction of long vowels to short vowels. In (74 a, b), a vowel is inserted at word final position in order to make the syllable open and to split the previously single syllable into two syllables, thus obtaining a V syllable.

CV:C syllable type is changed to CV by shortening the long vowels in Kiswahili loanwords such as:

(75)

			Kiswahili Gloss
a. /diːn/	>	/dini/	religion
b. /kariːm/	>	/karimu/	kind person
c. /sˤultˤaːn/	>	/sultani/	sultan
d. /qaːmuːs/	>	/kamusi/	dictionary



In (75), the long vowels are shortened causing the realization of CV syllable in all the items. Since the SWs have closed vowels, a vowel is inserted at word final position to

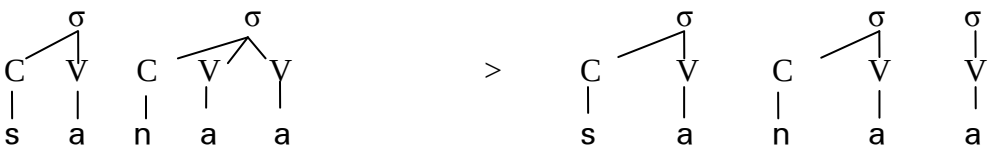
make the closed syllables open, thus realizing the preferred syllable CV. Iribemwangi (2010:190) asserts that the issue of long vowels' existence in Kiswahili has not been handled conclusively. However, we are of the opinion that long vowels do not exist in Kiswahili. This is because it has been observed in our data that there is no long vowel and no syllable with a long vowel in Kiswahili words of Bantu origin. For this reason, the long vowels in (75) are reduced to short single vowels. Therefore, the data in (75) confirms our findings that Kiswahili has no long vowels. The long vowels that get into Kiswahili in the loanwords are either shortened or split into short vowels.

3.1.1.3 Vowel Splitting

In this study, we have also observed splitting of long vowles in Kiswahili loanwords as in the following examples:

(76)

				Kiswahili Gloss	MSA Gloss
a.	/sanaː/	>	/sanaa/	art	exaltedness[4]
b.	/zinaː/	>	/zinaa/	adultery	
c.	/ʕaːdil/ person	>	/maadili/	virtues	virtuous



In (76), the long vowel /aː/ is split into two short vowels resulting in two syllables CV-V.

In particular, a bilabial nasal is inserted at word initial position of (76 c) with the aim of avoiding a vowel sequence. The bilabial nasal insertion results in obtaining the optimal preferred syllable CV. Vowel splitting in the loanwords occurs for the simple reason that Kiswahili does not contain long vowels even in its words of Bantu origin. Contrary to the examples in (75), the long vowels in (76) are split instead of being shortened. As demonstrated in (76), the split vowel ends up yielding two separate vowels that are dominated by separated syllable nodes. One of the vowels is in CV syllable, and the second vowel is in the V syllable. In our view, these vowels are split for psychological reasons. Shortening the long vowels would result in other Kiswahili words, for example, /sana/ and /zina/, which would cause semantic conflicts.

3.1.2 Elimination of Final Consonant Cluster

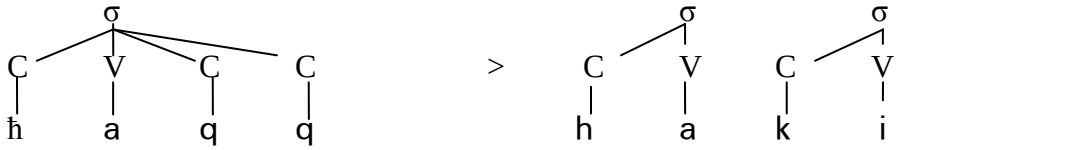
CVCC is the only MSA syllable with a consonant cluster at final position. When the syllable comes into Kiswahili, it is modified by removing the syllable final consonant cluster. In Chapter Two, it has been observed that Kiswahili words of Bantu origin do not have closed syllables, and that is why some closed syllables are made open. In accordance with the Generative CV-Phonology model, consonant clusters at word final position are NSSCs in Kiswahili. This means that they are not allowed in Kiswahili

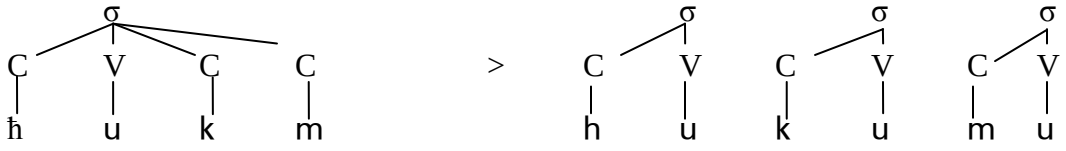
words of Bantu stock and loanwords. For this reason, the syllable final consonant clusters are eliminated in the RL either by consonant deletion, consonant substitution or vowel insertion. We observe that in a bid to eliminate syllable final consonant clusters, the CVCC syllable is modified to the preferred optimal CV and V syllables in Kiswahili.

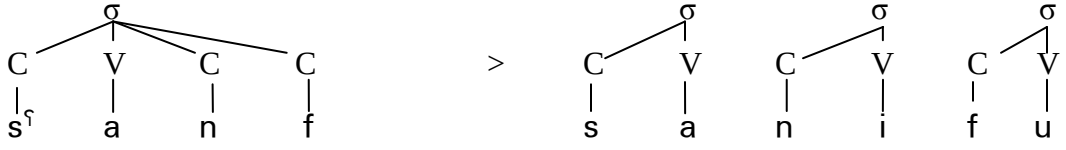
It is observed that in Kiswahili loanwords, CVCC syllable structure is never retained. Instead, all the SWs with this syllable are changed to other syllable types. Many of them are changed into CV structure in loanwords such as:

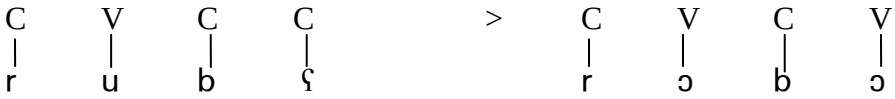
(77)

			Kiswahili Gloss
a. /ħaqq/	>	/haki/	justice/right
b. / ħ ukm/	>	/hukumu/	judgement
c. /sˤanf/	>	/sanifu/	standard/skilled
d. /rubʕ/	>	/rɔbɔ/	quarter







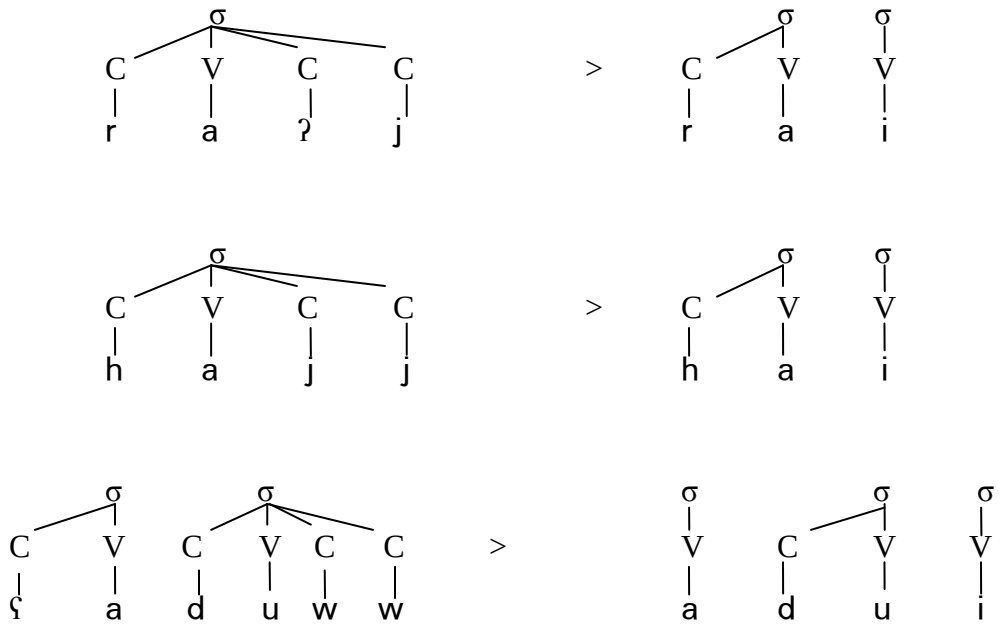


In (77), the final consonant sequences are eliminated and CV syllable structure is realized. The CV syllable is achieved by vowel insertion, consonant deletion and substitution. In (77 a), the geminate consonant cluster is reduced to a single consonant by deleting one member of the consonant cluster /q/. In (77 b, c), the consonant clusters -km and -nf are separated by inserting a vowel between them. In (77 d) the pharyngeal fricative is replaced by a [-high, -low, +back] vowel /ɔ/, thus making the syllable open. A vowel is inserted at word final positions of all the items in (77) to make the final syllables open. This string of processes aims at removing final consonant clusters, leading to the realization of the optimal CV syllable in the loanwords.

In this study, we have observed that CVCC syllable structure is also changed to CV$V structure in Kiswahili loanwords as seen in the examples below:

(78)

			Kiswahili Gloss	MSA Gloss
a. /baʕð/	>	/baaði/	some	
b. /raʔj/	>	/rai/	to plead	opinion
c. /hajj/	>	/hai/	alive	
d. /ʕaduww/	>	/adui/	enemy	



MSA is one of those languages which according to Hyman (1975:190), allows consonant clusters at word final position. On the contrary, as has been observed in Chapter Two, Kiswahili allows consonant clusters only at word initial position. It is for this reason that the MSA final consonant clusters are removed in all items of (78). In (78 a), a substitution process occurs to obtain the V syllable. The pharyngeal fricative is replaced by a [+low] vowel /a/ which results in the word having two short vowels in separate syllables. This is followed by insertion of a [+high, -back] vowel /i/ at word final position to form an open syllable. In (78 b), there is the glottal stop /ʔ/ deletion to eliminate the consonant cluster. The remaining glide is then replaced by a [+high, -back] vowel in order to make the final syllable open. The substitution process results in splitting the syllable into two, the last having the V structure. In (78 c, d), the final geminate consonant clusters -jj and -ww are eliminated by deleting one member each of the

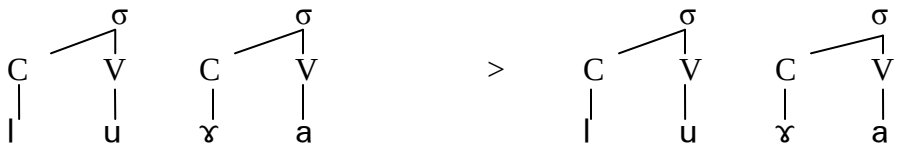
clusters. The remaining glides are substituted with [+high, -back] vowels /i/, thus yielding two syllables CV and V.

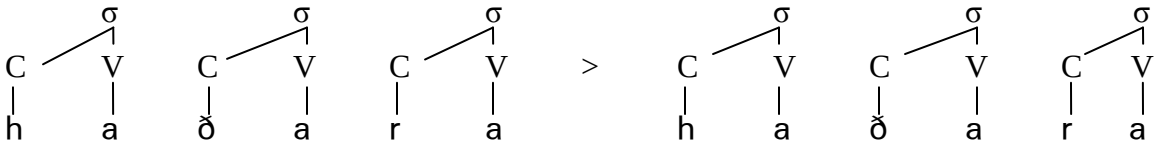
3.2 Retention of CV Syllable

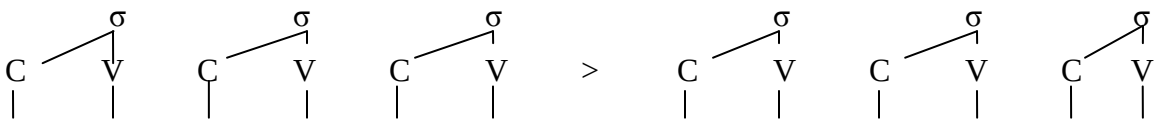
In this study, we have found instances where the CV syllable structure of MSA sourcewords is retained in the loanwords. In the first place, CV syllable retention is observed in whole words, in which the sourceword is not retailored at all. As has been stated in Chapter One, this type of borrowing is referred to as pure or complete borrowing. This occurs in a number of sourcewords that contain CV syllables only, such as:

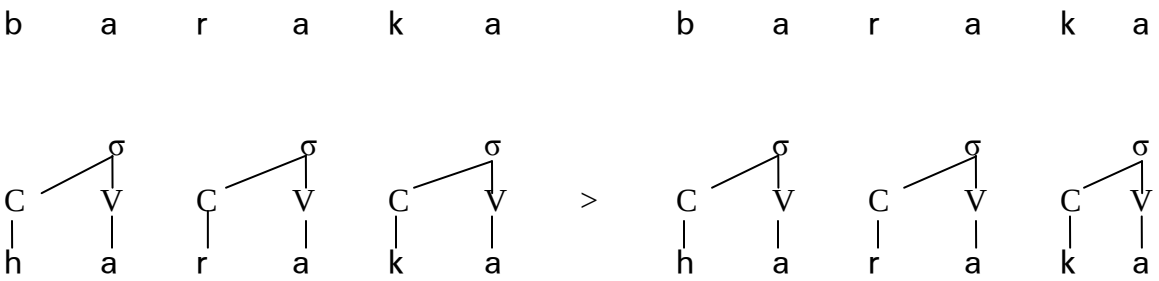
(79)

				Kiswahili Gloss	MSA Gloss
a.	/luɤa/	>	/luɤa/	language	
b.	/hadˁara/	>	/haðara/	public	
c.	/baraka/	>	/baraka/	blessing(s)	
d.	/haraka/	>	/haraka/	fast/quickly	movement







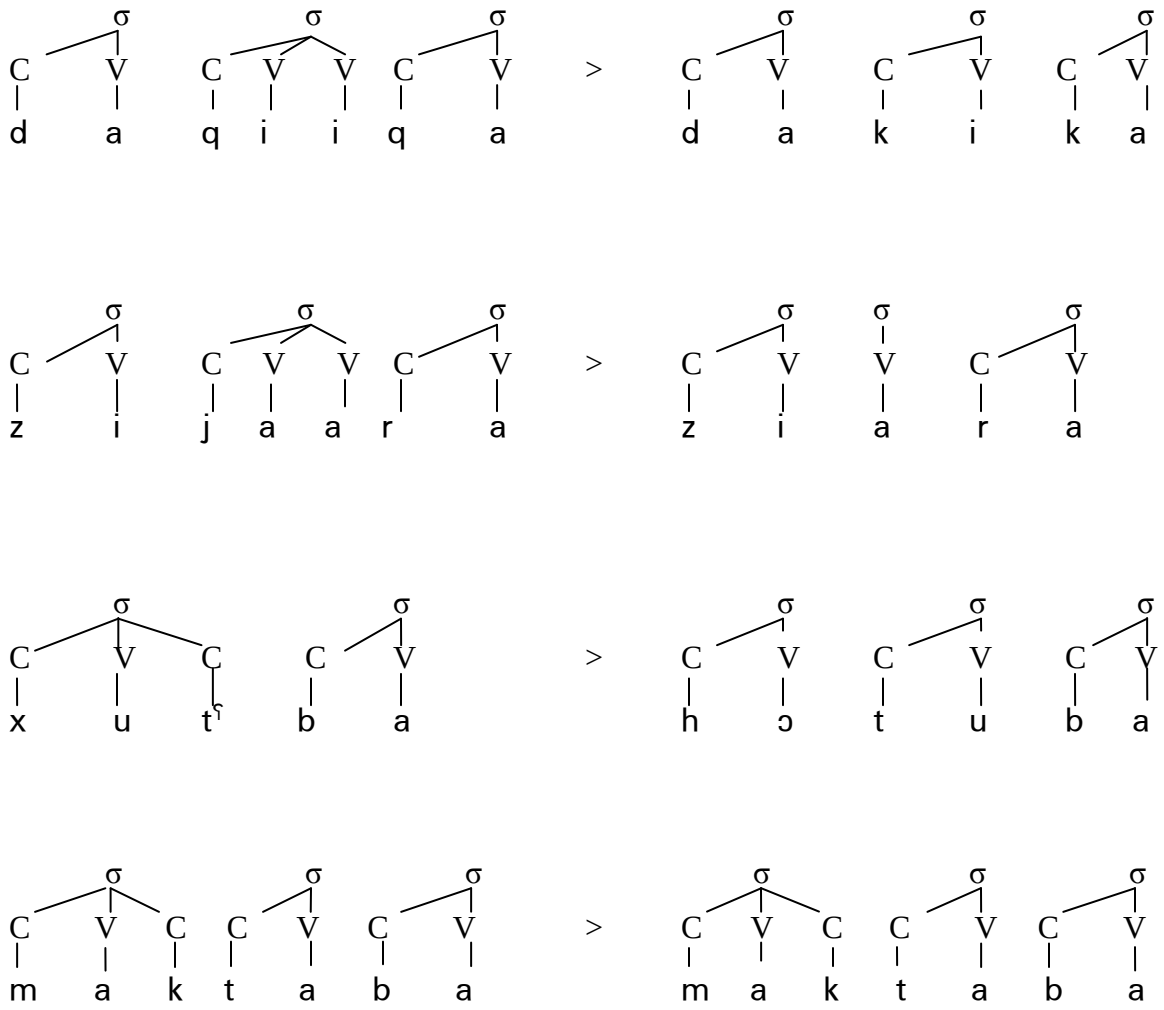


In (79), the CV syllable in the sourcewords is retained in the loanwords since there is no phonological change taking place. We note that adaptation has not taken place in (79) because CV is the optimal preferred syllable in Kiswahili. In this case, the loanwords are already in the preferred structure and so Kiswahili adopts them as they are. This is in line with the views expressed by Anttila (1972: 160), who states that the recipient language is the one that imposes its influence on the loanword. We observe that the bulk of loanwords in Kiswahili possess the preferred syllable CV by retention and mostly by adapting to the syllable. There are, however, some exceptions where the CV syllable is not retained.

MSA sourcewords which partly contained CV syllable also retained the syllables in Kiswahili loanwords. We have observed from our data that in many cases, every CV syllable in the sourceword is retained in Kiswahili loanwords with a few exceptions. CV syllable retention is demonstrated in the following examples of Kiswahili loanwords:

(80)

				Kiswahili Gloss
a.	/daqiːqa/	>	/dakika/	a minute
b.	/zijaːra/	>	/ziara/	a tour/visit
c.	/xutˁba/	>	/hɔtuba/	speech/address
d.	/maktaba/	>	/maktaba/	library

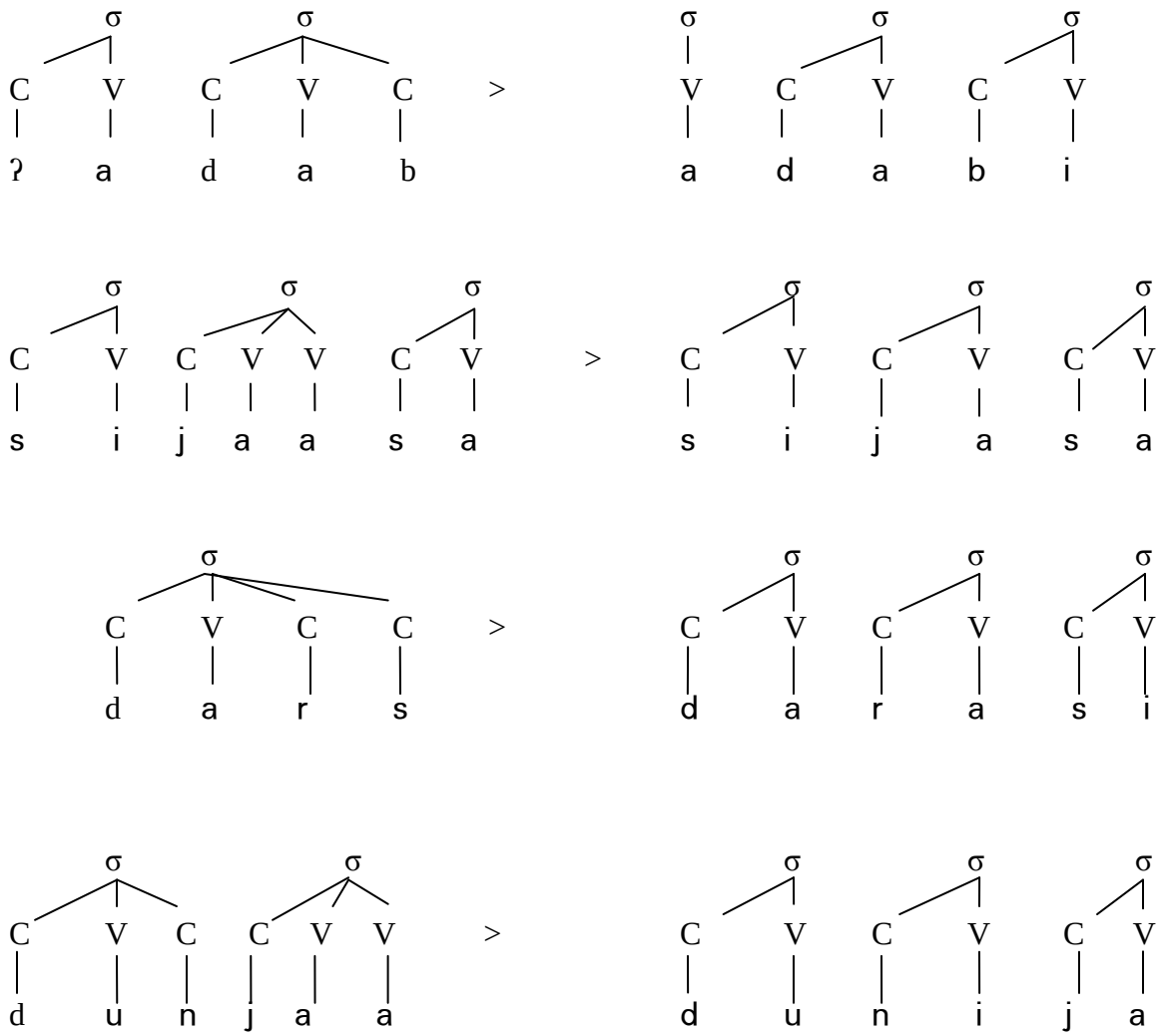


CV syllable retention is not unique to Kiswahili, as it happens in other languages as well. In Hausa, a Chadic language spoken in Nigeria, West Africa, CV syllable remains as it was in the loanword, or else it is changed to CV type. This is because CV is the optimal syllable in all languages. The CV syllable is observed in Hausa loanwords borrowed from MSA[5] as shown in the following examples:

(81)

	MSA		Hausa	Gloss
a.	/ʔadab/	>	/adabi/	manners

b.	/sija:sa/	>	/sijasa/	politics
c.	/dars/	>	/darasi/	lesson
d.	/dunja:/	>	/dunija/	world/earth

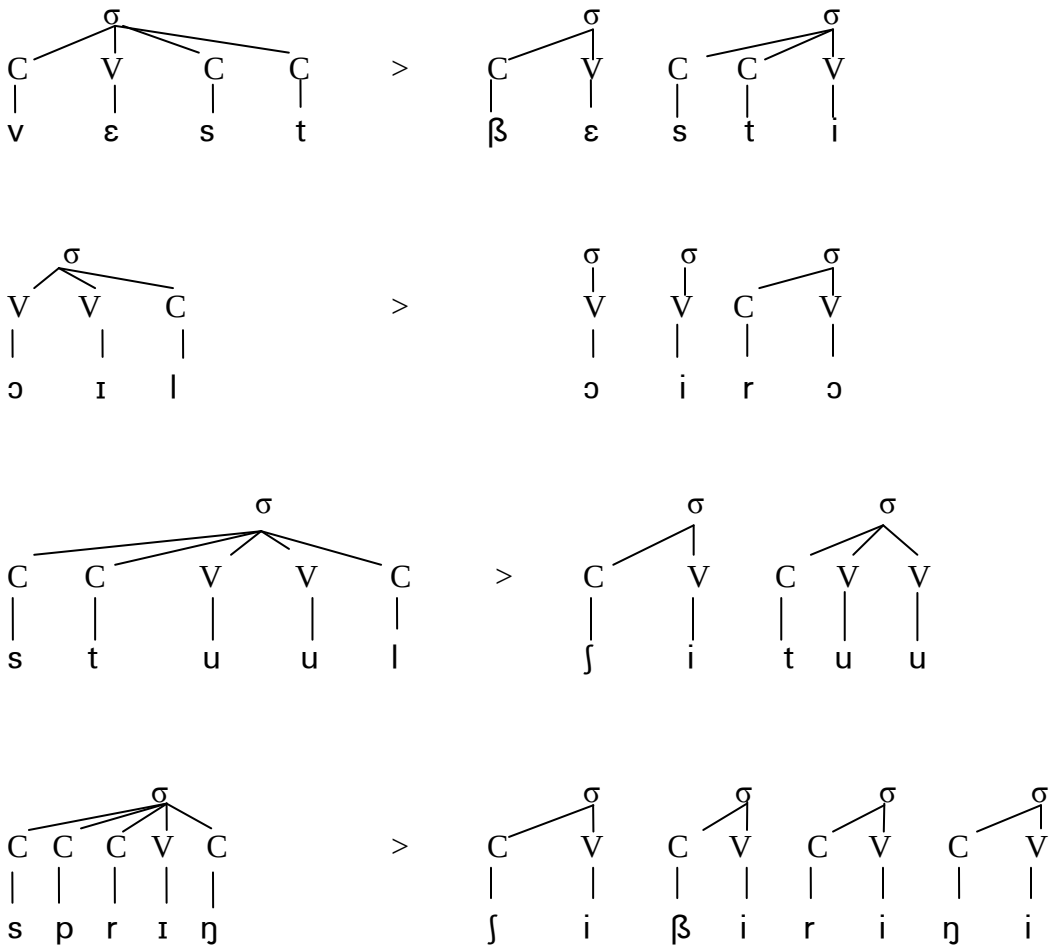


The same applies to other Bantu languages. In Kitharaka, loanwords borrowed from English, normally have their closed syllables made open to conform to the syllable structure of the language (wa Mberia, 1993:191-204), for instance:

(82)

English	Kitharaka	Gloss

a.	/vɛst/	>	/ßɛsti/	vest
b.	/ɔɪl/	>	/ɔirɔ/	oil
c.	/stuːl/	>	/ʃituː/	stool
d.	/sprɪŋ/	>	/ʃißiriŋi/	spring

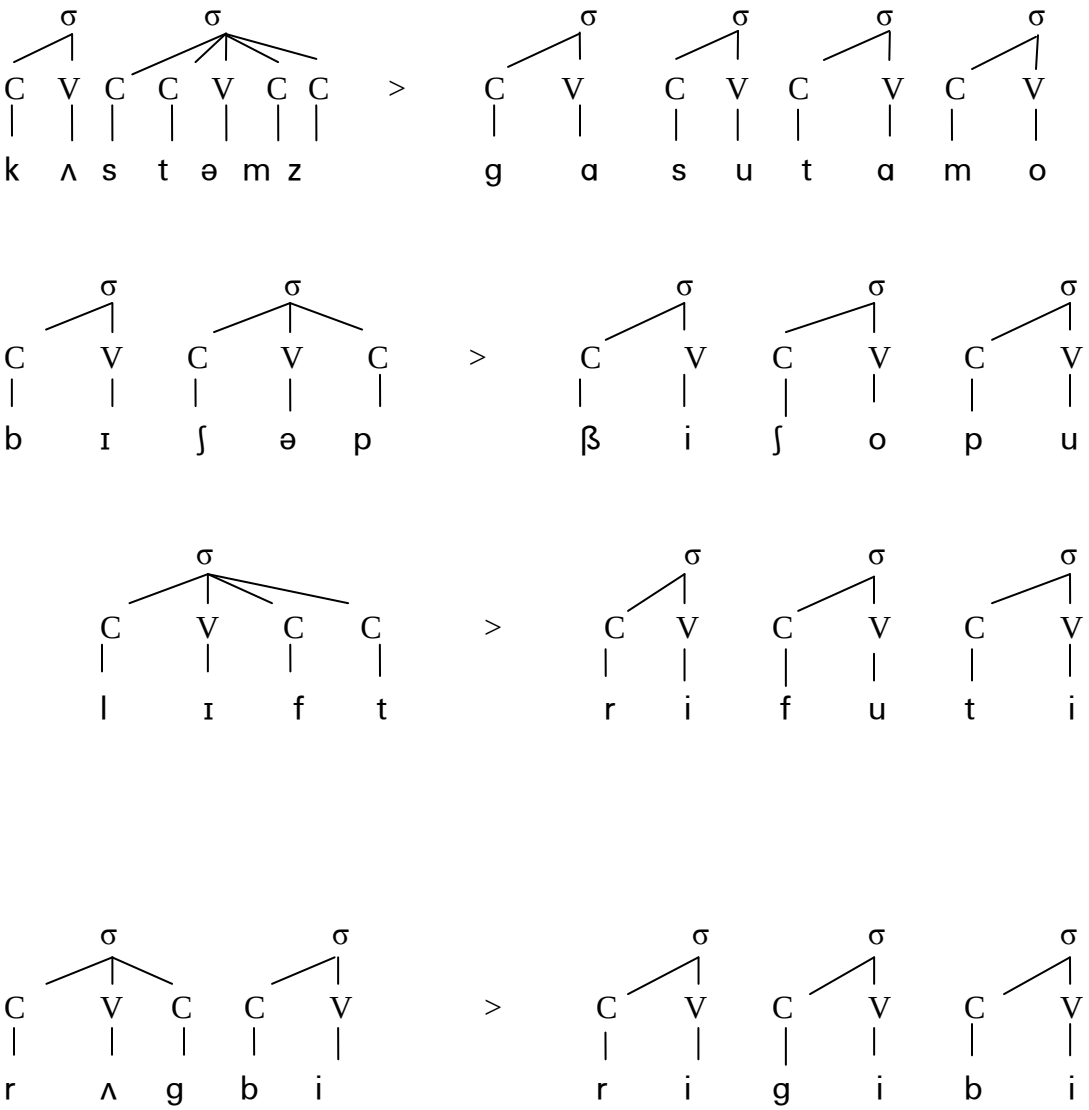


Kinyarwanda also modifies loanwords from English by making their closed syllables open as in the following examples:

(83)

	English		Kinyarwanda	Gloss
a.	/kʌstəmz/	>	/gasutamo/	customs
b.	/bɪʃəp/	>	/ßiʃopu/	bishop
c.	/lɪft/	>	/rifuti/	lift

d. /rʌgbi/ > /rigibi/ rugby



The examples in (81 - 83) demonstrate that languages in general prefer open syllables to closed ones. This is seen where loanwords being borrowed with complex syllables, are modified to CV or any other open syllable permitted in the languages. This explains why the majority of the loanwords from MSA are retailored to CV syllable in Kiswahili.

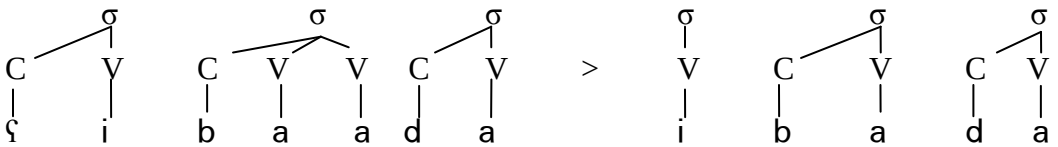
3.3 Exceptions

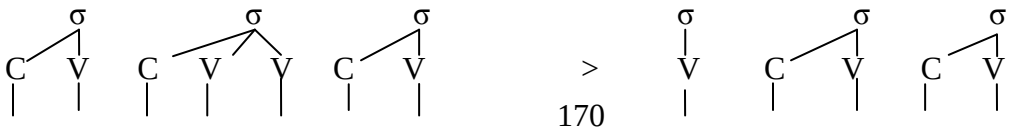
So far we have discussed how MSA syllable structures are retailored to conform to Kiswahili syllable structure through syllable transformations and the application of phonological processes. Yet, we notice exceptional cases where loanwords with syllables that are permissible in Kiswahili (CV syllable) are modified to other Kiswahili syllables and MSA's syllable. It has been observed that at times CV syllables are changed to V and CCV syllables. In other instances, CV syllables are changed to CVC syllables in the loanwords.

In some of the loanwords the CV syllable structure is changed to V syllable in Kiswahili, for instance:

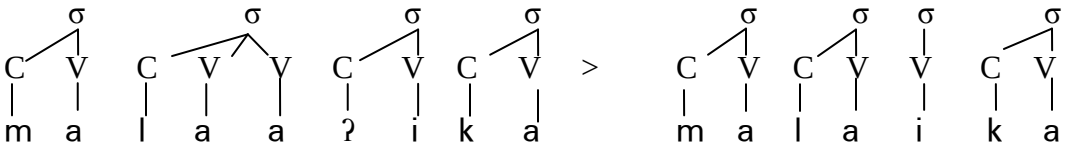
(84)

			Kiswahili Gloss
a. /ʕibaːda/	>	/ibada/	worship/religious service
b. /ʕadʒab/	>	/aɬabu/	wonder
c. /ʔiʃaːra/	>	/iʃara/	sign
d. /malaːʔika/	>	/malaika/	angel





ʔ i ʃ a a r a i ʃ a r a

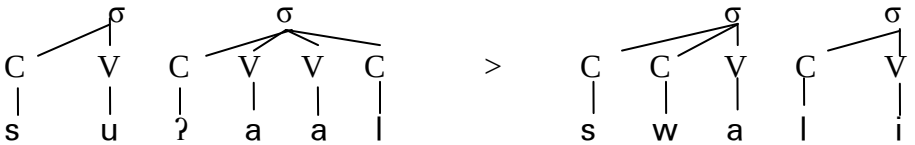


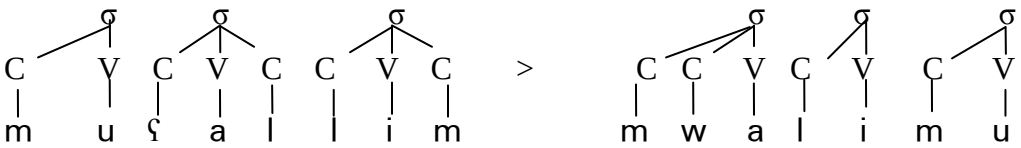
In (84), the V structure is realized mainly as a result of deleting the pharyngeal fricative /ʕ/ and glottal stop /ʔ/. In these examples, the segments are neither borrowed nor substituted in Kiswahili. It is noted here that although the change is not motivated by syllable structure rule, it leads to the realization of V syllable. In our opinion, the change is motivated by a phonemic reason, that is, the MSA segments are not part of Kiswahili phonemic inventory.

We have observed two cases in the data where the CV syllable in the MSA sourceword is changed to become CCV in the loanwords:

(85)

			Kiswahili Gloss
a. /suʔaːl/	>	/swali/	question
b. /muʕallim/	>	/mwalimu/	teacher



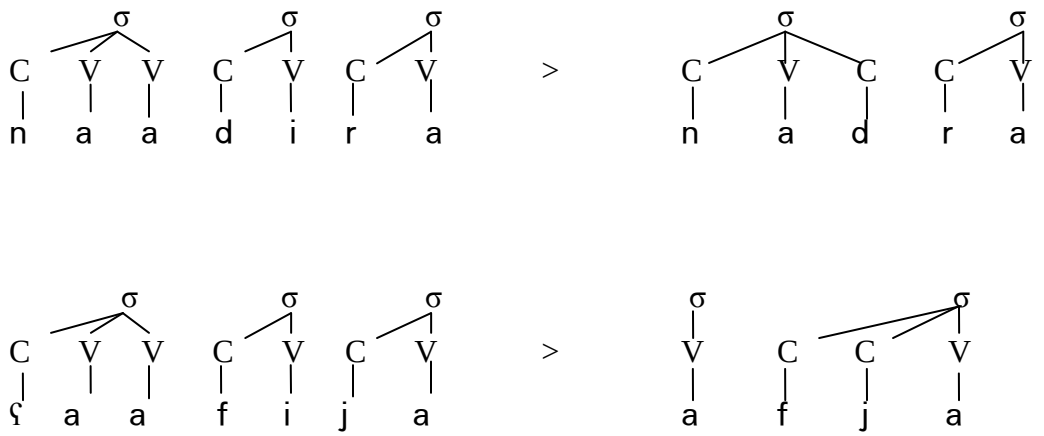


In (85), CCV syllable is obtained simply as a result of deleting the glottal stop /ʔ/ and pharyngeal fricative /ʕ/. This deletion results in a sequence of high and low vowels -ua- across the two syllables. In our view, Kiswahili usually does not allow strings of two or more vowels, also known as vowel sequences within a syllable. In other words, Kiswahili does not permit a sequence of two or more vowels to be domintated by one syllable node. For this reason, the [+high, +back] vowel /u/ is replaced by a [-coronal] glide /w/ in order to break the vowel sequences. According to Schane (1973:209), glide insertion to break up vowel clusters is one of the PSSRs. Thus, the deletion of MSA segments in (85) creates an environment that triggers glide insertion process leading to the realization of CCV syllable.

Two other exceptional cases are seen where CV syllables are changed to CVC and CCV in the following Kiswahili loanwords:

(86)

			Kiswahili Gloss
a. /malika/	>	/malkia/	queen
b. /naːdira/	>	/nadra/	rare/scarce
c. /ʕaːfija/	>	/afja/	health



In (86), the sourcewords' CV syllables are changed to CVC and CCV through the deletion of a [+high, -back] vowel /i/. From the Generative CV-Phonology standpoint, removal of a syllable nucleus automatically deletes a syllable. Thus, the remaining consonants have to be associated to the neighbouring syllable. In this case, after vowel deletion, the marginal consonants /l/, /d/ and /f/ are re-associated to the syllable next to them. In (86 c), the pharyngeal fricative is also deleted and the long vowel reduced to a short vowel. The CCV syllable is achieved as a result of Kiswahili syllable constraints on syllable initial consonant clusters. The consonant cluster fj- is permitted by the Kiswahili PSSCs. Therefore, by applying the Onset First Principle, the CCV syllable is obtained in the loanword.

3.4 Stress Placement in Kiswahili Loanwords

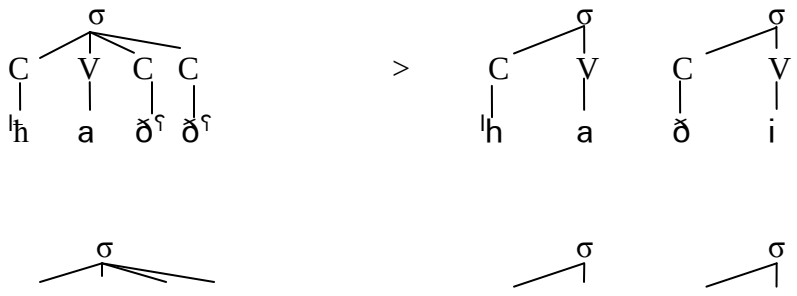
Loanwords from MSA are adapted with Kiswahili stress placement. It has been mentioned in 2.6 that Kiswahili stress placement is more definite than in MSA. We have found that all the loanwords borrowed into Kiswahili have their stress either retained or shifted to the penultimate position. Aswani (1995:68) states that stress placement on Kiswahili loanwords is on the antepenultimate syllable only. From the data used in this study, we have a different view on stress placement in Kiswahili. In our opinion, stress is marked on the penultimate syllable only, even in Kiswahili loanwords.

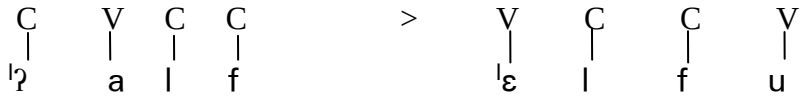
3.4.1 Stress Retention on the Penultimate Syllable

A number of loanwords that have stress marked on the penultimate syllable in the sourcewords retained it in the same position. Hyman (1975:209) states that penultimate stress is favoured over final position stress by languages. This occurs in Kiswahili loanwords derived from monosyllabic and disyllabic MSA sourcewords as exemplified below:

(87)

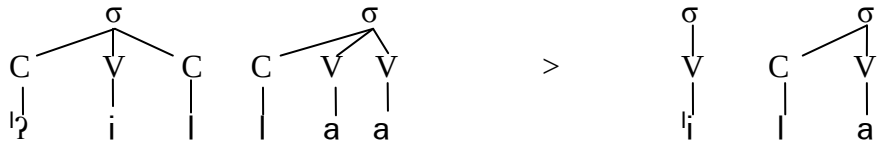
Monosyllabic sourcewords			Kiswahili Gloss	MSA Gloss
a. /ˈħaðˤðˤ/	>	/ˈhaði/	status/prestige	luck
b. /ˈʔalf/	>	/ˈɛlfu/	thousand	
c. /ˈsamn/	>	/ˈsamli/	ghee	
d. /ˈbatˤtˤ/	>	/ˈbata/	duck	





(88)

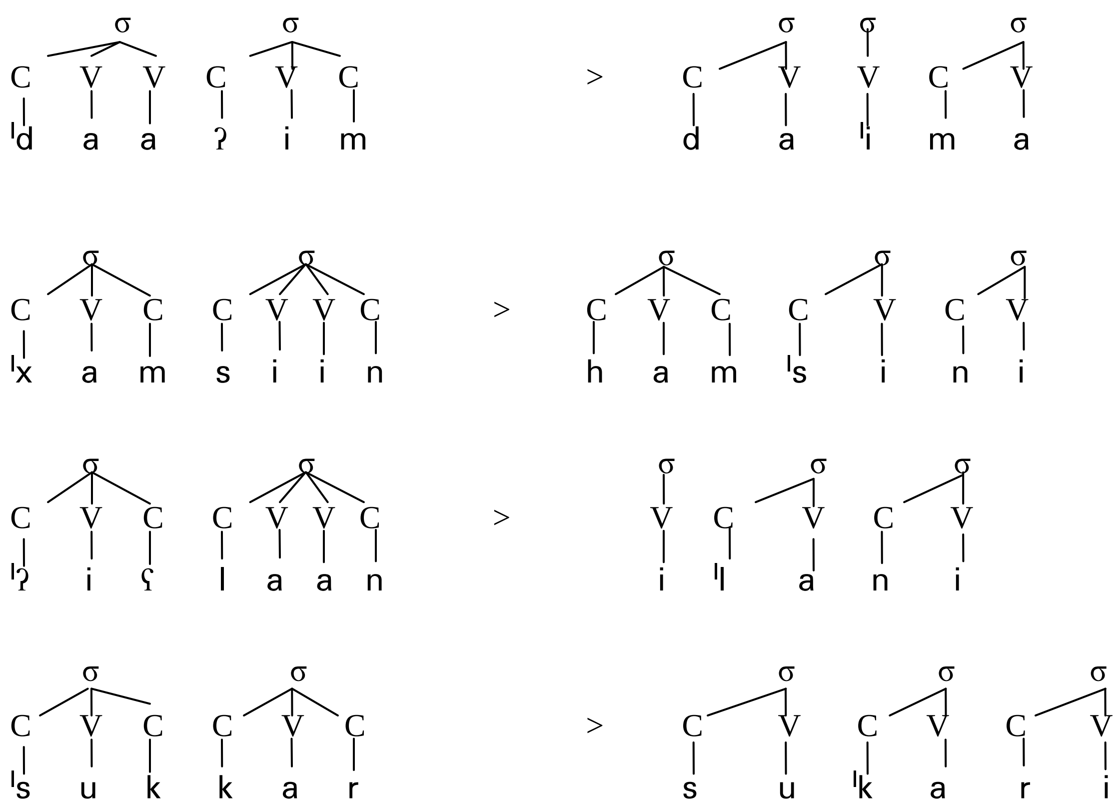
Disyllabic sourcewords			Kiswahili Gloss
a. /ˈʔillaː/	>	/ˈila/	except
b. /ˈfidˤdˤa/	>	/ˈfɛða/	silver
c. /ˈdʒumla/	>	/ˈɟumla/	total



In some instances, stress placement is marked on the penultimate syllable of both the MSA sourcewords and Kiswahili loanwords, although their positions are different. This affects Kiswahili loanwords having more syllables than their MSA sourcewords, for example:

(89)

<u>Disyllabic sourcewords</u>		<u>Kiswahili Gloss</u>
a. /ˈdaːʔim/ >	/daˈima/	always/forever/continually
b. /ˈxamsiːn/ >	/hamˈsini/	fifty
c. /ˈʔiʕlaːn/ >	/iˈlani/	notice/caution
d. /ˈsukkar/ >	/suˈkari/	sugar



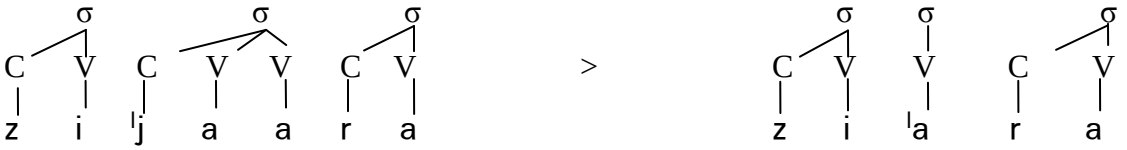
Tri-syllabic and four syllable MSA sourcewords retain their stress on the penultimate syllable in the loanwords as well, for example:

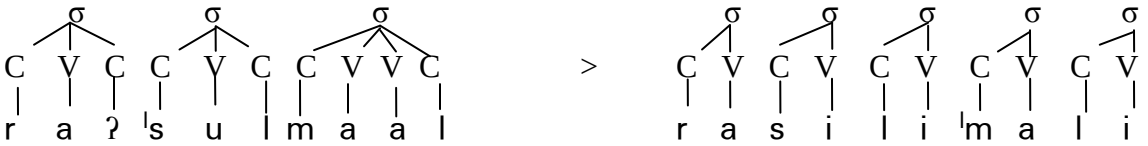
(90)

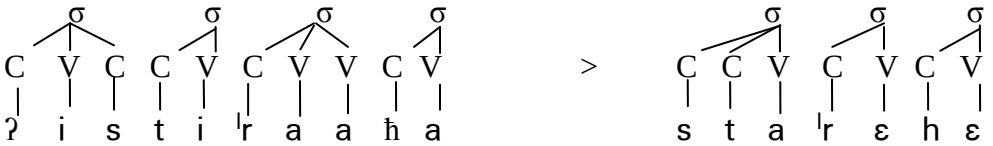
Tri-syllabic sourcewords			Kiswahili Gloss
a. /ziˈjaːra/	>	/ziˈara/	tour
b. /raʔˈsulmaːl/	>	/rasiliˈmali/	resources

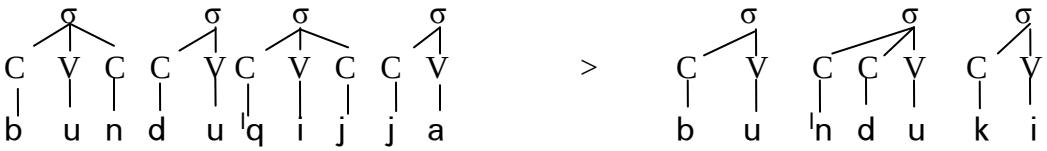
(91)

Four syllable sourcewords			Kiswahili Gloss
a. /ʔistiˈraːħa/	>	/staˈrɛhɛ/	Leisure/luxury/comfort
b. /bunduˈqijja/	>	/buˈnduki/	gun









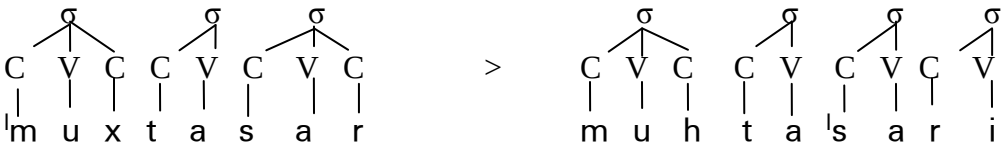
In (90- 91), we find that stress on the penultimate syllable of MSA sourcewords is retained on the penultimate syllable of Kiswahili loanwords.

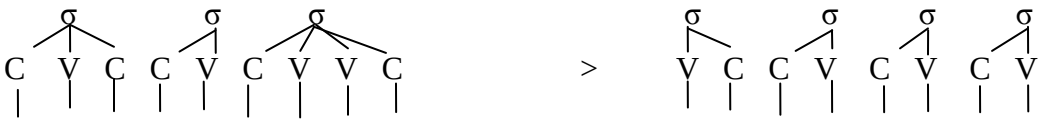
3.4.2 Stress Adaptation from Antepenultimate to Penultimate Syllable

We have also observed that stress on the antepenultimate syllable in MSA sourcewords is shifted to the penultimate syllable in Kiswahili loanwords, for example:

(92)

			Kiswahili Gloss
a. /maˈlaːʔika/	>	/malaˈika/	angel
b. /muˈkaːtaba/	>	/mkaˈtaba/	agreement/contract
c. /ˈmuxtasar/	>	/muhtaˈsari/	summary
d. /ˈʔalxamiːs/	>	/alhaˈmisi/	Thursday





ˈʔ a l x a m i i s a l h a ˈm i s i

In (92), Kiswahili stress placement has its influence on the loanwords. The loanwords which previously marked their stress on antepenultimate syllables have their prominence shifted to the penultimate position. This is because in MSA stress is mostly marked on heavy syllables, even when they are not penultimate. In Kiswahili words of Bantu origin, stress is always on the penultimate syllable, irrespective of whether it is light or heavy. This is why the antepenultimate stress is moved to the penultimate syllable in Kiswahili loanwords. In this study, we observe that many of MSA sourcewords have their stress on the penultimate syllable. In 2.6, it has been noted that the position and syllable structure is considered to determine where stress will be placed in an MSA word (Al-ani, 1970:88; Akidah, 2012:82). Even so, it is evident from the data used in this study that many MSA words have their stress on the penultimate syllable.

3.5 Syllable Weight Adaptation

As regards syllable weight, Kiswahili has great influence on the loanwords. Loanwords that have heavy syllables CVː, CVC, CVCC and CVːC are reduced to light syllables CV and V, for example:

(93)

CVː			Kiswahili Gloss
a. / tˁaːʔifa/	>	/taifa/	nation
b. /ʕaːbir/	>	/abiria/	passenger

(94)

CVC	Kiswahili Gloss	MSA Gloss

a. /ħaðˁðˁ/	>	/haði/	status/prestige	luck
b. /ħabba/	>	/haba/	little	
c. /maradˁ/	>	/maraði/	disease	

(95)

CVCC			Kiswahili Gloss	MSA Gloss
a. /ʕilm/	>	/ɛlimu/	education	
b. /sˁanf/	>	/sanifu/	standard/skilled	
c. /ʔasˁsˁubħ/	>	/asubuhi/	morning	the morning

(96)

CVːC			Kiswahili Gloss
a. /ʔibriːq/	>	/birika/	kettle
b. /sˁaːbuːn/	>	/sabuni/	soap
c. /qartˁaːs/	>	/karatasi/	paper

However, not all heavy syllables get adapted to Kiswahili light syllable. As we shall see in Chapter Four, a number of the loanwords retain the MSA heavy syllable. This is because a number of the loanwords are adopted into Kiswahili with their sourceword's syllable structure.

3.6 Phonological Processes in Loanwords Adaptation

In this study it has been observed that a number of phonological changes take place in the borrowing process from MSA to Kiswahili. So far, we have discussed some of the processes in 3.7, but this section focuses on analyzing the processes affecting segments in the loanwords. In our view, the phonological processes taking place on Kiswahili loanwords are caused by four different factors. First, are the phonological changes that are motivated by Kiswahili PSSRs. Second, are phonological processes that occur due to phonemic reason. The third group of phonological processes is triggered by assimilation

rules. The last group of phonological processes in this study, though few, is motivated by morphological factors.

3.6.1 Phonological Processes Motivated by Syllable Structure Rules

Phonological processes motivated by syllable structure conditions occur on Kiswahili loanwords. According to Mwita (2009:51), the idea of loanword adaptation or nativisation at the phonological level is governed by syllable well-formedness in the RL. The phonological processes involved are aimed at realizing well-formed or permissible syllables in Kiswahili loanwords. These processes include segment deletion, insertion, substitution and monophthongisation. These processes occur on both vowels and consonants so as to realize the preferred syllable structures in Kiswahili loanwords.

3.6.1.1 Phonological Processes on Vowels

There are a number of phonological transformations that affect vowels in Kiswahili loanwords. Vowels that are borrowed with the loanwords are modified in accordance with Kiswahili phonotactic constraints. We have observed that a number of loanwords from MSA have long vowels and diphthongs in their sourcewords. Since these vowels are alien to Kiswahili, they are adapted into vowels that are permissible in the RL through various processes.

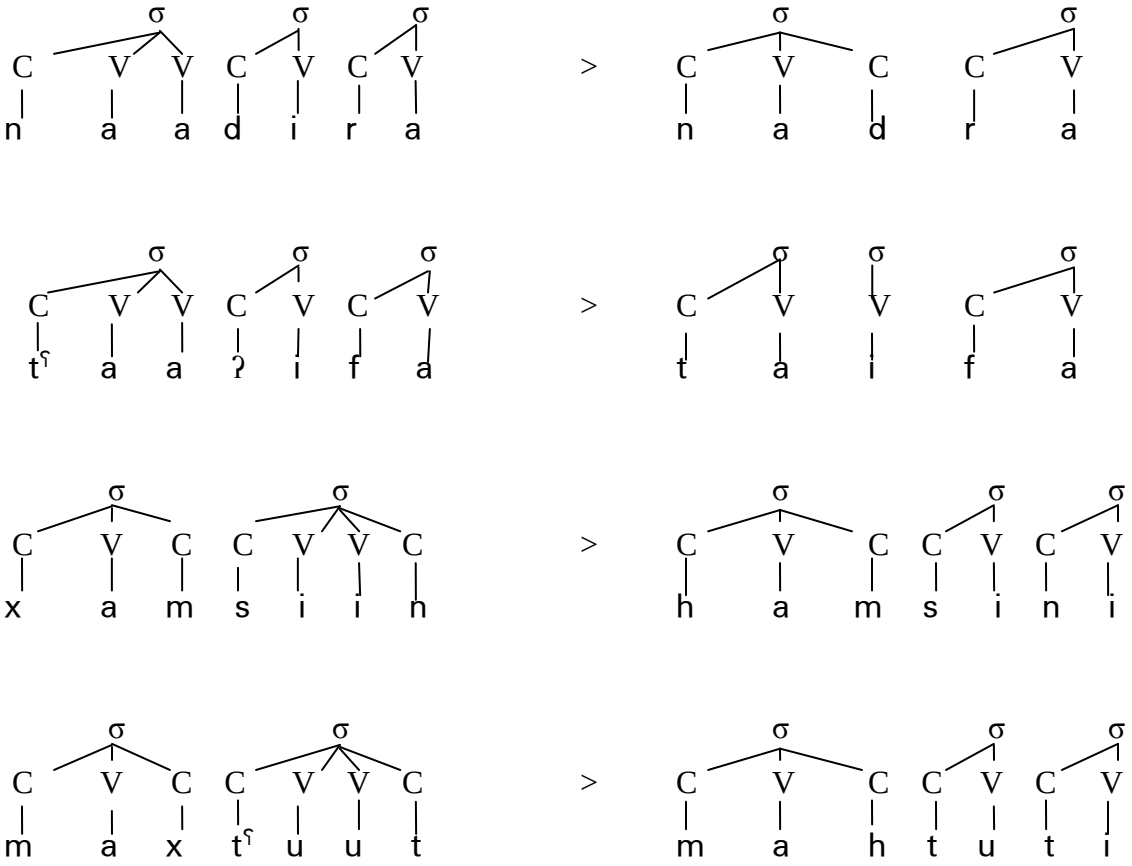
3.6.1.1.1 Vowel Shortening

The phonological process observed in much of the data used in this study is vowel shortening. In this process, a long vowel in MSA sourceword becomes a short vowel in the Kiswahili loanword. Phonetically, a long vowel consists of two units of short vowels

that are articulated as one segment. In other words, a long vowel has two moras. When loanwords get into Kiswahili, they get reduced to one short vowel (that is, one mora) within the syllable, for instance:

(97)

				Kiswahili Gloss	MSA Gloss
a.	/naːdira/	>	/nadra/	rare	
b.	/ tˤaːʔifa/	>	/taifa/	nation	
c.	/xamsiːn/	>	/hamsini/	fifty	
d.	/maxtˤuːt/	>	/mahtuti/	critically ill	manuscripts



The examples in (97), show the [+long] vowel becoming [-long] in the RL. Here, long vowels are shortened to pave way for the preferred syllable structure CV in the

loanwords. In (97 a, b), the long vowels in CVː syllable are changed to single short vowels. Similarly, in (97 c, d), the long vowels in CVːC syllables are reduced to single short vowels. Therefore, regardless of their position in the syllable, long vowels[6] in our data are reduced to single short vowels. This is because as has been observed in Chapter Two, the long vowels as well as CVː and CVːC syllables are not part of Kiswahili structure. Thus, for the loanwords to be adapted into Kiswahili, the long vowels, as well as CVː and CVːC syllables must be modified to the RL's preferred structure. This phonological process can be informally summarized as follows:

(98)

/aː/ > /a/ / [Kiswahili]

Thus, the formal rule for this process is:

(98a)

$$\begin{bmatrix} V \\ +long \end{bmatrix} > \begin{bmatrix} V \\ -long \end{bmatrix} / \text{Kiswahili}$$

According to Abubakre (2008:85-86), vowel shortening also occurs in Hausa loanwords from MSA[7], for example:

(99)

	MSA		Hausa	Gloss	MSA Gloss
a.	/sijaːsa/	>	/sʕijasa/	politics	
b.	/ʔalqaːdi/	>	/alkali/	judge/chief	legal officer
c.	/qaðaːf/	>	/kazafi/	false accusation	
d.	/qiraːʔah/	>	/karatu/	reading	

Similarly, long vowels are shortened in Kinyarwanda loanwords from English, as exemplified by Mbonankira (2004:21-27):

(100)

	English		Kinyarwanda	Gloss
a.	/friːzə(r)/	>	/firizeri/	freezer
b.	/dʒiːp/	>	/iʒipe/	jeep
c.	/wiːkend/	>	/wikendi/	weekend

The examples in (99 - 100) demonstrate that in Hausa and Kinyarwanda, the long vowels are changed to single short vowels in the loanwords, thus obtaining the preferred syllable CV. This is a common trend in Bantu and other languages whose preferred syllable is CV.

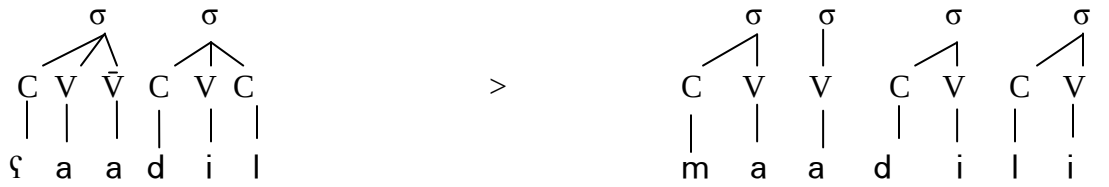
3.6.1.1.2 Vowel Splitting

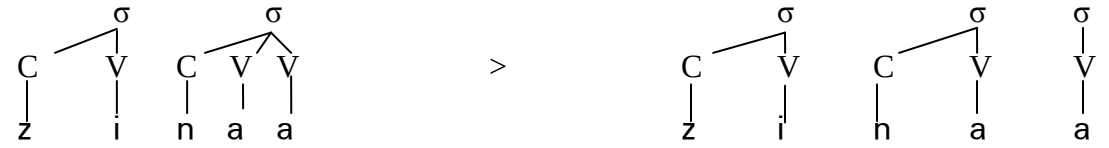
Vowel splitting is a phonological process in which a long vowel is split into two individual short vowels which results in obtaining two syllables. This process is observed in Kiswahili loanwords such as:

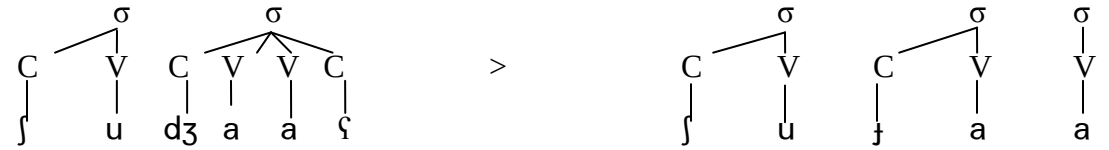
(101)

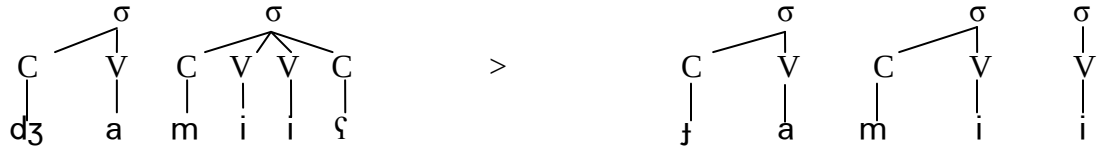
				Kiswahili Gloss

a. /ʕaːdil/	>	/maadili/	virtues
b. /zinaː/	>	/zinaa/	adultery/fornication
c. /ʃudʒaːʕ/	>	/ʃuɬaa/	hero
d. /dʒamiːʕ/	>	/ɬamii/	society/family







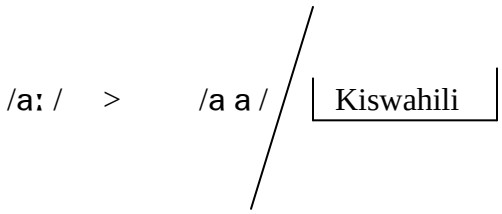


The examples in (101) demonstrate the splitting of long vowels to realize two short vowels in separate syllables in medial and final positions. In these examples, vowel

splitting is preferred to vowel shortening. Phonetically, a short vowel consists of one unit of a vowel, for example /a/. In terms of mora, a short vowel has only one mora, that is, V. A long vowel consists of two units of short vowels, that is, /a/ + /a/ which is equivalent to /aa/ or /a:/. This means that a long vowel has two timing units of VV within the same syllable. For instance, the sourceword of item (101 b), has the CV: syllable dominating the segments -naa. The two vowels are dominated by one syllable node because they are one long vowel. In other words, the vowel /a:/ in item (101 b), is longer than a short vowel. In terms of mora, the long vowel /a:/ has two moras, that is, CV-V. A long vowel that is said to be split will end up having two short vowels that are dominated by two syllable nodes, such that the first vowel is dominated by one syllable, and the following vowel is dominated by the next syllable. In the examples given in (101), the long vowel in CV: syllable is split into two separate short vowels thus, yielding two syllables as exemplified in (101 a and b). In the loanwords of items (101 a, b), the vowels are not dominated by the same syllable node, rather they are constituents of two different syllables. This means that the long syllable in the sourceword has been split into two. Due to this process, the loanwords now have two syllables CV and V each having one mora. Likewise, long vowels in CV:C syllable are reduced to two separate short vowels as in (101 c, d). In their sourcewords, the syllables have long vowels and are closed. In moraic terms, the syllables have three moras each, that is, CV-, V and C. When the MSA words get into Kiswahili, the loanwords end up having CV and V syllables due to the vowel splitting process. The syllables in the loanwords have one mora each. It has been

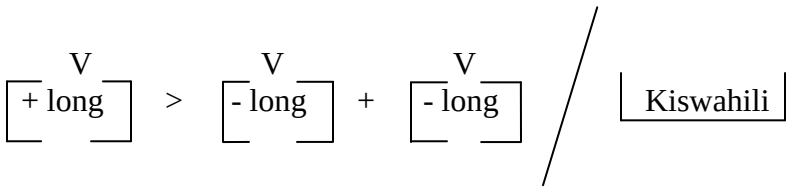
noted in Chapter Two that V syllable is another preferred syllable in Kiswahili though with a much lower preference in comparison to CV. In this study, we have observed that Kiswahili always strives to obtain the optimal preferred syllable CV in its loanwords. However, when it is not able to realize the CV syllable, it opts for the next preferred syllable, which is V. The motivation behind this change is to achieve syllable structures that are permissible in Kiswahili, in this case the V syllable. This process is represented as follows:

(102)



The process can be formulated as follows:

(102a)



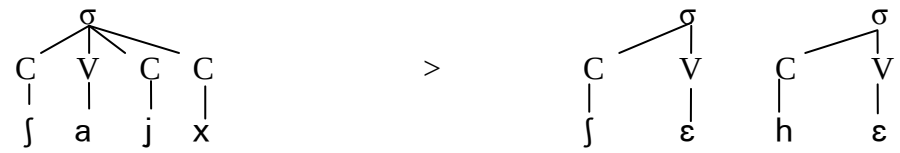
3.6.1.1.3 Monophthongisation

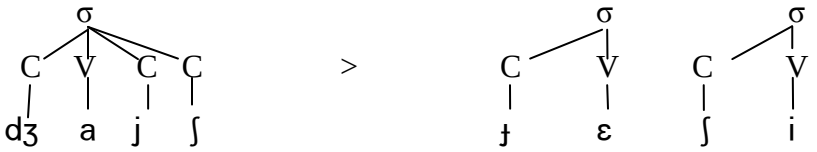
Monophthongisation is a phonological process involving the change of a diphthong to a simple vowel (Lyle, 1998:40). As has been stated in 2.3.1, diphthongs are part of MSA vowels but they are not part of Kiswahili vowels. According to Abercrombie (1967:60) and Ladefoged (2000:28), diphthongs occupy only one syllable, meaning that a diphthong functions as the nucleus of a single syllable. In this study, we have observed

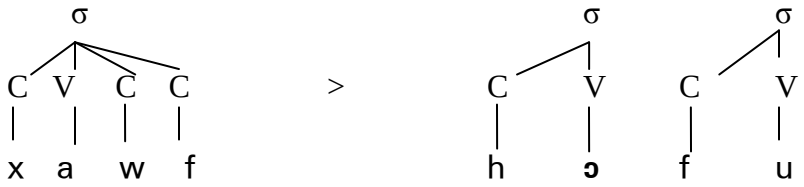
that diphthongs /aw/ and /aj/ from MSA are changed to simple vowels when loanwords adapt to Kiswahili structure, for example:

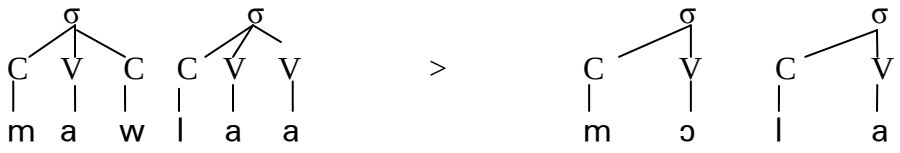
(103)

			Kiswahili Gloss
a. /ʃ a j x /	>	/ʃ ɛ h ɛ /	sheikh
b. /dʒ a j ʃ /	>	/ɟ ɛ ʃ i /	army
c. /x a w f /	>	/h ɔ f u /	fear
d. /m a w l aː /	>	/m ɔ l a /	God









Monophthongisation process is a regular occurrence in our corpus, which is motivated by the need to remove unacceptable consonant sequence in the syllable final position to adopt the preferred open syllable structure CV. This is achieved by eliminating

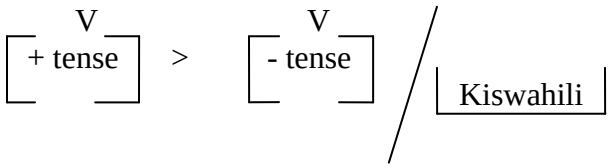
diphthongs which have no place in Kiswahili. The rounded diphthong /aw/ is changed to a [-high, -low, +back] vowel /ɔ/, while the unrounded diphthong /aj/ is replaced by a [-high, -low, -back] vowel /ɛ/. In (103), coalescence process is applied to replace the diphthongs with single vowels. It has been stated in Chapter Two that the vowel /a/ is a [+low], while the palatal glide /j/ is [+high]. Likewise, the bilabial glide /w/ is [+high]. In (103 a, b) a coalescence of the [+low] vowel and the palatal glide to become a [-high, -low, -back] vowel /ɛ/ is observed. Similarly, in (103 c, d), there is coalescence of the [+low] vowel and the bilabial glide to become a [-high, -low, +back] vowel /ɔ/. The difference between the two mid vowels borne out of the coalescence processes is in the feature [round]. In (103 a, b) the mid vowel is [-round], while in (103 c, d) the mid vowel is [+round]. Thus, a rounded diphthong is replaced by a rounded vowel, which when articulated the back of the tongue is raised towards the soft palate thus leading to lip-rounding (O'connor, 1973:38) as it is in the articulation of the bilabial glide. On the other hand, an unrounded diphthong is replaced by a spread vowel since the glide in the diphthong is unrounded. We acknowledge that in Kiswahili, coalescence process occurs in Bantu words to realize the preferred syllable structure. Linguists such as Mgullu (1999:89-90) and Iribemwangi (2010:148-149) cite examples of vowel coalescence process in Kiswahili words of Bantu origin. In the case of Kiswahili loanwords, we observe that the coalescence process occurs between a vowel and a glide. This change is represented informally as follows:

(104)

/aj / > /ɛ / Kiswahili

Thus, the formal rule for this change is:

(104a)



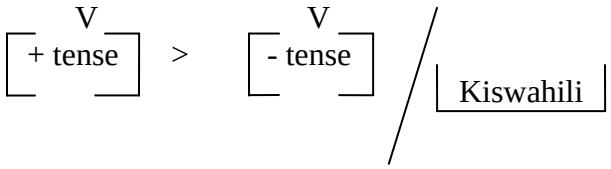
And

(105)

/aw/ > /ɔ / Kiswahili

That is,

(105a)



In Kinyarwanda (Mbonankira, 2004:27, 50) the diphthongs are also eliminated as cited in the examples below:

(106)

	English		Kinyarwanda	Gloss
a.	/praivət/	>	/purayiveti/	private

b.	/iːmeɪl/	>	/imeyire/	email
c.	/paʊnd/	>	/ipawundi/	pound

As shown in (106), diphthongs in Kinyarwanda are replaced by monophthong vowels. In our opinion, this happens because Kinyarwanda speakers view the diphthongs in the sourcewords as two vowel sequences given that diphthongs are not part of Kinyarwanda's phonemic inventory. As such, two processes take place in (106). First, the speakers break the diphthong into two vowel sequences, yielding two syllables. Second, a glide is inserted between the vowels so as to obtain CV syllable. In the environment of unrounded diphthong occurring in the SW, [+coronal] glide is inserted between the two vowels. Similarly, when the diphthong of the SW is rounded, a [-coronal] glide is added between the two vowels.

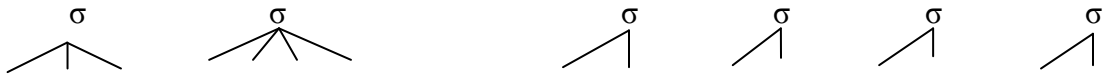
3.6.1.1.4 Vowel Insertion (Epenthesis)

Vowel insertion is a phonological process in which a vowel is added into a word. Vowel insertion is one of the PSSRs aimed at breaking up consonant clusters (Schane, 1973:209; Hyman, 1975:162). According to Iribemwangi (2010:185), vowel insertion is a dominant process in Kiswahili loanwords with the aim of avoiding closed syllables at word final position and to enhance the preferred CV syllable structure. There are different forms of vowel epenthesis occurring in the Kiswahili loanwords: prothesis, anaptyxis and paragoge (Lyle, 1998: 33-35). Of the three, anaptyxis and paragoge are motivated by PSSRs in Kiswahili loanwords; while prothesis is motivated by morphological factors.

Anaptyxis is a phonological process where an extra vowel is inserted between two consonants. We have seen that this process commonly takes place in Kiswahili loanwords, for instance:

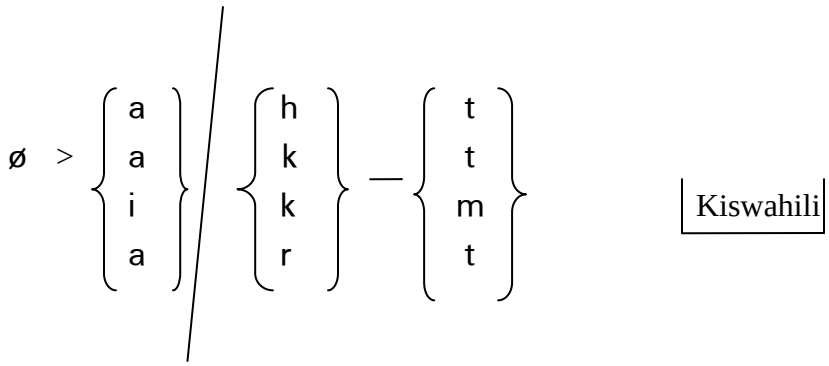
(107)

			Kiswahili Gloss	MSA Gloss
a. /baħt/	>	/bahati/	luck	
b. /waqt/	>	/wakati/	time	
c. / ħikma/	>	/hɛkima/	wisdom	
d. /tarti:b/	>	/taratibu/	slowly	arrangement



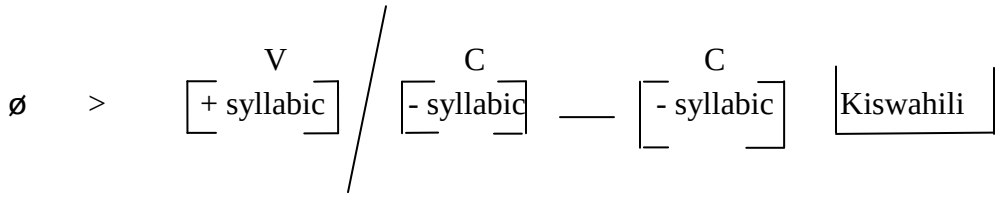
In (107) a vowel is inserted between the consonants for the purpose of breaking the consonant sequences as well as to make the closed syllables open. This process is therefore motivated by PSSRs which results in obtaining the preferred syllable structure in Kiswahili, that is, CV. We summarise this process as shown hereby:

(108)



Thus, formally, this process is represented by the following rule:

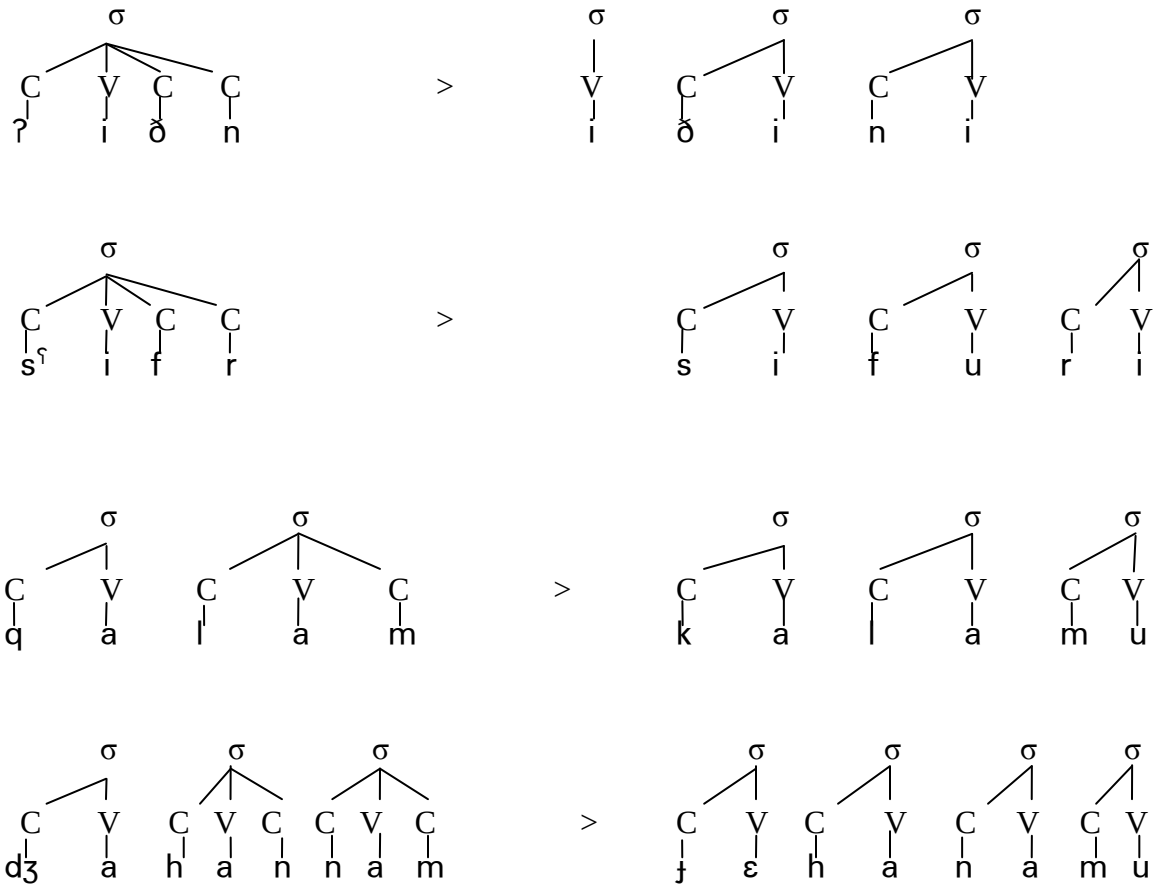
(108a)



Paragoge is a phonological process where a vowel is added at the end of a word. This process affects many of the loanwords with closed syllables at word final position in Kiswahili, for example:

(109)

			Kiswahili Gloss
a. /ʔiðn/	>	/iðini/	permission
b. /sˤifr/	>	/sifuri/	zero/nil
c. /qalam/	>	/kalamu/	a pen
d. /dʒahannam/	>	/ɟɛhanamu/	hell



In (107 - 109), vowels are inserted in the middle and final positions of the words, respectively. The reason for these insertions is to break up foreign syllable structures to realize syllables that are permissible in Kiswahili. Therefore, the changes are motivated by PSSRs. We agree with Iribemwangi's (2010:185) reasoning behind this process as confirmed in (107 - 109), that vowels are inserted at the middle and final positions in the loanwords in order to achieve the preferred CV syllable structure and to have an open final syllable. Prothesis is a phonological process involving vowel insertion at word initial position, as discussed in 3.6.4.1 below. We summarise the paragoge process:

(110)

$$ø > \left\{\begin{matrix} i \\ i \\ u \\ u \end{matrix}\right\} \Big/ \left\{\begin{matrix} n \\ r \\ m \\ m \end{matrix}\right\} \_\_ \#$$

Kiswahili

The formulation of a rule that accounts for paragoge process is shown below:

(110a)

$$ø > \begin{bmatrix} V \\ +\text{syllabic} \end{bmatrix} \Big/ \begin{bmatrix} C \\ -\text{syllabic} \end{bmatrix} \_\_ \#$$

3.6.1.2 Phonological Processes on Consonants

In this study, we observe various phonological processes that involve consonantal segments geared towards the realization of Kiswahili preferred syllables. In these

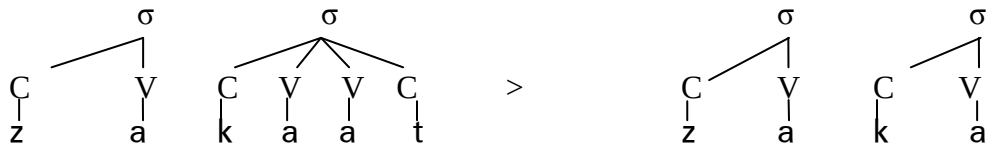
processes, the consonants are deleted, reduced, inserted or transposed in the Kiswahili loanwords.

3.6.1.2.1 Consonant Deletion

There are three types of consonant deletion: apocope, syncope and aphaeresis (Lyle, 1998: 31-32). Apocope is the deletion of a consonant at word final position. In Kiswahili loanwords, apocope affects single consonants. Single consonants at syllable or word final position are deleted as shown in the following examples of Kiswahili loanwords:

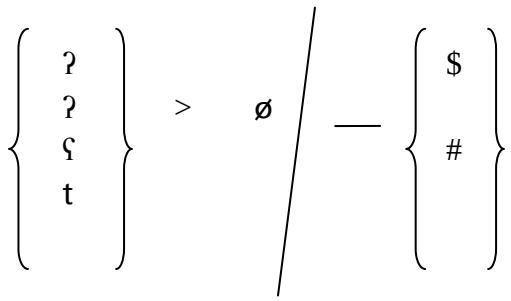
(111)

			Kiswahili Gloss
a. /dawaːʔ/	>	/dawa/	medicine
b. /ʔinʃaːʔ/	>	/inʃa/	composition
c. /maʕdin/	>	/madini/	minerals
d. /zakaːt/	>	/zaka/	tithe



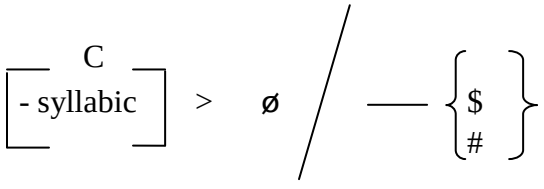
In (111), glottal stops and pharyngal fricatives occupying syllable or word final positions of items (111 a, b, c) are deleted. They are deleted for two reasons. First, the segments are deleted because they are non-existent in Kiswahili. The second reason behind the deletion is to make the closed syllables open. The final consonant is deleted in (111 d), so as to make the closed syllable open and thereby, obtain the Kiswahili preferred syllable. An informal summary of the process in (111) reads as follows:

(112)



That is, this process is governed by the rule:

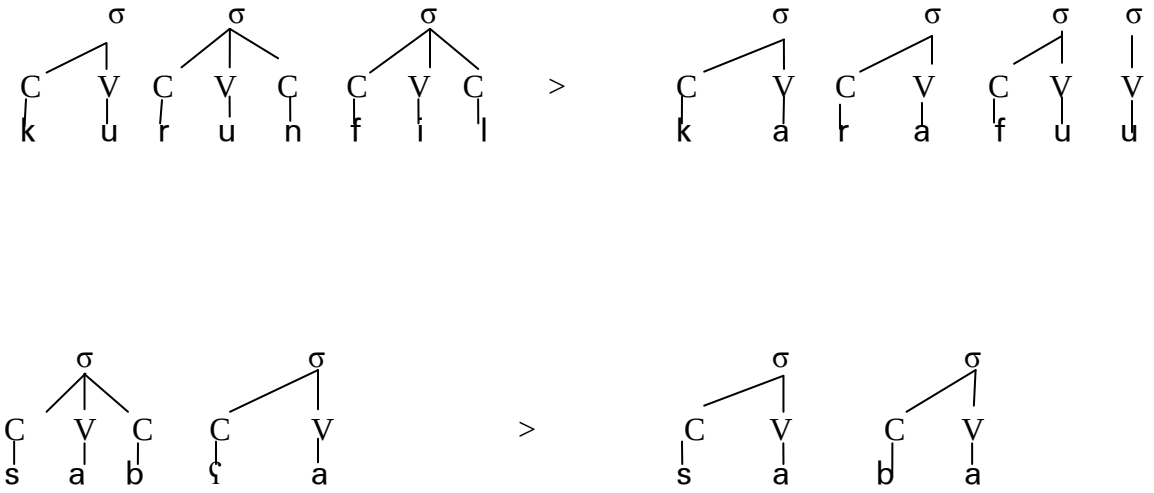
(112a)



Syncope is a process where there is loss of a segment in the medial position of a word. This affects single consonants in Kiswahili loanwords, for instance:

(113)

			Kiswahili Gloss
a. /kurunfil/	>	/karafuu/	love/romance/friendship
b. /sabʕa /	>	/saba/	seven



In (113), we observe that the consonants are deleted to open the closed syllable and for phonemic reason respectively. We summarise the phonological change in (113) in as follows:

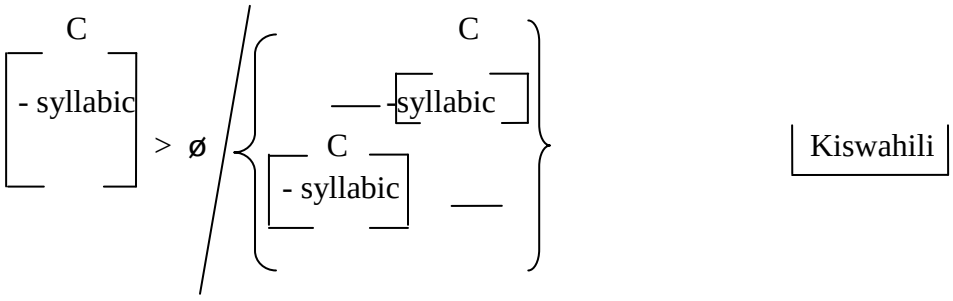
(114)

$$\left\{ \begin{matrix} n \\ ʕ \end{matrix} \right\} > ø \; / \; \left\{ \begin{matrix} \_\_ \; f \\ b \; \_\_ \end{matrix} \right\}$$

Kiswahili

Thus, the change can be formally interpreted as follows:

(114a)

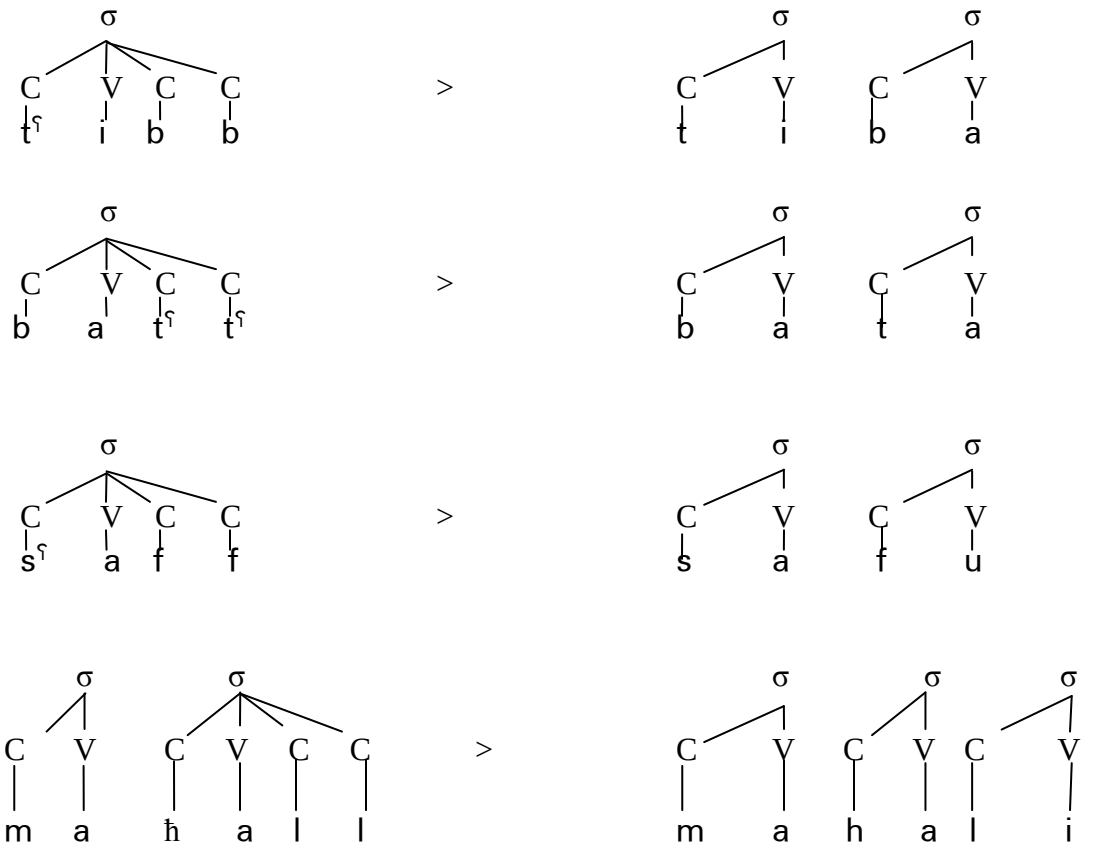


3.6.1.2.2 Consonant Reduction

In this study, we have observed that a consonant reduction process takes place in some of the loanwords. Consonant reduction is the process of deleting one or both members of the geminate consonants. Consonant reduction occurs in loanwords whose sourcewords have geminate consonants. As has been stated in 1.8.4, geminate consonants are a sequence of two identical segments that can be found either within a single syllable or in separate syllables. When geminate consonants get into Kiswahili, they are reduced to a single consonant, as shown in the following examples:

(115)

			Kiswahili Gloss
a. / tˤibb/	>	/tiba/	treatment/medicine
b. /batˤtˤ/	>	/bata/	duck
c. /sˤaff/	>	/safu/	column
d. /maħall/	>	/mahali/	place



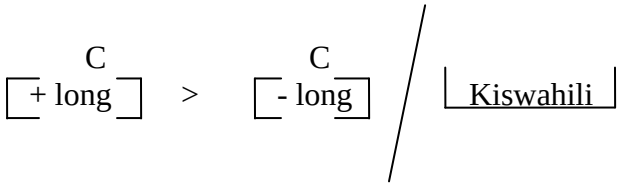
In (115), the geminate consonant is reduced to a single consonant in order to remove consonant clusters at word final position. A vowel is then inserted at word final position to make the closed syllable open. However, there are exceptional cases where consonant geminates are not deleted in some Kiswahili loanwords, for example, /ʃadda/ for *stress* and /umma/ for *public*. We summarie the process of consonant reduction change in (115) as:

(116)

$$\left\{\begin{array}{l} b\ b \\ t^{\varsigma}t^{\varsigma} \\ f\ f \\ l\ l \end{array}\right\} > \left\{\begin{array}{l} b \\ t^{\varsigma} \\ f \\ l \end{array}\right\} \Big/ \underline{\text{Kiswahili}}$$

This process is formally represented by the following rule:

(116a)

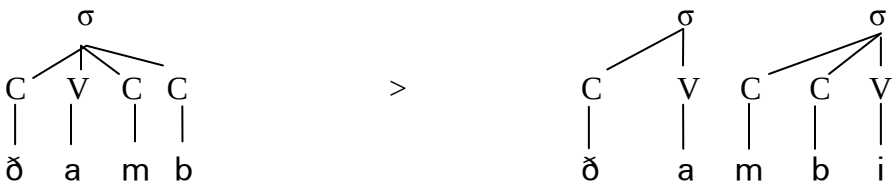


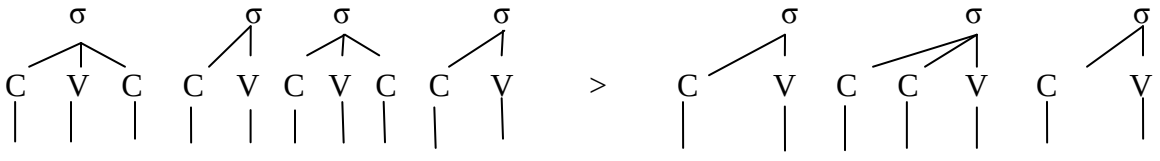
3.6.1.2.3 Nasal Consonant Insertion

Nasal consonant insertion is the process of putting a nasal consonant into a word. Phonologically, insertion takes place when a segment which was not there in the first place is added into a word. In this study, nasal consonant insertion is observed in the following Kiswahili loanwords:

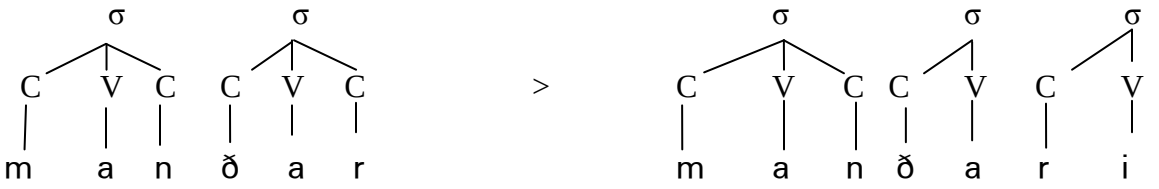
(117)

				Kiswahili Gloss
a.	/ðamb/	>	/ðambi/	sin
b.	/bunduqijja/	>	/bunduki/	gun
c.	/manðar/	>	/manðari/	scenery





b u n d u q i j j a b u n d u k i



In (117), the sourcewords' nasal and oral consonants are articulated as individual segments either within or in separate syllables. This is because as has been stated in 1.8.4, MSA consonant clusters are members of different syllables (Al-ani, 1970:77). In this study, it is observed that consonant clusters at syllable or word final position are the only ones that belong to the same syllable in MSA. When loanwords having consonant clusters are borrowed into Kiswahili, the consonant clusters are articulated as a sequence of segments. Although we call this process insertion, in the strict sense of the word it is not. This is because the nasal consonants are already in the SWs, so they are not new additions to the loanwords. In our opinion, what happens is their re-association within a syllable in the loanwords. In the sourcewords, the nasal consonants are dominated by the first syllable separate from the following obstruent. When they get into Kiswahili, the nasals are dominated by the same syllable node except item (117 c). The process therefore paves the way to the realization of CCV structure by removing the closed syllables. In example (117 c), CVC syllable is retained in the loanword because of phonotactic factors. One, the alveolar nasal /n/ cannot form a cluster with an inter-dental fricative /ð/. As can be seen in items (117 a, b), the consonant clusters involve segments that are homorganically articulated, that is bilabial and alveolar. Yet, in (117 c), the

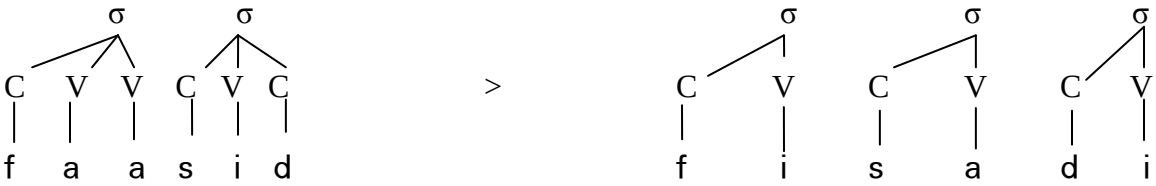
segments involved are produced at different points of articulation. For this reason, they cannot form a consonant cluster. Second, this kind of a cluster does not exist in Kiswahili phonology. The nð- cluster does not occur in initial positions of Kiswahili words of Bantu origin and loanwords. This is due to the fact that the inter-dental fricative is foreign to Kiswahili. As a result, the nasal consonant remains associated to the first syllable forming the CVC syllable.

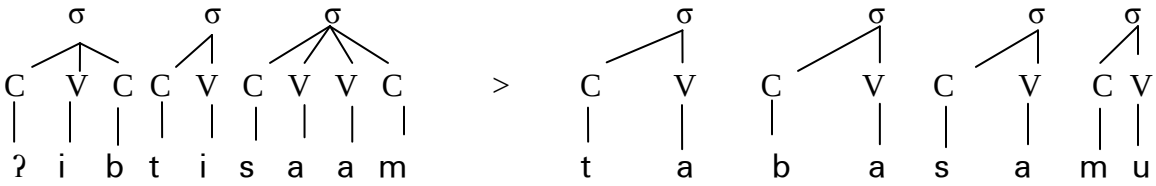
3.6.1.2.4 Metathesis

Metathesis is a phonological process in which two usually adjacent segments interchange positions within a word (Lyle, 1998:36; Massamba, 2010:114). Some of Kiswahili loanwords from MSA have undergone this process as shown below:

(118)

			Kiswahili Gloss
a. /f a:s i d /	>	/f i s a d i /	corrupt
b. /ʔ i b t i s a: m /	>	/tabasamu/	smile
c. /zawdʒ /	>	/ɟɔzi /	a pair





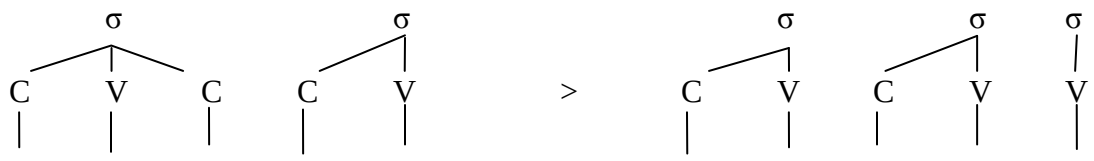
In (118), CV syllable structure is obtained in the loanwords, as a result of the segments changing positions within the loanwords. According to Schane (1973:211-212), metathesis being one of the PSSRs, achieves preferred syllable types of a given language. The examples given in (118) indicate that metathesis process has occurred in the loanwords. However, in our opinion, the process is not motivated by PSSR in these loanwords. This is because even without the process taking place, the syllable structure would not change[8].

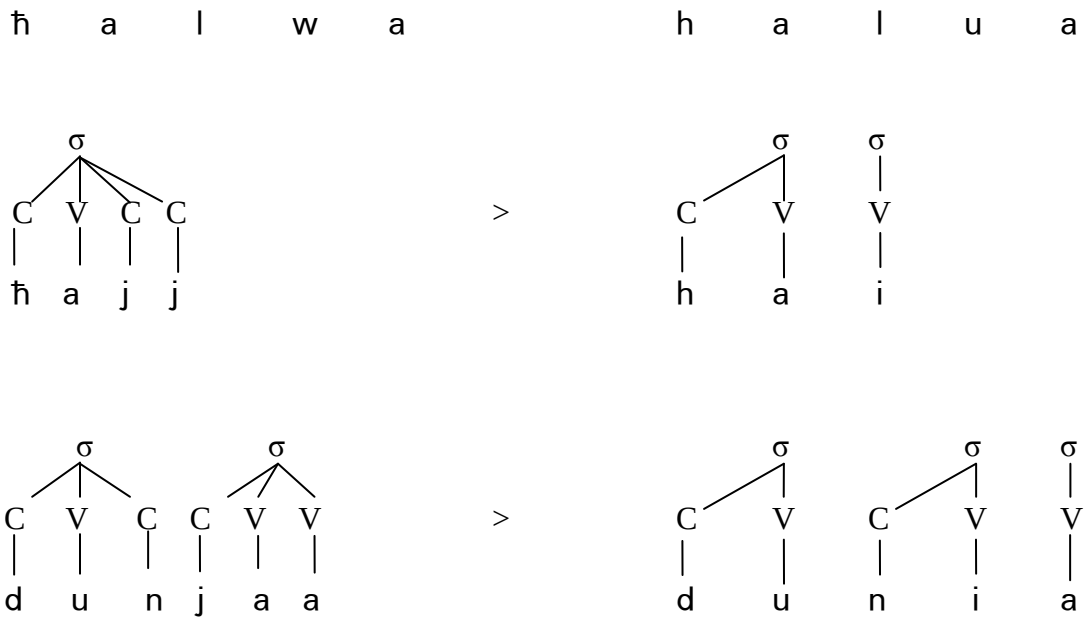
3.6.1.2.5 Glide Substitution

Glide substitution is a process in which a semi-vowel is replaced by a vowel. In this study, we have observed that glides are replaced by vowels in Kiswahili loanwords such as:

(119)

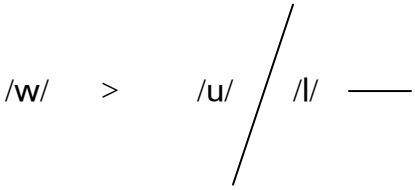
			Kiswahili Gloss
a. /ħ a l w a /	>	/h a l u a /	sweet meat
b. / ħ a j j /	>	/h a i /	alive
c. /d u n j a ː /	>	/d u n i a /	world





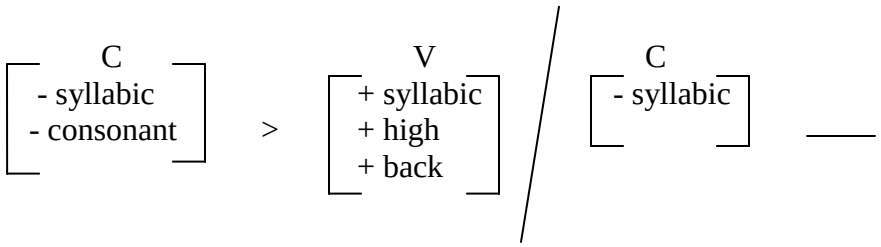
In (119 a), the [-coronal] glide is replaced by a [+high, +back] vowel in order to break the consonant sequence lw-, thus making the closed syllable open. In (119 b, c), the geminate segments are reduced to single segments, respectively. The [+coronal] glide is then replaced by a [+high, -back] vowel, thus obtaining two separate syllables. In our view, the change takes place in order to obtain Kiswahili preferred syllables. Glides are replaced in order to make the closed syllables (which are not readily tolerated in Kiswahili) open. We summarise the process in (119) as follows:

(120)



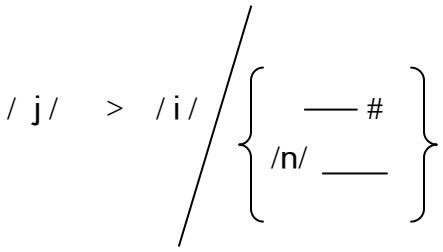
Thus, this process is governed by the rule:

(120a)



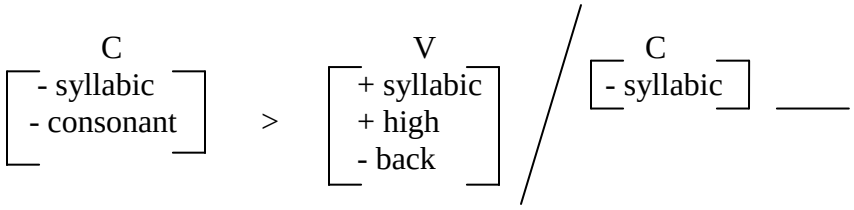
And

(121)



That is,

(121a)



3.6.2 Phonological Processes Motivated by Phonemic Reasons

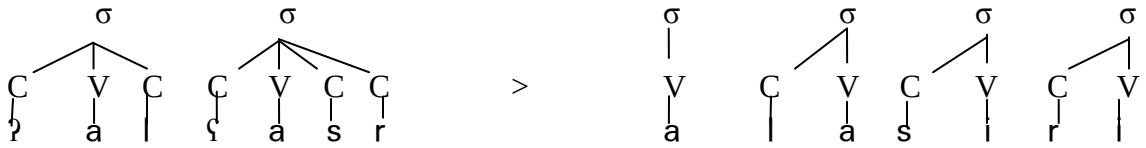
There are two phonological processes occurring in Kiswahili loanwords due to phonemic factors. The processes take place because the segments involved are not found in Kiswahili phonemic inventory. These processes include aphaeresis and consonant substitution.

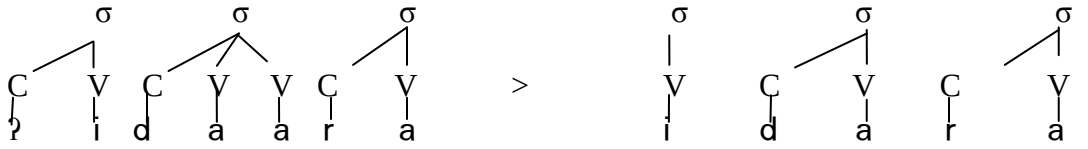
3.6.2.1 Aphaeresis

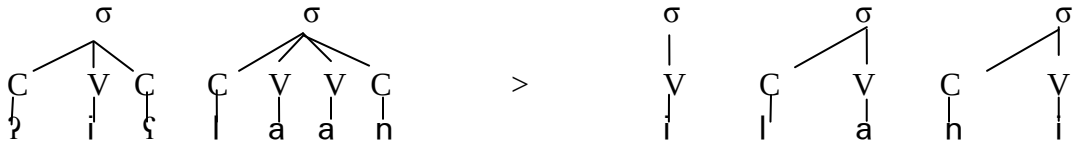
Aphaeresis is a phonological process in which a segment is deleted at word or syllable initial position. This change involves MSA glottal stop and pharyngeal fricative deletion in Kiswahili loanwords. We observe the glottal stop being deleted in Kiswahili loanwords, for example:

(122)

			Kiswahili Gloss
a. /ʔasquf/	>	/askɔfu/	bishop
b. /ʔalʕasr/	>	/alasiri/	afternoon
c. /ʔidaːra/	>	/idara/	department
d. /ʔiʕlaːn/	>	/ilani/	notice







In (122), the glottal stop in the SW is deleted in the LW because it does not exist in Kiswahili. Therefore, this process can be informally summarized as follows:

(123)

/ʔ/ > ø / # ___

Therefore, the rule governing this process is,

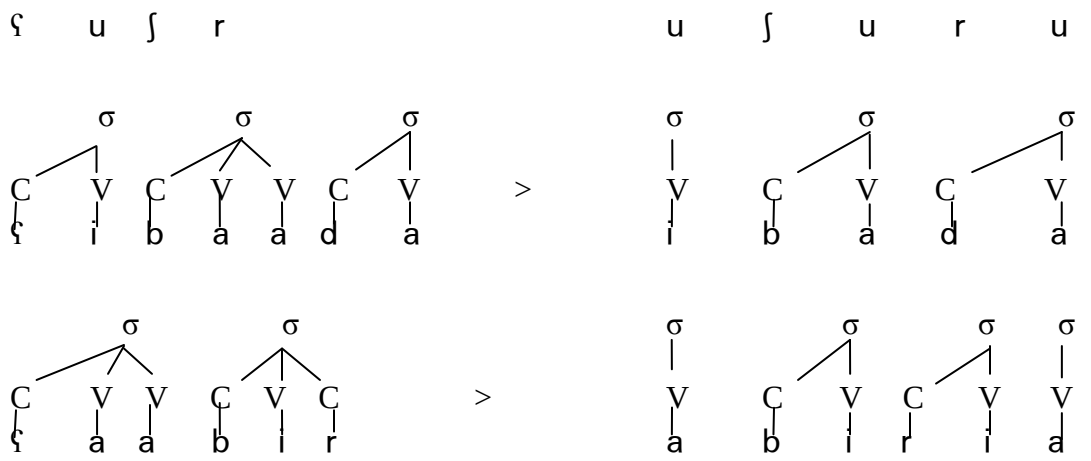
(123a)

$$\begin{bmatrix} C \\ -\text{syllabic} \\ -\text{continuant} \end{bmatrix} > ø \;/\; \#\_\_$$

The pharyngeal fricative is also deleted at word initial position of the following Kiswahili loanwords:

(124)

			Kiswahili Gloss
/ʕaql/	>	/akili/	brains/wit
/ʕuʃr/	>	/uʃuru/	tax
/ʕibaːda/	>	/ibada/	worship service
/ʕaːbir/	>	/abiria/	passenger



In (124) the pharyngeal fricative occurring at word initial position is deleted. As has been discussed in previous examples, the reason for this change is phonemic. The segment is deleted because it does not form part of Kiswahili phonemic inventory. Deletion of the glottal stop and pharyngeal fricative results in changing the syllable structure, as stated by Schane (1973:211) that, if a segment is deleted the total syllable structure is changed. Thus, the MSA syllables in the sourcewords change to V syllable in the loanwords in (122 - 124). The following informal rule represents the phonological change in (124) as:

(125)

$$/ʕ/ \quad > \quad ø \quad / \quad \#\ \_\_\_$$

The change can be formally interpreted by the following rule:

(125a)

$$\underline{\quad C \quad}\ \boxed{\begin{array}{l}\text{- syllabic}\\ \text{+continuant}\end{array}}\ \underline{\quad} \quad > \quad ø \quad / \quad \#\ \_\_\_$$

3.6.2.2 Consonant Substitution

Consonant substitution occurs especially to replace segments which are not part of Kiswahili phonemic inventory. Many of them are replaced by Kiswahili segments that are in proximity to them in terms of place and manner of articulation.

x > h

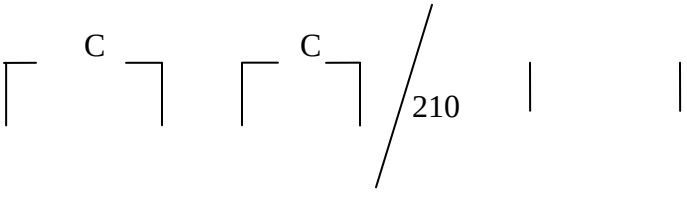
The velar fricative /x/ is replaced by the glottal fricative /h/, in all the Kiswahili loanwords such as:

(126)

				Kiswahili Gloss
a.	/xawf/	>	/hɔfu/	fear
b.	/xamsiːn/	>	/hamsini/	fifty
c.	/xu tˤba/	>	/hɔtuba/	speech
d.	/ʔixtilaːf/	>	/hitilafu/	defect/difference

This process confirms our position about the velar fricative /x/ in Kiswahili. As has been stated in Chapter Two, /x/ is not a phonological phoneme in Kiswahili. Had it been one, then the velar fricative would have been retained in the loanwords. The substitution in (126) is informally represented as follows:

(127)



- glottal > + glottal Kiswahili

Rule (127a) accounts for this change:

(127a)

/x/ > /h/ / Kiswahili

ħ > h

In this study, we have observed that MSA pharyngal fricative /ħ/ in all the Kiswahili loanwords is replaced by the glottal fricative /h/, as in the following examples:

(128)

			Kiswahili Gloss	MSA Gloss
a. /ħaðˤðˤ/	>	/haði/	status/prestige	luck
b. /ħaqq/	>	/haki/	justice	
c. /masˤlaħ/	>	/maslahi/	benefits	
d. /ħiʃma/	>	/hɛʃima/	respect	

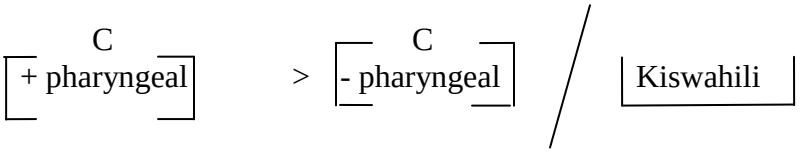
The substitution in (128) is summarized as follows:

(129)

/ħ/ > /h/ / Kiswahili

Rule (129a) accounts for this change:

(129a)



q > k

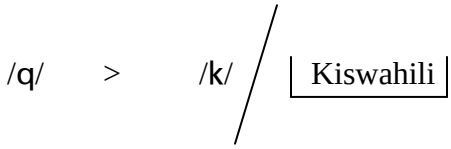
The uvular stop /q/ is replaced by velar stop /k/ in all Kiswahili loanwords as follows:

(130)

			Kiswahili Gloss
a. /nuqtˤa/	>	/nukta/	a second in time
b. /ʕaql/	>	/akili/	brains/wit
c. /taqwiːm/	>	/takwimu/	statistics
d. /qartˤaːs/	>	/karatasi/	paper

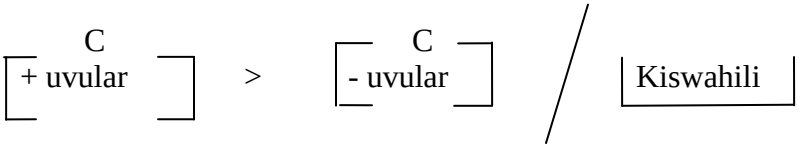
The substitution in (130) is represented as follows:

(131)



Rule (131a) accounts for this change:

(131a)



dˤ > ð

The pharyngealised alveolar stop /dˤ/ is replaced by the inter-dental fricative /ð/ in all Kiswahili loanwords such as:

(132)

			Kiswahili Gloss
a. /ʔardˤ/	>	/arði/	land/soil
b. /maradˤ/	>	/maraði/	disease
c. /bidˤaːʕa/	>	/biðaa/	products/goods
d. /dˤiːq/	>	/ðiki/	distress

The substitution in (132) is represented as follows:

(133)

$$/dˤ/ \quad > \quad /ð/ \;/\; \boxed{\text{Kiswahili}}$$

Thus, rule (133a) accounts for the substitution process:

(133a)

$$\begin{bmatrix} \text{C} \\ \text{- continuant} \\ \text{+ pharyngeal} \end{bmatrix} \quad > \quad \begin{bmatrix} \text{C} \\ \text{+ continuant} \\ \text{- pharyngeal} \end{bmatrix} \;/\; \boxed{\text{Kiswahili}}$$

tˤ > t

The pharyngealised alveolar stop /tˤ/ is replaced by non- pharyngealised equivalent /t/ in all the Kiswahili loanwords, for instance:

(134)

			Kiswahili Gloss
a. / tˤibb/	>	/tiba/	treatment/medicine
b. / tˤalaːq/	>	/talaka/	divorce

c. /ʃaj tˤaːn/	>	/ʃɛtani/	satan
d. /xutˤba/	>	/hɔtuba/	speech

The substitution in (134) is represented in the following rule informally:

(135)

$$/t^{\varsigma}/ \quad > \quad /t/ \;\; / \;\; \boxed{\text{Kiswahili}}$$

This change is accounted for by rule (135a):

(135a)

$$\begin{bmatrix} C \\ +\text{ pharyngeal} \end{bmatrix} \quad > \quad \begin{bmatrix} C \\ -\text{ pharyngeal} \end{bmatrix} \;\; / \;\; \boxed{\text{Kiswahili}}$$

s^{ς} > s

The pharyngealised alveolar fricative /s^{ς}/ is replaced by its non-pharyngealised counterpart /s/ in all the Kiswahili loanwords as shown below:

(136)

			Kiswahili Gloss	MSA Gloss
a. /s^{ς}aff/	>	/safu/	column	
b. /s^{ς}ifr/	>	/sifuri/	zero	
c. /s^{ς}araf/	>	/sarafu/	coin	exchange
d. /qis$^{\varsigma}$iːs$^{\varsigma}$/	>	/kasisi/	priest/padre	

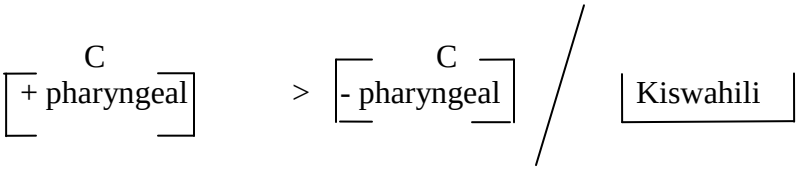
The substitution in (136) is represented informally as follows:

(137)

$$/s^{\varsigma}/ \quad > \quad /s/ \;\; / \;\; \boxed{\text{Kiswahili}}$$

This change is accounted for in rule (137a):

(137a)



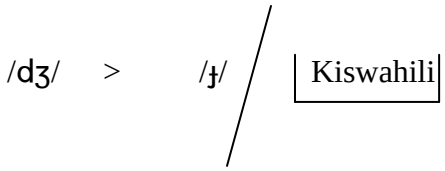
dʒ > ɟ

The voiced palatal fricative is replaced by a palatal stop in all the Kiswahili loanwords as demonstrated hereby:

(138)			Kiswahili Gloss
a. /zawdʒ/	>	/ɟɔzi/	a pair
b. /dʒawaːb/	>	/ɟawabu/	an answer
c. /dʒaːsuːs/	>	/ɟasusi/	detective
d. /ʃudʒaːʕ	>	/ʃuɟaː/	hero

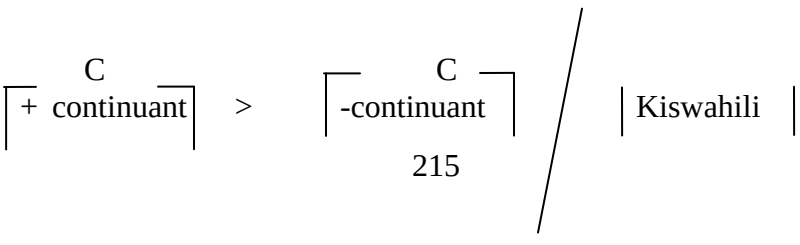
The substitution in (138) is summarized as:

(139)



Thus, the change can be formulated in rule (139a):

(139a)



ʕ > [+syllabic]

The pharyngeal fricative /ʕ/ is replaced by a vowel as seen in instances of Kiswahili loanwords below:

(140)

			Kiswahili Gloss
a. /niʕma/	>	/nɛɛma/	blessings
b. /muʕdʒiza/	>	/muuɟiza/	miracle
c. /ʃammaʕ/	>	/mʃumaa/	candle
d. /rubʕ/	>	/rɔbɔ/	quarter

The substitution in (140) is represented as follows:

(141)

/ʕ/ > V / [Kiswahili]

Thus, rule (141a) accounts for this substitution process:

(141a)

[+ C syllabic] > [- V syllabic] / [Kiswahili]

All the substitutions so far involve segments that are in MSA but not in Kiswahili. MSA segments are replaced by Kiswahili segments which are produced at the same point or close to the place of articulation of the sourcewords' segments. However, there are

substitutions which affect segments available in Kiswahili, though they are isolated cases involving one instance each. In our opinion, these are exceptional cases that occur in the borrowing process from MSA to Kiswahili. Exceptional cases such as these are a normal occurrence in languages, and they may occur due to various reasons including historical, semantic, morphological, phonological or even accidental.

ðˤ > ð

The pharyngealised inter-dental fricative /ðˤ/ is replaced by its non- pharyngealised counterpart /ð/ in one instance of Kiswahili loanword:

(142)

				Kiswahili Gloss	MSA Gloss
a.	/ʔaðˤðˤuhr/	>	/aðuhuri/	noon	the noon
b.	/ðˤaːhir/	>	/ðahiri/	clear	

The substitution in (142) is represented informally as:

(143)

$$/ðˤ/ \quad > \quad /ð/ \;/\; \boxed{\text{Kiswahili}}$$

Rule (143a) accounts for the substitution process:

(143a)

$$\begin{bmatrix} C \\ +\text{ pharyngeal} \end{bmatrix} \quad > \quad \begin{bmatrix} C \\ -\text{ pharyngeal} \end{bmatrix} \;/\; \boxed{\text{Kiswahili}}$$

n > l

An alveolar nasal stop /n/ is also replaced by a lateral /l/ in one Kiswahili loanword:

(144)

			Kiswahili Gloss
/samn/	>	/samli/	ghee

Both the nasal and lateral segments are in Kiswahili. However, in (144) the alveolar nasal is replaced by a lateral. In this case, we argue that this change is motivated by dissimilation rule to remove the nasals cluster. The substitution in (144) is represented as:

(145)

/n/ > /l/ / /m/ ____

This change is fourmulated by rule (145a):

(145a)

$$\begin{bmatrix} C \\ +\text{nasal} \end{bmatrix} > \begin{bmatrix} C \\ -\text{nasal} \end{bmatrix} / \begin{bmatrix} C \\ +\text{nasal} \end{bmatrix}$$

b > p

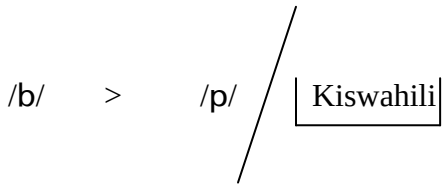
The voiced bilabial stop /b/ is replaced by its voiceless counterpart /p/ in one Kiswahili loanword:

(146)

			Kiswahili Gloss
/rubʔrubʔ/	>	/marupurupu/	allowances

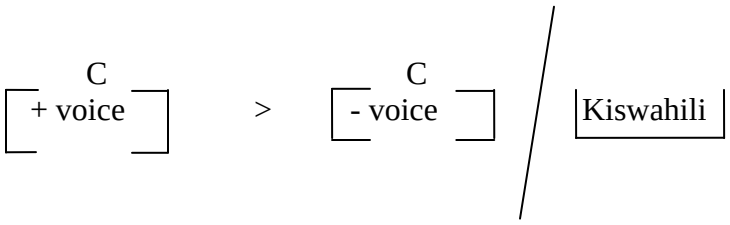
Kiswahili has both the bilabial voiced and voiceless segments. However, the voiced stop is replaced by its voiceless counterpart in (146). In our view, this is a case of unnatural rule where voiced stop is devoiced in spite of following a lateral and vowel. The substitutions in (142 – 146) are isolated cases involving one example each. The substitution in (146) is represented as:

(147)



The formal rule for this change is:

(147a)



3.6.3 Phonological Processes Motivated by Assimilation Rules

In this study, we have observed one phonological process on loanwords that is instigated by assimilation rules. This process is vowel substitution.

3.6.3.1 Vowel Substitution

The three MSA vowels are substituted in some of the Kiswahili loanwords. Vowel substitution appears to be random in many instances.

Substitution of /a/

The [+low] vowel /a/ is replaced by a [-high, - low, -back] vowel /ɛ/ as given in examples below:

(148)

			Kiswahili Gloss
a. /ʔalf/	>	/ɛlfu/	thousand
b. /ʃariːʕa/	>	/ʃɛria/	law
c. /θalaːθuːn/	>	/θɛlaθini/	thirty
d. /maθal/	>	/mɛθali/	proverb

The examples in (148) demonstrate a regular change which occurs in the environment of the [+back] vowel preceding a [+anterior] segment. The motivation for this change is an assimilation rule. The low vowel /a/ is replaced by a mid vowel /ɛ/ due to the influence from the alveolar liquids. Since obstruction of the airstream occurs at the alveolar ridge in producing the liquids, the tongue tip is brought forward as opposed to the direction of producing the back vowel. As a result, the vowel is assimilated to be similarly produced at the front, realizing the [-back] vowel /ɛ/. The substitution in (148) is represented informally as:

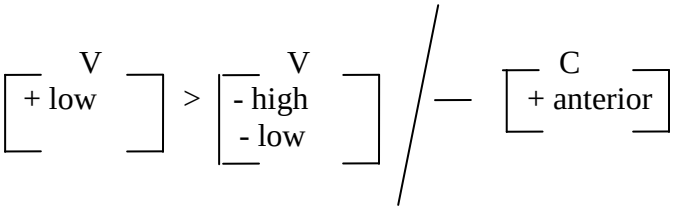
(149)

$$/a/ \quad > \quad /ɛ/ \;/\; \_\_ \left\{ \begin{matrix} l \\ r \\ 220 \end{matrix} \right\}$$

l
θ

Thus, rule (149a) accounts for this process as follows:

(149a)



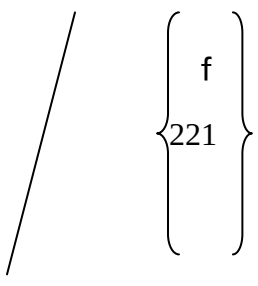
In some loanwords, the vowel /a/ is also replaced by a [+high, - back] vowel /i/ as shown in the following Kiswahili loanwords:

(150)

			Kiswahili Gloss
a. /xaːlaf/	>	/uhalifu/	crime
b. /ʔidʒtahad/	>	/ɟitahidi/	to put effort
c. /wasˤal/	>	/wasili/	to arrive
d. /ʃaːrik/	>	/ʃiriki/	to participate

The change in (150) is motivated by assimilation of [+anterior] segments. The [+low] vowel is assimilated by [+anterior] segments to become a [+high] vowel. The substitution in (150) is summarized as:

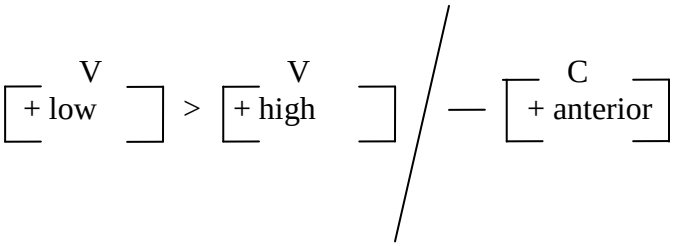
(151)



/a/ > /i/ ___ d
l
r

Thus, rule (151a) accounts for this process as follows:

(151a)



On the other hand, a process that is contrary to (150) happens in other loanwords. The vowel /a/ is replaced by a [+high, +back] vowel /u/ in the Kiswahili loanwords given below:

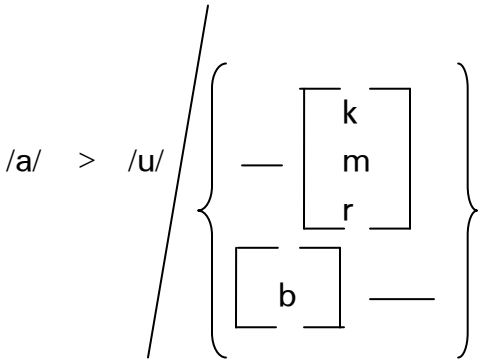
(152)

				Kiswahili Gloss	MSA Gloss
a.	/faqiːr/	>	/fukara/	poor/destitute	
b.	/ʃammaːʕ/	>	/mʃumaa/	candle	
c.	/farah/	>	/furahi/	to be happy	
d.	/bardaːn/	>	/burudani/	entertainment	to be inactive

An assimilation process also occurs in examples (152). The [+low] vowel /a/ is changed to a [+high, +back] vowel /u/ as a result of being assimilated by its neighbouring segments. In (152 a) the [+low] vowel appears before a uvular stop /q/ in the MSA sourceword. In this environment, the uvular stop is replaced by a velar stop /k/ which is

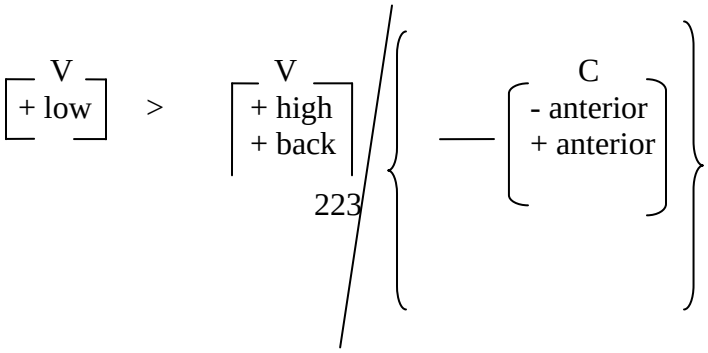
[+back] in the loanword. According to the Chomskian distinctive features, the velar stop is also a [+high] segment. Therefore, the [+low] vowel /a/ preceding the [+high] stop is assimilated to be a [+high, +back] vowel /u/. In (152 b), a similar process occurs in which the [+low] vowel changes to a [+high] vowel in the environment of an alveo-palatal fricative /ʃ/, which according to Chomskian distinctive features is a [+high] segment. In item (152 c), the low vowel becomes [+high] in the environment of preceding the trill which is [+coronal]. The process occurring in (152 a, b, c) is known as progressive assimilation where a segment becomes more like the segment following it. In (152 d), the low vowel assimilates the round feature from the preceding bilabial stop to become a [+round] vowel /u/. The process in (152 d) is regressive assimilation in which a segment becomes like the segment preceding it (Katamba, 1989:84). The substitutions in (152) are summarized as follows:

(153)



Thus, rule (153a) accounts for these processes as:

(153a)



— — + coronal

[+ round] ——

One isolated example in our data is the replacement of the low vowel by a [-low, -high, +back] vowel /ɔ/ in the Kiswahili loanword:

(154)

			Kiswahili Gloss
/tafaːwut/	>	/tɔfauti/	different

In example (154), we observe regressive assimilation of the low vowel. According to Chomskian distinctive features, the alveolar stop is [+coronal] while the labio-dental fricative is [-coronal]. Therefore, in (154), the low vowel between the two consonants partially assimilates to the preceding segment to become [-low, -high, +back]. The substitution in (154) is summarized as:

(155)

/a/ > /ɔ/ / /t/ —— / f/

Thus, rule (155a) accounts for this process as follows:

(155a)

$$\begin{bmatrix} V \\ +\text{low} \end{bmatrix} > \begin{bmatrix} V \\ -\text{low} \\ -\text{high} \end{bmatrix} \Big/ \begin{bmatrix} C \\ +\text{coronal} \end{bmatrix} \text{——} \begin{bmatrix} C \\ -\text{coronal} \end{bmatrix}$$

Substitution of /i/

The MSA high front vowel /i/ is replaced by a mid front vowel /ɛ/ in the following instances of Kiswahili loanwords:

(156)

			Kiswahili Gloss
a. /ʕilm/	>	/ɛlimu/	education
b. /ʕizz/	>	/ɛnzi/	dominion/might/power
c. /ħiʃma/	>	/hɛʃima/	respect
d. /fidˤdˤa/	>	/fɛða/	silver

In example (156), the [+high, -back] vowel /i/ changes to [-high, -low] vowel in the environment of the following [-coronal] segments. Therefore, a progressive assimilition process occurs which makes the vowel to get to its neutral position (Katamba, 1989:45). The substitution in (156) is represented as:

(157)

$$/i/ \quad > \quad /ɛ/ \;/\; \_\_ \left\{ \begin{matrix} m \\ n \\ m \\ ð \end{matrix} \right\}$$

Thus, rule (157a) accounts for this process as follows:

(157a)

$$\begin{bmatrix} V \\ +high \end{bmatrix} \quad > \quad \begin{bmatrix} V \\ -high \end{bmatrix} \;/\; \underset{225}{\_\_} \quad \begin{bmatrix} C \\ -coronal \end{bmatrix}$$

- back — — - low — — —

The vowel /i/ is also replaced by a low vowel in the following examples of Kiswahili loanwords:

(158)

			Kiswahili Gloss
a. /xidaːʕ/	>	/hadaa/	to deceive/cheat
b. /ʃirriːr/	>	/mʃari/	an evil person/wrangler
c. /wakkal/	>	/wakili/	lawyer

The examples given in (158) show a regressive assimilation process. In this case, the [+high,-back] vowel /i/, is assimilated to be [+low] as a result of following a [-coronal] segment /h/ and [-anterior] segment /ʃ/, respectively. The substitution in (158) is represented as follows:

(159)

/i/ > /a/ / ___ { d, r, l }

Thus, rule (149a) accounts for this process as:

(159a)

[V, +high] > [V, + low] / ___ [C, - coronal]

There is an isolated example in our data of the vowel /i/ being replaced by a [+high, + back] vowel /u/ in the Kiswahili loanword:

(160)

			Kiswahili Gloss
/xidma/	>	/huduma/	service

When the velar fricative changes to the glottal fricative in example (160), the distance from the point of articulating the [+high, -back] vowel to the larynx where the glottal fricative is produced increases. For this reason, the [-back] vowel is assimilated to be [+back] which is nearer to the glottal fricative. Thus, this is a regressive assimilation process, where the [-back] vowel gets assimilated by the [-coronal] consonant[9] to become a [+back] vowel, and therefore, closer to the glottal fricative. The substitution in (160) is informally represented as:

(161)

$$/i/ \quad > \quad /u/ \;/\; \_\_\_ \quad /d/$$

Thus, rule (161a) accounts for this process as follows:

(161a)

$$\begin{bmatrix} V \\ -\text{back} \end{bmatrix} \quad > \quad \begin{bmatrix} V \\ +\text{back} \end{bmatrix} \;/\; \_\_\_ \quad \begin{bmatrix} C \\ -\text{coronal} \end{bmatrix}$$

Substitution of /u/

The MSA high back vowel /u/ is seen to be replaced more than the other vowels in Kiswahili loanwords. It is replaced by a high front vowel /i/ in the following examples of loanwords:

(162)

			Kiswahili Gloss
a. /raʔsulmaːl/	>	/rasilimali/	resources/assets
b. /θalaːθuːn/	>	/θɛlaθini/	thirty
c. /kull/	>	/kila/	each

In (162), a progressive assimilation process has occurred where the [+back] vowel is influenced by the following [+anterior] alveolar segments to become a [-back] vowel. The substitution in (162) is represented as:

(163)

$$/u/ \quad > \quad /i/ \; / \; \_\_ \; \begin{Bmatrix} l \\ n \\ l \end{Bmatrix}$$

Thus, rule (163a) accounts for this process as follows:

(163a)

$$\begin{bmatrix} V \\ + \text{back} \end{bmatrix} \quad > \quad \begin{bmatrix} V \\ - \text{back} \end{bmatrix} \; / \; \_\_ \; \begin{bmatrix} C \\ + \text{anterior} \end{bmatrix}$$

The vowel /u/ is also replaced by the low vowel /a/ as seen in the following instances of Kiswahili loanwords:

(164)

			Kiswahili Gloss
a. /furqaːn/	>	/farakana/	to be parted/estranged
b. /kurunfil/	>	/karafuu/	cloves
c. /ʔunwaːn/	>	/anwani/	address
d. /dʒumhuːrijja/	>	/ɟamhuri/	republic

In (164), the [+high, +back] vowel /u/ changes to a [+low] vowel /a/ as a result of progressive assimilation in the environment of the following [+anterior] segments. The substitution in (164) is summarised as:

(165)

$$/u/ \quad > \quad /a/ \;/\; \_\_ \begin{Bmatrix} r \\ f \\ n \\ m \end{Bmatrix}$$

Thus, rule (165a) accounts for this process as follows:

(165a)

$$\begin{bmatrix} V \\ +\text{back} \end{bmatrix} > \begin{bmatrix} V \\ -\text{back} \end{bmatrix} \;/\; \_\_ \begin{bmatrix} C \\ +\text{anterior} \end{bmatrix}$$

The vowel /u/ is replaced by the mid back vowel /ɔ/ in Kiswahili loanwords as given in the examples below:

(166)

Kiswahili Gloss

a. /ruːħ/	>	/rɔhɔ/	soul/spirit
b. /ʔasquf/	>	/askɔfu/	bishop
c. /rubʕ/	>	/rɔbɔ/	quarter
d. /suːq/	>	/sɔkɔ/	market

The examples in (166) show that a [+tense] vowel becomes lax in the environment of preceding the [-coronal] segments. Therefore, this is a progressive assimilation process in which a [+high, +back] vowel is assimilated to be [-high, -low, +back] because the segments preceding it, do not involve raising of the tongue blade in their articulation. The substitution in (166) is summarized as:

(167)

$$/u/ \quad > \quad /ɔ/ \;/\; \_\_ \begin{Bmatrix} h \\ k \\ b \\ k \end{Bmatrix}$$

Thus, rule (167a) accounts for this process as follows:

(167a)

$$\begin{bmatrix} V \\ +\text{tense} \end{bmatrix} \quad > \quad \begin{bmatrix} V \\ -\text{tense} \end{bmatrix} \;/\; \begin{bmatrix} C \\ -\text{coronal} \end{bmatrix} \_\_$$

We have observed two instances in the data of the vowel /u/ being substituted for the mid front vowel /ɛ/ in the loanwords:

(168)

			Kiswahili Gloss
a. /dustur/	>	/dɛsturi/	tradition/custom

b. /marħuːm/ > /marɛhɛmu/ the deceased/late

The two examples in (168) indicate the change of a [+high, +back] vowel to a [-high, -low, -back] vowel. In our view, a progressive assimilation process occurs in the loanwords. In this case, the [+high, +back] vowel /u/ appears before [+anterior] segments /s, m/. It therefore follows that the high back vowel is assimilated by the [+anterior] segments to become [-high, -low, -back] vowel /ɛ/. The substitution in (168) is summarised as:

(169)

$$/u/ > /ɛ/ \;/\; \_\_ \begin{Bmatrix} s \\ r \end{Bmatrix}$$

Thus, rule (169a) accounts for this process as follows:

(169a)

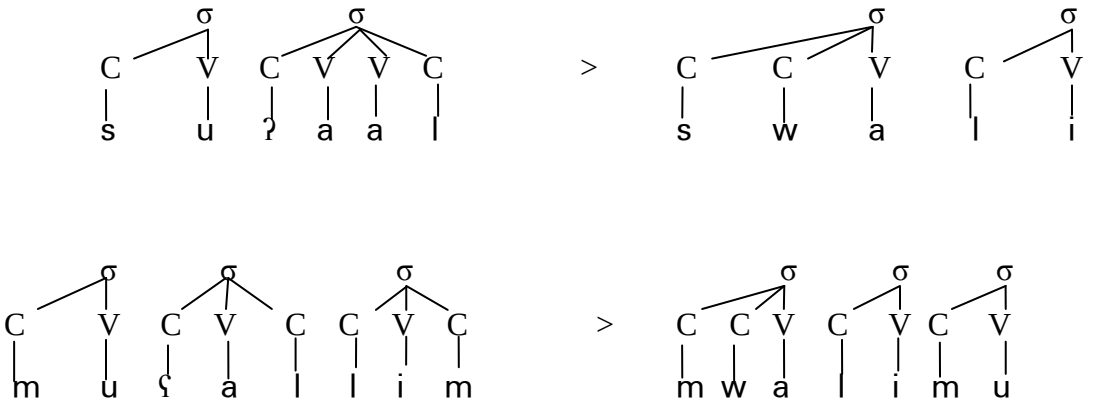
$$\begin{bmatrix} V \\ +\text{back} \end{bmatrix} > \begin{bmatrix} V \\ -\text{back} \end{bmatrix} \;/\; \_\_ \begin{bmatrix} C \\ +\text{anterior} \end{bmatrix}$$

Substitution of /a/ by a Glide

In this study, we have observed that the vowel /a/ is replaced by the bilabial glide in two Kiswahili loanwords:

(170)

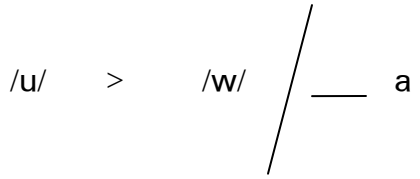
			Kiswahili Gloss
a. /s uʔaa l /	>	/s w a l i /	question
b. /m uʕa l l i m /	>	/mwalimu/	teacher



In (170), vowel substitution is preceded by the deletion of the glottal stop and pharyngeal fricative, respectively. Removing these segments results in a sequence of vowel segments /u/ and /a/ in CV-V. Since vowel sequences are not preferred in Kiswahili, vowel substitution process occurs in (170) following the deletion process[10]. Phonetically, it requires more effort to produce the two vowels. This is because the tongue has to move from the high position after articulating the [+high, +back] vowel /u/ to the low position to produce the [+low] vowel. For this reason, the [+high, +back] vowel is replaced by a [-coronal] glide, which is closer to the [+low] vowel. The substitution process leads to realization of the CCV syllable structure. This, we can say, is partly due to an assimilation process where a [+high] vowel changes to a [-coronal] glide due to its

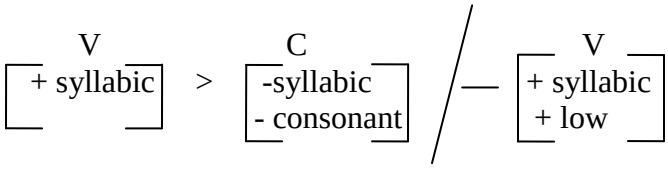
proximity to a [-high] vowel. Moreover, Schane (1973:209) says that consonant clusters are more tolerable than vowel clusters. Therefore, in our opinion, vowel substitution is one of the phonological processes used to achieve CCV syllable in Kiswahili loanwords. However, not all vowels are replaced by glides. We have also found that some of the glides are replaced by vowels. The substitution in (170) is represented as:

(171)



Thus, rule (171a) accounts for this process as follows:

(171a)



3.6.4 Phonological Processes Motivated by Morphological Reasons

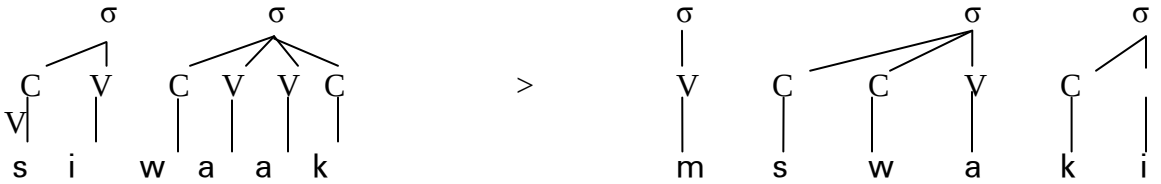
In this study, we have noted that one phonological process occurs in Kiswahili loanwords as a result of morphological factors. This process is known as prothesis.

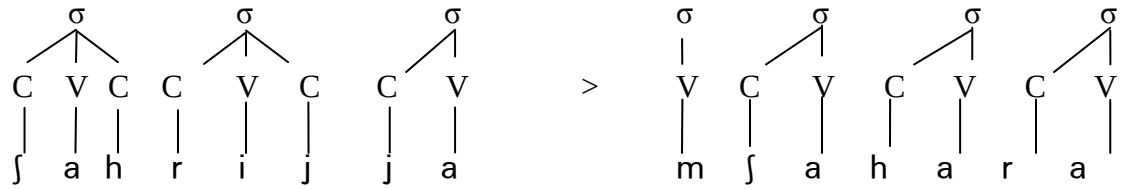
3.6.4.1 Prothesis

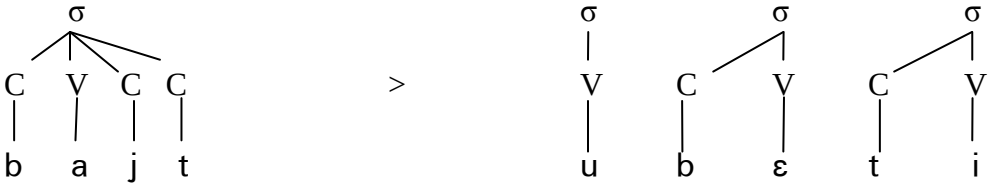
Prothesis is a phonological process in which a segment is inserted at the beginning of a word (Lyle, 1998: 33). This process is observed in Kiswahili loanwords, such as:

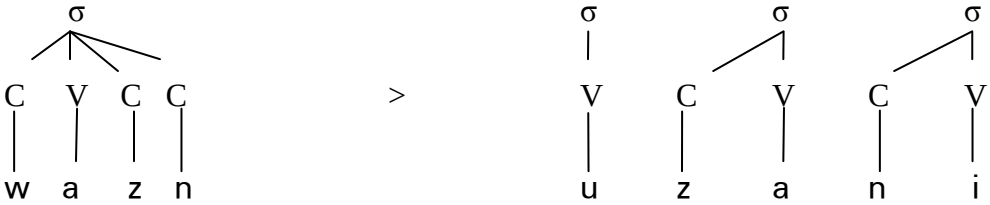
(172)

			Kiswahili Gloss
a. /dʒumʕa/	>	/iɟumaa/	Friday
b. /siwaːk/	>	/mswaki/	toothbrush
c. /ʃahrijja/	>	/mʃahara/	salary
d. /bajt/	>	/ubɛti/	verse
e. /wazn/	>	/uzani/	weight



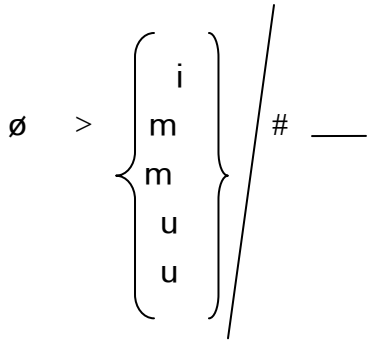






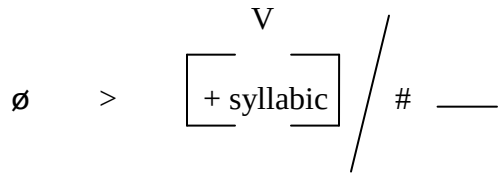
In (172), [+syllabic] segments are inserted at word initial positions of the loanwords. The [+high, -back] vowel /i/ is inserted before a palatal stop /ɟ/ in (172 a). A bilabial nasal /m/ is inserted before the alveolar and palatal fricatives /s/ and /ʃ/ in (172 b, c). In items (172 d, e), a [+high, +back] vowel /u/ is inserted before a bilabial stop /b/ and alveolar fricative /z/, respectively. We are of the opinion that PSSRs are not the motivation of prothesis in (172). In our view, morphological reasons are the motivation behind this process. All the items in (172) are nouns[11]. In Kiswahili, nouns are put in nominal classes which are represented by class morphemes. The class morphemes always appear at word initial positions of the nouns. Therefore, the segments are inserted in these positions in (172) to function as nominal class morphemes of the loanwords. These segments are on their own syllables separate from the word root/stem. The segments inserted depend on the nominal class to which the loanword is allocated in Kiswahili. The substitutions in (172) are represented informally as:

(173)



Thus, rule (173a) accounts for this process as follows:

(173a)



Conclusion

In this chapter we have illustrated the adaptation of Kiswahili loanwords borrowed from MSA. It has been observed that Kiswahili syllable structure influences the loanwords' adaptation. We have observed two types of natural phonological processes in the adaptation of Kiswahili loanwords. One type of the processes is motivated by PSSRs of the RL, while the second type of the processes is motivated by assimilation rules. As a consequence of these processes, a bulk of MSA syllables CVC, CVː, CVCC and CVːC in the loanwords are modified to Kiswahili syllables namely CV, V and CCV. Of the two types of processes, we have observed in this study that many of the phonological processes on the loanwords are motivated by PSSRs, to achieve Kiswahili preferred syllables. Kiswahili applies segment deletion, insertion and substitution processes to realize Kiswahili preferred syllables namely CV, V and CCV. In addition to the natural phonological processes, other processes have occurred on the loanwords. These processes are a result of phonemic factors on the one hand, and morphological factors on the other hand. Aphaeresis and consonant substitution are motivated by phonemic reason; while prothesis is motivated by morphological factors.

ENDNOTES

[1] In Chapter Four, a number of CVC syllables are retained in Kiswahili.

[2] Exceptions to syllable changes are discussed in Chapter Four.

[3]Also /jasmini/ according to TUKI (1981, 2001) dictionary.

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[4] Some of the Kiswahili loanwords have different meanings from the MSA sourcewords. Thus, where necessary we have provided gloss for both Kiswahili and MSA. However, in some instances, we do not give gloss for MSA because the meaning is the same as in Kiswahili.

[5] S.O Abubakre (2008:85-87) note that we have modified MSA transcription of sourcewords from the author's original transcription: from Adab, Siya:sah, Dars and Dunya:, respectively.

[6]Some of the long vowels are split into two short vowels, for instance, in the loanword *zinaa*.

[7] Note that we have modified MSA transcription of sourcewords from the author's original transcription: Siya:sah, Alqa:di, Qadha:f and Qira:ah.

[8] For this reason, we do not provide a rule formulation for this process.

[9]See endnote 3 in F. Katamba *An Introduction to Phonology*.(London: Longman, 1989) p. 59.

[10]There are exceptions to this process where the vowel sequence is retained in loanwords such as /suala/.

[11] Item 138 (a) is a proper noun, given that it refers to a day (Friday).

CHAPTER FOUR

ADOPTION OF MSA SYLLABLE STRUCTURE IN KISWAHILI LOANWORDS

4.0 Introduction

In this chapter we examine MSA syllable structure adoption in Kiswahili loanwords. We also evaluate how MSA syllable impacts on Kiswahili phonology through the loanwords. Finally, we assess MSA effects on Kiswahili syllable structure *vis-à-vis* other foreign languages.

4.1 Adoption of MSA Syllable Structure in Kiswahili

It is a common view that loanwords undergo nativisation especially at the phonological and morphological levels (Antilla, 1972; Hall-lew, 2002; Mwita, 2009). In Chapter Three, it has been observed that majority of Kiswahili loanwords are usually retailored to suit the phonological requirements of the RL. However, there are instances where the SW structure is adopted in the loanwords. In the context of lexical borrowing, adoption in this study refers to a case where a loanword retains its SW form. Mwita (2009:59) states that, "not all words or syllables are repaired in borrowing, there are instances where loanwords are adopted in the RL with their sourceword features". In borrowing, some of the loanwords adopted in the RL possess the SL's structure. In this case, adoption occurs in pure borrowing.

In loanwords' adaptation, the structure of the loanwords is modified to fit in the phonological constraints of the RL. In this case, the RL usually appears to be stronger in

influencing the loanwords (Antilla, 1972:160), as has been observed in Chapter Three. To the contrary, when adoption occurs, the structure of the loanword is not modified to suit the RL's phonological patterns. Thus, in adoption the SL has more influence on the loanwords than the recipient language. This is because in adoption, the SW's structure is retained in the loanwords. Adoption can be partial or complete. Haugen (1950:214), states that "any morphemic importation can be classified according to the degree of its phonemic substitution: none, partial or complete". Partial adoption occurs when a word retains some of its features from the SL, for instance, syllable structure or segment. Complete adoption occurs when a word retains all its features (segments and syllables) from the SL. In our view, a segment, syllable, consonant cluster or even the entire word can be adopted into the RL.

Adoption occurs in situations where the languages involved in the borrowing process do not have similar structures. In Chapter Two, it has been demonstrated that some of the syllable structures in Kiswahili and MSA are different. Mwita (2009:51) states that "when a word is borrowed in most cases it violates some constraints of syllable well-formedness". Loanwords that violate the syllable constraints of the RL are retained with their SW structure; for example, Kiswahili words of Bantu stock do not have the closed syllable CVC. When a word containing the CVC syllable from MSA is borrowed into Kiswahili, the syllable is sometimes retained in the RL, for instance, loanwords such as, /labda/ (*perhaps*) and /maalum/ (*special*). In this study, we have observed that some of the MSA segments, syllables and words are adopted in Kiswahili loanwords as discussed in the sections following.

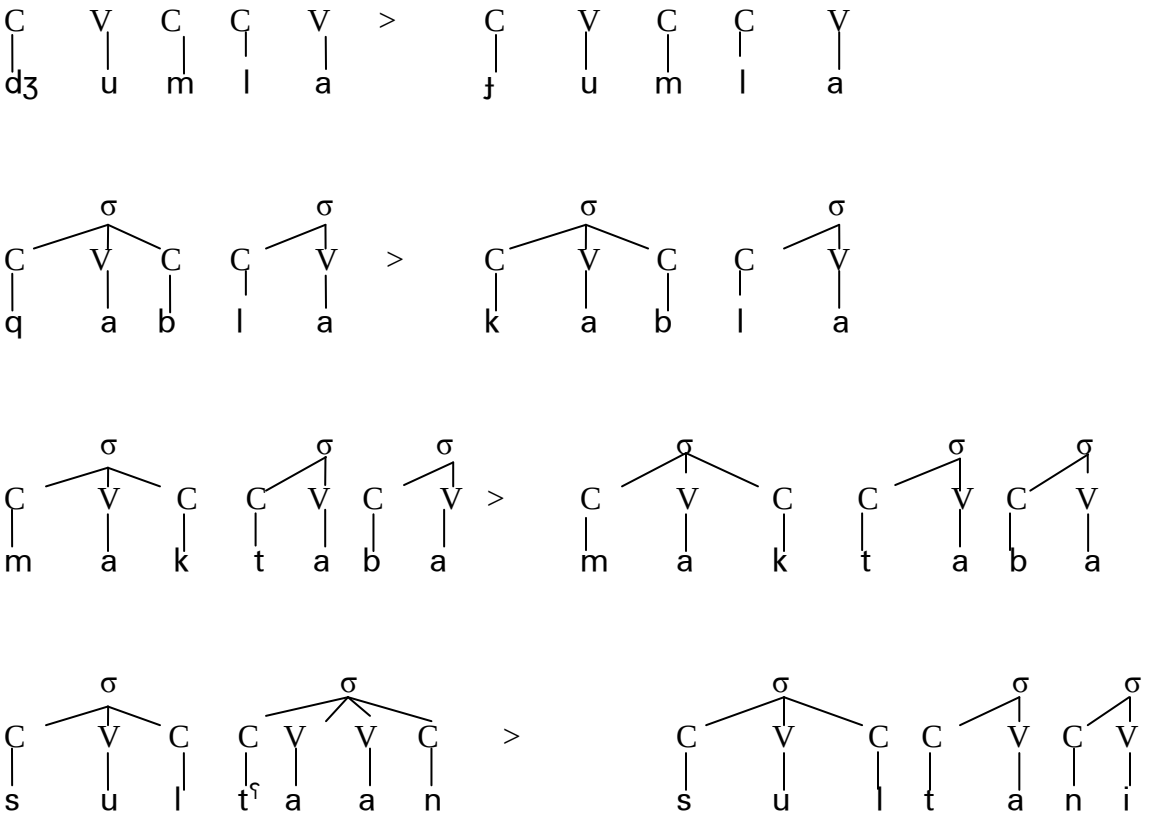
4.1.1 Adoption of CVC Syllable Structure

It has been observed that only one MSA syllable is adopted in Kiswahili loanwords. The CVC syllable in some of the sourcewords is retained in a number of Kiswahili loanwords. As observed from the data used in this study, CVC syllable is the most widely adopted foreign syllable in Kiswahili. Winford (2003:53) says that, "lexical borrowing can be accompanied by the introduction of new sounds as well as morphemes which can affect the phonology and morphology of the recipient language." Winford's statement implies that loanwords can be adopted with their sourcewords' structure in the RL. Adoption affects some of the loanwords with CVC structure which are adopted as they are in MSA sourcewords. There are also a number of MSA sourcewords with other MSA syllable types that are changed to CVC syllables in Kiswahili loanwords. It has been observed in this study that the RL's constraints on syllable initial consonant clusters are the motivation for CVC syllable adoption in the Kiswahili loanwords.

Many of the sourcewords with CVC syllable are adopted with the same structure in Kiswahili loanwords. Loanwords from MSA with CVC structure retain the syllable in Kiswahili, for example:

(174)

			Kiswahili Gloss
a. /dʒumla/	>	/ɟumla/	total
b. /qabla/	>	/kabla/	before
c. /maktaba/	>	/maktaba/	library
d. /sultˁaːn/	>	/sultani/	sultan

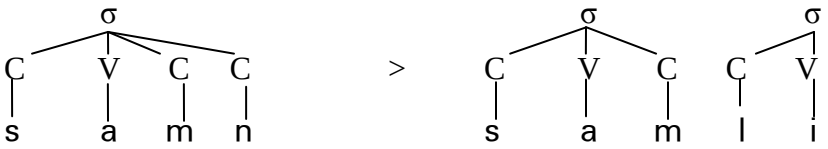


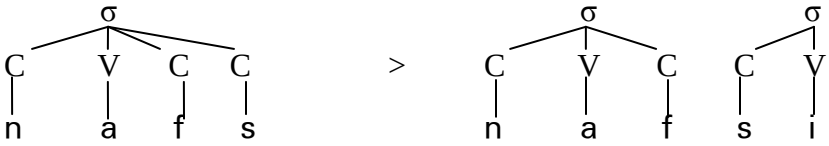
In example (174), the CVC structure is retained in the loanwords because of Kiswahili constraints on syllable initial consonant clusters. When combined together, the coda of the initial syllable and the onset of the following syllable make consonant sequences which are not permitted at syllable initial position in Kiswahili. In Generative CV-Phonology model, impermissible sequences are considered as NSSCs in Kiswahili. Consequently, when applying the Onset First Principle, the consonants are associated to different syllable nodes, as exemplified in (174). This leads to CVC syllable adoption in Kiswahili loanwords. Haugen (1950:212) states that "if the loan is similar enough to the model so that native speaker would accept it as his own, the borrowing speaker may be said to have imported the model into his language, provided it is an innovation in that language". Thus, the loanwords in (174) are said to be adopted in Kiswahili with CVC syllable structure which is similar to the SW's structure.

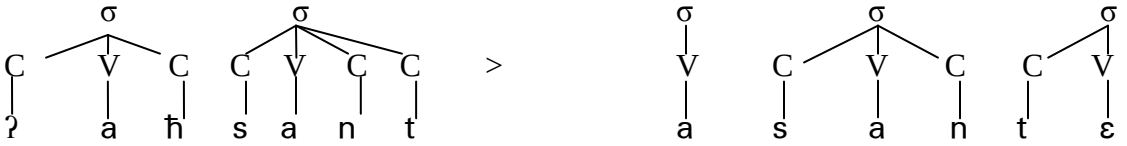
In Chapter Three, it has been observed that all MSA sourcewords with CVCC are changed to other syllable types in Kiswahili loanwords. Some of them are changed to CVC structure, as in the following examples:

(175)

			Kiswahili Gloss
a. /samn/	>	/samli/	ghee
b. /nafs/	>	/nafsi/	soul/self
c. /ʔaħsant/	>	/asantɛ/	thank you







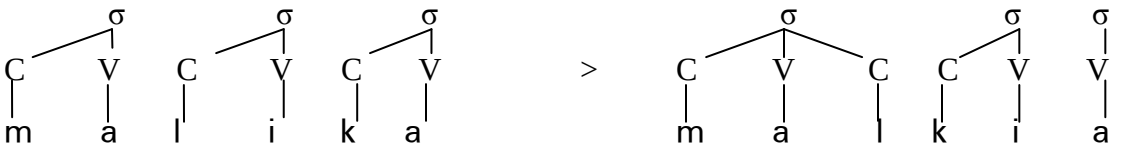
In (175 a, b), the monosyllabic words from MSA are changed to be bi-syllabic in Kiswahili which results in the first syllable of each word gaining the CVC structure. The CVC structure is realized by removing consonant clusters at syllable and word final positions through vowel insertion since consonant clusters are not permitted in Kiswahili at the final position. As a result, the loanwords end up having two syllables each. Similarly, in item (175 c) the final syllable of the sourceword is changed to CVC syllable by removing the consonant cluster through vowel insertion at word final position. The

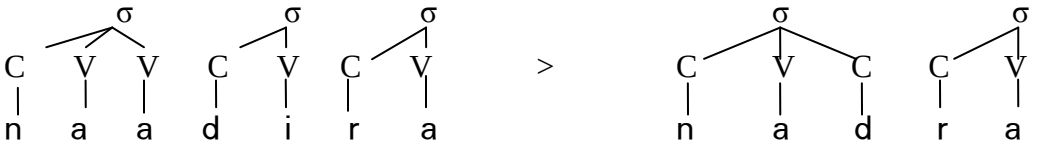
alveolar consonants /n/ and /t/ are re-associated to different syllables because they are not permitted initial consonant clusters in Kiswahili.

There are two cases in our data where CV syllables are changed to CVC in the following Kiswahili loanwords:

(176)

			Kiswahili Gloss
a. /malika/	>	/malkia/	angel
b. /na:dira/	>	/nadra/	rare/scarce





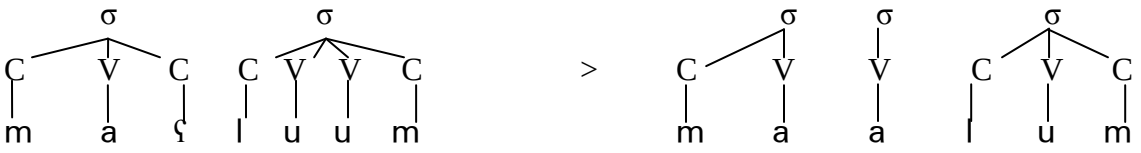
In (176), the sourcewords' CV syllables are changed to CVC through the deletion of a [+high, -back] vowel /i/. According to Abercrombie (1967:73), a syllable must have the central part, that is, the nucleus. Removal of a syllable nucleus automatically deletes a syllable; thus, the vowel deletion removes the syllable altogether. The remaining consonants have to be re-associated to the neighbouring syllable. The consonant sequence lk- and dr- are considered as NSSCs in Kiswahili. For this reason, they are not permitted

clusters at syllable or word initial position. Therefore, after vowel deletion, the alveolar consonants /l/ and /d/ are associated to the first syllable leading to the realization of CVC syllable structure. The consonants /k/ and /r/ are then dominated by the following syllable. Iribemwangi (2010:190) says that (176 b) is a rare and unique case given that no phonological explanation may be offered using the theories he selected to justify the process in regards to this particular word. It is our view that, the motivation for deleting the [+high, -back] vowel /i/ remains a mystery.

There is an instance in our data where CVːC structure changes to CVC in Kiswahili:

(177)

			Kiswahili Gloss	MSA Gloss
/maʕluːm/	>	/maalum/	special	known

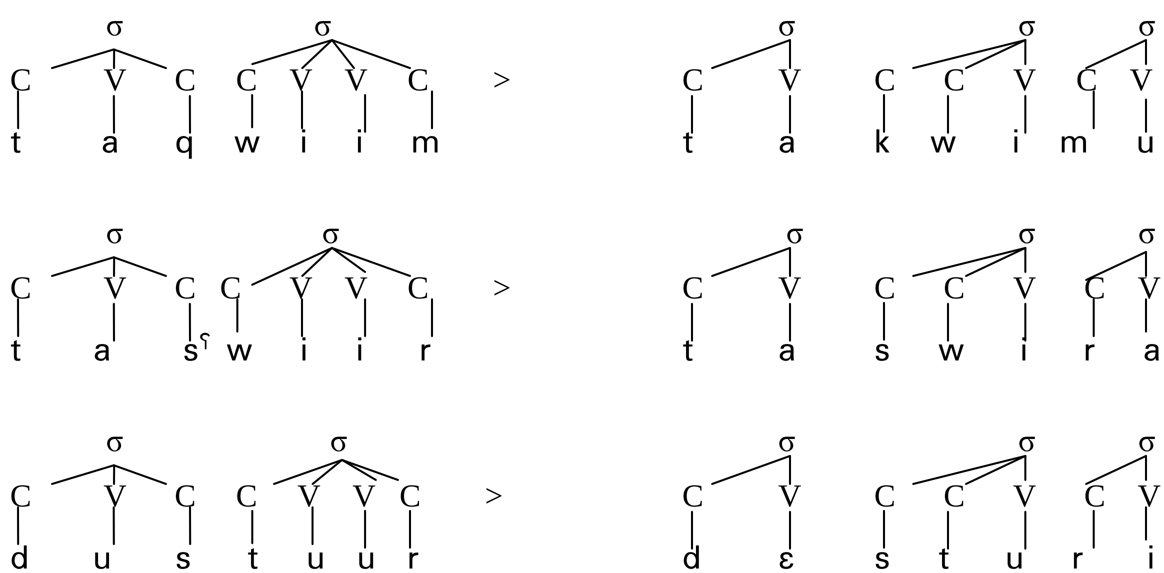


In (177), two processes take place to obtain CVC syllable in the loanword. One, is sound substitution where the voiced pharyngeal fricative /ʕ/ is replaced by a [+low] vowel /a/. Given that a vowel functions as a syllable nucleus in Generative CV-Phonology, it follows that a new syllable is formed as a result of the substitution, thus, increasing the number of syllables to three in the loanword. The second process involves long vowel shortening in the second syllable. The syllable is left closed at word final position since no vowel is inserted. Probably, this is one of the few loanwords with a closed syllable at word final position in Kiswahili as discussed in 4.5 below.

There are exceptional cases where the CVC syllable is changed to another syllable, for instance:

(178)

			Kiswahili Gloss	MSA Gloss
a. /taqwiːm/	>	/takwimu/	statistics	assessment
b. /tasˤwiːr/	>	/taswira/	picture/imagery	
c. /dustuːr/	>	/dɛsturi/	tradition/custom	constitution



In (178), CVC syllable is changed to CCV syllable in the loanwords owing to Kiswahili constraints on syllable initial consonant clusters. In Kiswahili, the syllable initial consonant clusters kw-, sw- and st- are considered as PSSCs. Therefore, by applying the Onset First Principle, these consonants are associated to the same syllable node, realizing the CCV syllable.

4.2 Emergence of VC Syllable

In Chapter Two, the VC syllable structure has not been mentioned as part of MSA and Kiswahili syllabaries. Despite this, the syllable VC[1] is seen in a number of Kiswahili loanwords from MSA. We have observed in this study that some of the MSA heavy syllables CVCC, CVC and CVːC are altered to VC syllable structure in Kiswahili loanwords. In Chapter Two, it has been stated that no syllable in MSA commences with a vowel segment. According to our data observation, there is always a consonant segment at the initial position of an MSA syllable or word. Yet, we find that VC syllable is omitted in, for instance, Bosha (1993:54-62) and Mwita (2009:54-58) who provide the MSA sourcewords without their syllable initial consonants as follows:

(179)

			Kiswahili Gloss
a. /aðuhr/ [2]	>	/aðuhuri/	noon
b. /alasr/	>	/alasiri/	afternoon
c. /aql/	>	/akili/	brains
d. /unwan/	>	/anwani/	address

The presence of the syllable initial consonants in MSA means that the MSA sourcewords should be correctly transcribed as follows:

(180)

			Kiswahili Gloss	MSA Gloss
a. /ʔaðˁðˁuhr/	>	/aðuhuri/	noon	the noon
b. /ʔalʕasˁr/	>	/alasiri/	afternoon	
c. /ʕaql/	>	/akili/	brains/wit	
d. /ʕunwaːn/	>	/anwani/	address	

Later, Bosha (1994:81 - 85) acknowledges the presence of the syllable initial consonants in MSA words which undergo phonological processes as in the following examples:

(181)

Kiswahili Gloss

a. /ʕahd/	>	/ahadi/	promise
b. /ʕajb/	>	/aibu/	shame
c. /taʕb/	>	/taabu/	distress
d. /maʕnaː/	>	/maana/	meaning

Having transcribed the MSA sourcewords with their syllable initial consonants, the syllables of items (179) are:

(182)

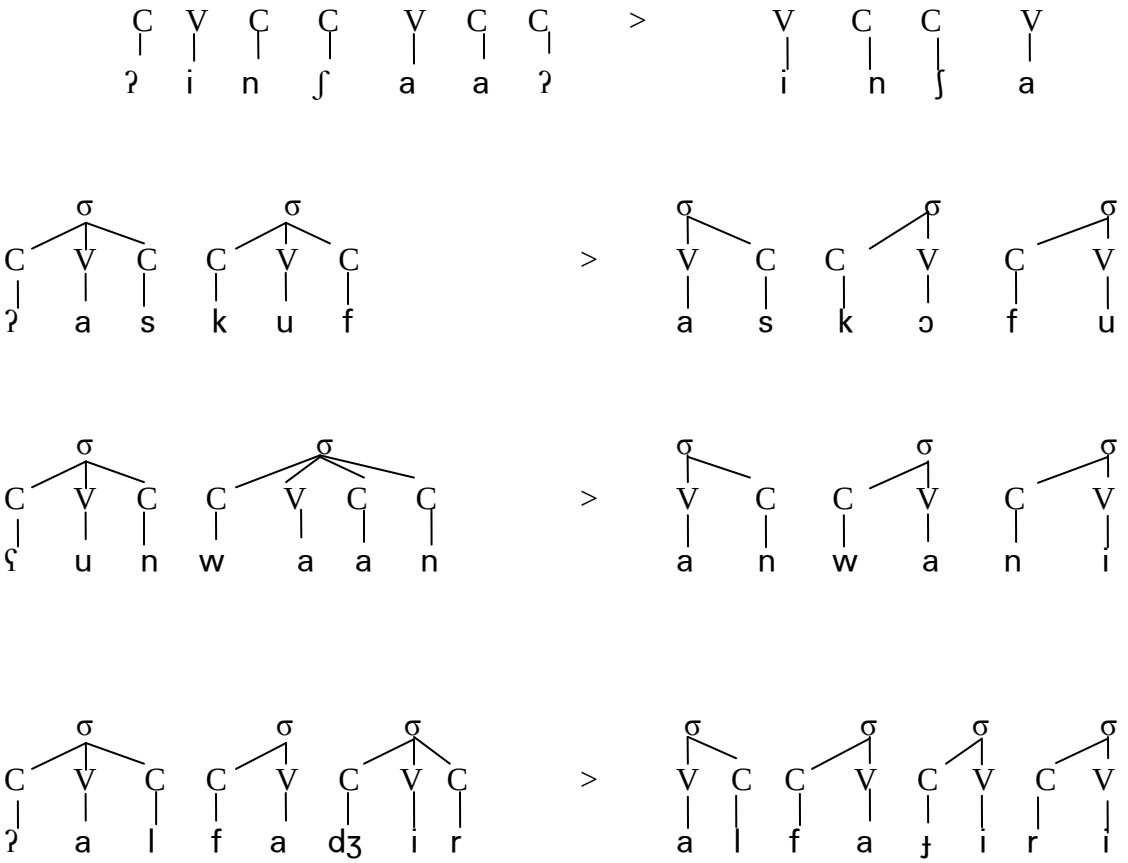
				Kiswahili Gloss
a. /ʔaðˁðˁuhr/	CV-CVCC	>	/aðuhuri/	noon
b. /ʔalʕasr/	CVC-CVCC	>	/alasiri/	afternoon
c. /ʕaql/	CVCC	>	/akili/	brains/wit
d. /ʕunwaːn/	CVC-CVːC	>	/anwani/	address

When MSA sourcewords such as these in (182) get into Kiswahili, a phonological process of deleting the syllable initial pharyngal and glottal consonants occurs, thus, leaving either a V or VC syllable structure. As a result of deleting the pharyngal and glottal segments, some of MSA[3] CVC, CVːC and CVCC syllables are modified to VC syllables in Kiswahili loanwords.

CVC syllable is changed to VC in Kiswahili loanwords as in the following examples:

(183)

			Kiswahili Gloss
a. /ʔinʃaːʔ/	>	/inʃa/	composition
b. /ʔaskuf/	>	/askɔfu/	bishop
c. /ʕunwaːn/	>	/anwani/	address
d. /ʔalfadʒir/	>	/alfaɟiri/	dawn

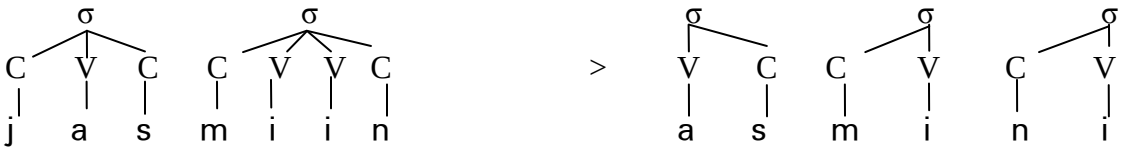


The examples in (183) demonstrate how the CVC structure is changed to VC syllable. The VC syllable is realized following the glottal stop /ʔ/ and pharyngeal fricative /ʕ/ deletion at syllable initial position. The VC syllable is obtained by applying the Onset First Principle. Using this principle, the consonants following one another after the vowel cannot be associated to the same syllable due to Kiswahili constraints pertaining to consonant clusters. In Kiswahili, the consonants n-ʃ, s-k, n-w and l-f are not permitted to form syllable initial clusters. From the Generative CV-Phonology model perspective, these clusters are considered as NSSCs in Kiswahili. Therefore, applying the Onset First Principle, they are re-associated to different syllables which end up obtaining the VC syllables in (183).

We find an interesting scenario where a CVC syllable is changed to VC in the following Kiswahili loanword:

(184)

			Kiswahili Gloss
/jasmiːn/	>	/asmini/	jasmine flower



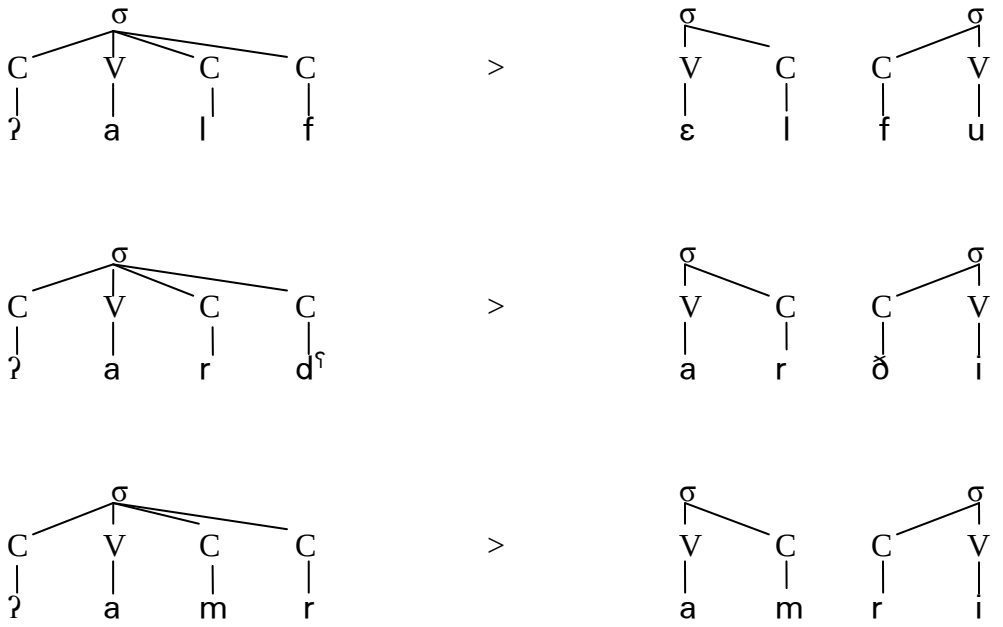
In example (184), though the palatal glide /j/ is one of Kiswahili segments, it is deleted leading to the formation of a VC syllable. In our view, there is no reason for deleting the glide[4]. However, in many cases the glide is omitted in articulation of the word. The best possible reason is Iribemwangi's (2010:52) assertion that phonetically, glides are similar to vowels in their articulation, given that both the palatal glide and the vowel are [+high]. For this reason, there is no point of having the glide and the vowel following one another, as they would be produced as a vowel sequence. As a result, one of the two has to be deleted. In Generative CV-Phonology, a syllable cannot exist without its nucleus. Thus, the vowel cannot be deleted in favour of the glide because it would result in absence of syllable nucleus. Moreover, the glide cannot function as a syllable nucleus. For this reason, the glide is deleted leaving behind the vowel, thus, yielding the VC syllable.

CVCC syllables are also changed to VC syllables in Kiswahili loanwords such as:

(185)

Kiswahili Gloss

a. /ʔalf/	>	/ɛlfu/	thousand
b. /ʔardˤ/	>	/arði/	land
c. /ʔamr/	>	/amri/	a command/order



In (185), the syllable initial glottal stops are deleted since they are not part of Kiswahili phonemic inventory. A vowel is inserted at word final position, leading to the realization of VC syllable. The product of these processes is a loanword with two syllables, of which the first has VC structure. The processes have given Kiswahili a new syllable structure, occasioned by the language's efforts to adapt foreign words. Of the three MSA syllable structures, CVC is most affected to change into VC. We observe that Kiswahili does not adopt the pharyngeal fricatives and glottal stops. It happens that Kiswahili would rather remain with an alien syllable than adopt these particular MSA segments. In our view, VC syllable is emerging to be one of the Kiswahili syllables, as a result of borrowing words from MSA. From the examples in (179 – 185), VC syllable is realized following the deletion of syllable initial consonants (the glottal stop and pharyngeal fricative) which are

not part of Kiswahili phonemic inventory. Thus, adaptation of loanwords from MSA has led to the introduction of a closed syllable VC into Kiswahili syllabary.

We observe an exception with regard to this syllable transformation in the following Kiswahili loanword:

(186)

		Kiswahili Gloss
/ʕizz/ >	/ɛnzi/	dominion/might/power/era

In the case of (186), the CVCC syllable of the sourceword is not changed to obtain VC syllable in the loanword. This is due to Kiswahili constraints on syllable initial clusters. By applying the Onset First Principle, we find that the alveolar nasal /n/ and fricative /z/ fall in the same syllable as a syllable initial cluster. This is because nz- cluster is permitted in Kiswahili words of Bantu origin as a PSSC. According to Hyman (1975:189), the same sequential constraints which operate at the beginning of word should be operative at the beginning of a syllable, even if this syllable is word internal. For this reason, since Kiswahili has words that begin with the nz- cluster, it follows that the loanword's re-syllabification gives a V syllable, followed by a CCV syllable containing the nz- cluster. It is also noted that other processes on the segments also occur to realize this loanword. First of all, the [+high, -back] vowel /i/ is changed to [-high, -

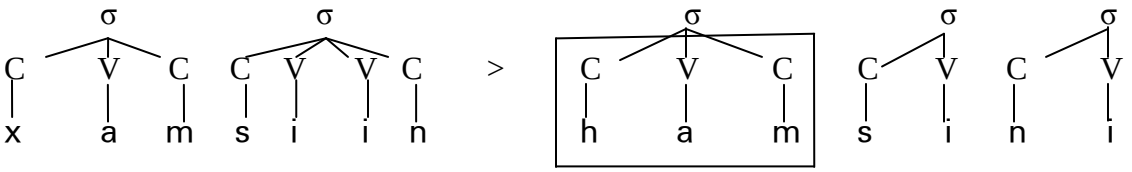
low, -back] vowel /ɛ/ by assimilation rule. The [+high, -back] vowel is assimilated to the geminate alveolar fricative /zz/ which are [+coronal]. However, the vowel is not completely assimilated, thus, yielding a mid vowel. This ends up with a mid vowel followed by a -zz geminate. Since consonant geminates are not part of Kiswahili phonology, the first member of the geminate consonant cluster is replaced by an alveolar nasal. This gives ɛ-nz- in which the alveolar nasal and fricative form a syllable initial consonant cluster. Last, a vowel is inserted at word final position to obtain the preferred open syllable.

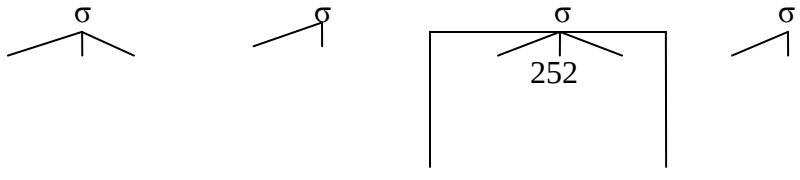
4.3 Adoption of MSA Heavy Syllable Weight

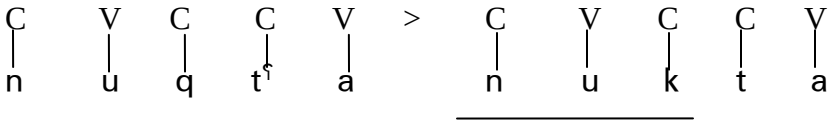
Syllables with heavy weight are adopted in some of the Kiswahili loanwords. This involves CVC and VC syllables only. The two syllable types are adopted in Kiswahili loanwords such as:

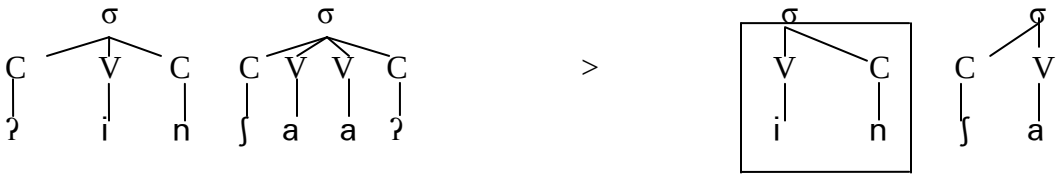
(187)

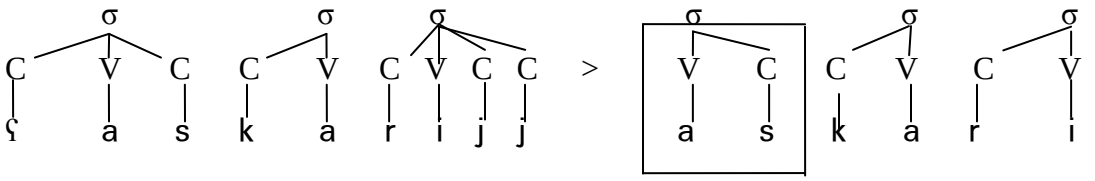
			Kiswahili Gloss
a. /xamsiːn/	>	/hamsini/	fifty
b. /nuqtˤa/	>	/nukta/	a second (unit of time)
c. /ʔinʃaːʔ/	>	/inʃa/	composition
d. /ʕaskarijj/	>	/askari/	police











CVC structure is retained without any phonological changes in (187 a, b). The VC syllable structure in (187 c, d) is realized following the syllable initial consonants /ʔ/ and /ʕ/ deletion. It is important to note that VC structure is not adopted from MSA, but it is clearly a result of phonological adaptation given that it is also alien to Kiswahili. Since these syllables (CVC and VC) have a coda of one consonant, they are introduced into Kiswahili as heavy syllables. According to Clements & Keyser (1983:12) a syllable which contains a complex (branching) nucleus is considered as a heavy syllable. Therefore, CVC and VC syllables found in Kiswahili loanwords are heavy syllables.

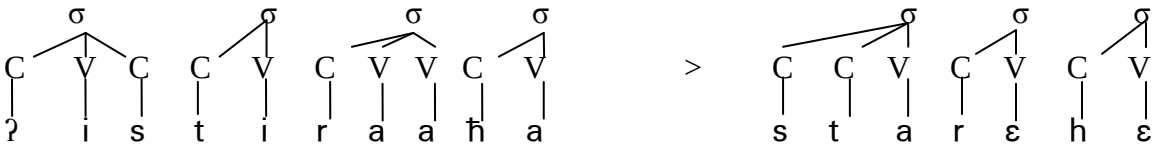
4.4 Introduction of Syllable Initial Consonant Clusters

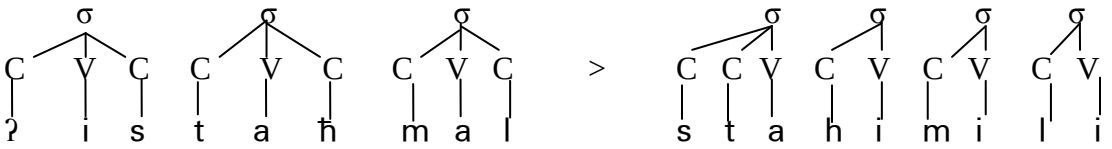
It has been observed in this study that two syllable initial consonant clusters are introduced into Kiswahili through MSA loanwords. In Chapter Two, it has been stated

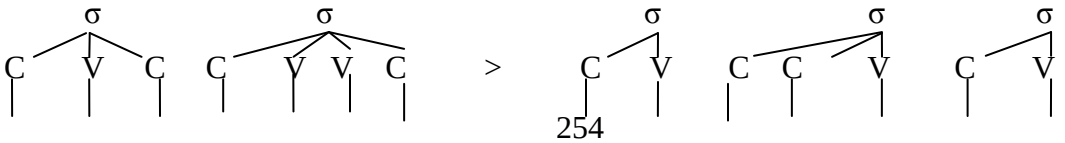
that MSA does not have consonant clusters at word or syllable initial position. Hence, the syllable CCV is not part of MSA syllabary. When loanwords from MSA get into Kiswahili, they get adapted via phonological processes that yield the CCV syllable. In this syllable, there are two consonant clusters alien to Kiswahili (words of Bantu origin) consisting of st- and sw- sequences in the loanwords, for example:

(188)

			Kiswahili Gloss	MSA Gloss
a. /ʔistiraːħa/	>	/starɛhɛ/	leisure	
b. /ʔistaħaqq/	>	/stahiki/	to deserve	
c. /ʔistaħmal/	>	/stahimili/	to bear with	
d. /dustuːr/	>	/dɛsturi/	tradition/custom	constitution







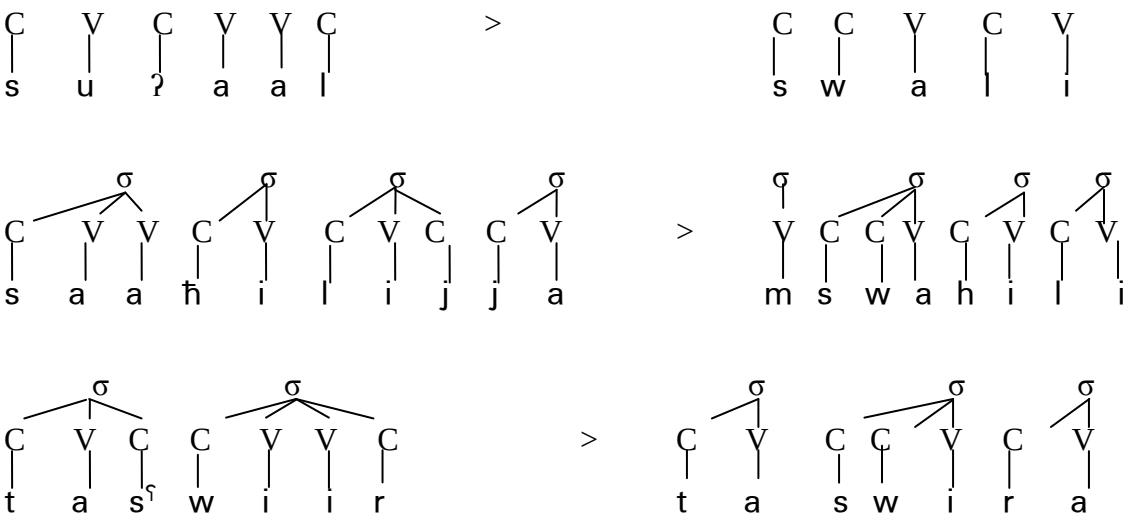
d u s t u u r d ɛ s t u r i

In example (188 a, b, c), the glottal stop and the following [+high, -back] vowel of the sourceword are deleted. The alveolar fricative is then re-associated to the next syllable to realize the syllable initial consonant cluster st- in CCV syllable. In example (188 d), the alveolar fricative which is associated to the initial syllable of the SW, is re-associated to the following syllable in the loanword to realize the syllable initial consonant cluster st-. In this case, deletion is not taking place, but the re-association of the coda to the following syllable, by applying the Onset First Principle. Thus, in (188), the syllable initial consonant cluster st- is obtained in the Kiswahili loanwords.

The following are examples of Kiswahili loanwords having the syllable initial consonant cluster sw- :

(189)

			Kiswahili Gloss
a. /siwaːk/	>	/ mswaki/	toothbrush
b. /suʔaːl/	>	/ swali/	a question
c. /saːħilijja/	>	/mswahili/	Swahili (of a person)
d. /tasˁwiːr/	>	/taswira/	picture/imagery



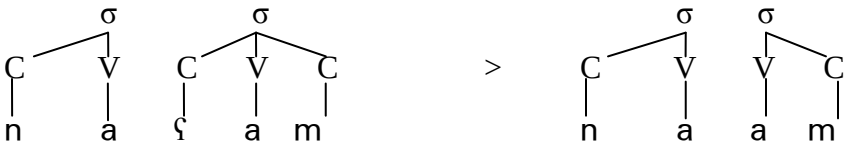
In (189), the syllable initial consonant cluster sw- is realized following phonological processes in the adaptation of MSA words into Kiswahili. In (189 a), the [+high, -back] vowel is deleted which yields the sw- cluster before a bilabial nasal is inserted at word initial position[5]. In item (189 b), the glottal stop is deleted leaving a vowel sequence ua-. The [+round] vowel is replaced by a bilabial glide /w/ thus, yielding the sw- cluster. In (189 c), the long vowel is shortened, and a bilabial glide is inserted to realize the sw- cluster. Finally, in (189 d), the alveolar fricative /s/ dominated by the initial syllable in the sourceword, gets re-associated to the following syllable in the loanword to obtain the sw- cluster. The changes in (188 - 189) take place because st- and sw- clusters are perceived as PSSCs in Kiswahili loanwords. Therefore, st- and sw- are introduced into Kiswahili as permissible syllable and word initial consonant clusters

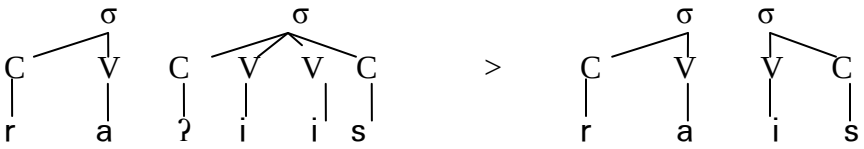
4.5 Adoption of Closed Syllables at Word Final Position

Kiswahili words of Bantu origin do not have closed syllables at medial and final positions. It is for this reason that Kiswahili nativizes almost all foreign words to conform to the open syllable at word final position, as illustrated in Chapter Three. Nevertheless, in this study, we observe closed syllables adoption at word final position in some of the Kiswahili loanwords. This is a new feature in Kiswahili that is brought about by loanwords from MSA such as:

(190)

			Kiswahili Gloss	MSA Gloss
a. /naʕam/	>	/naam/	yes	
b. /maʕluːm/	>	/maalum/	special	known
c. /raʔiːs/	>	/rais/	president	
d. /tˤarab/	>	/taarab/	Swahili music	





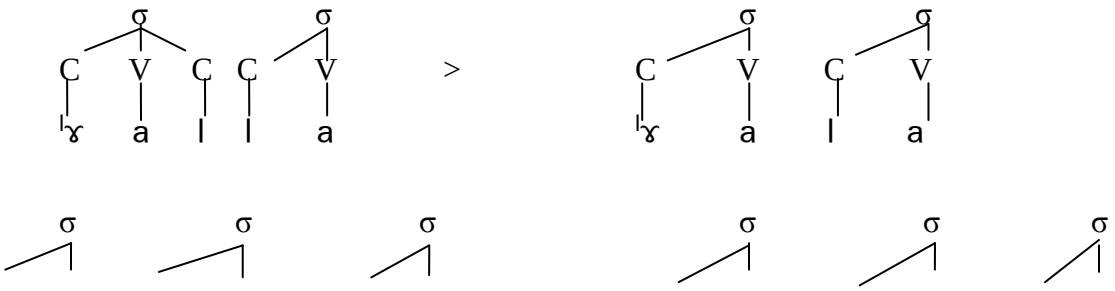
In (190), all the loanwords end with a consonant. It has been stated in Chapter Two that MSA words have closed syllables at final position, but Kiswahili words of Bantu stock are open ended. The examples in (190) demonstrate that some of the loanwords in Kiswahili are not open ended. This implies that closed syllables at word final position have been adopted into Kiswahili through loanwords from MSA. Hall-lew (2002:6) states that, "sometimes a borrowing may never become nativised and occasionally the loanword will actually affect the borrowing language itself". The examples in (190) are evidence to this statement[6].

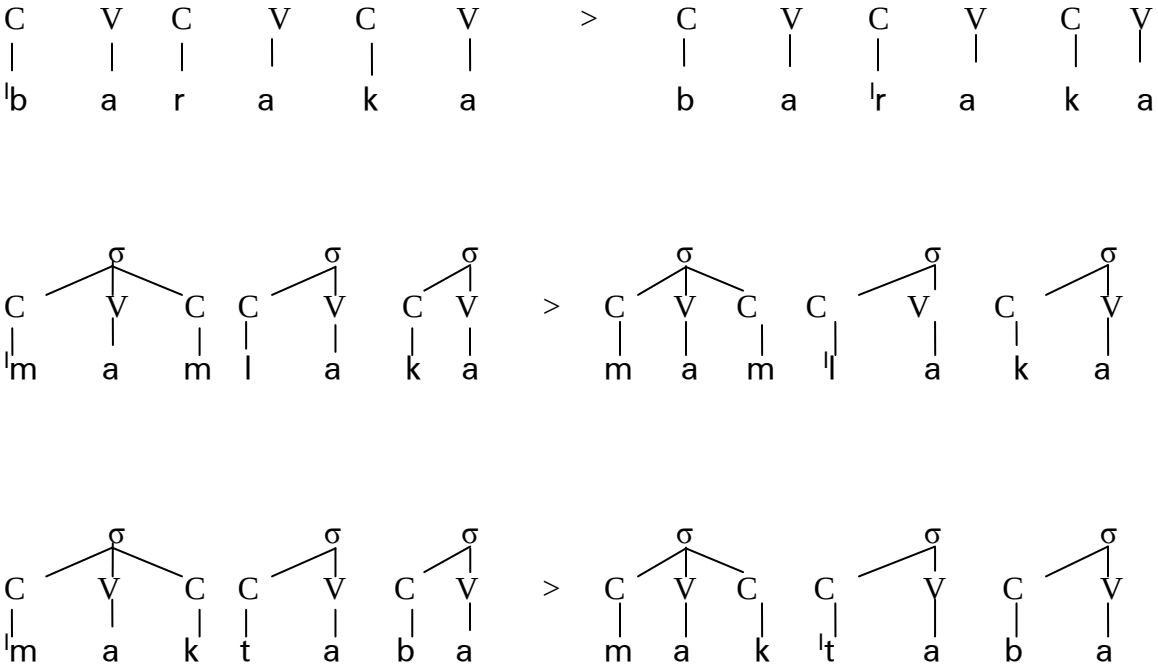
4.6 Adoption of Full Words

A number of MSA sourcewords are adopted in Kiswahili without any segmental or syllable changes[7]. Their segments and syllable structure remain the same as shown in the following loanwords:

(191)

			Kiswahili Gloss	MSA Gloss
a. /ˈʁalla/	>	/ˈʁala/	granary/storeroom	yield
b. /ˈbaraka/	>	/baˈraka/	blessings	
c. /ˈmamlaka/	>	/mamˈlaka/	authority/mandate	
d. /ˈmaktaba/	>	/makˈtaba/	library	





In item (191 a), nothing changes including the stress position because the number and structure of syllables is the same in both the SW and the LW. In items (191 b, c, d), the segments and syllable structure do not change. However, their stress moves from the antepenultimate to the penultimate syllable in the loanwords. The loanwords in (191 c, d) are fully adopted into Kiswahili because of phonotactic constraints. In Kiswahili, ml- and kt- sequences are not permissible syllable initial consonant clusters. For this reason, the consonants cannot be dominated by the same syllable node in order to make the first syllable open. Therefore, the CVC syllable is retained in the loanwords. This is according to Pulgram's final principle which is quoted in Hyman (1975:189) stating that "if the necessary transfer from syllable-initial to syllable-final position leads to an inadmissible syllable-final group of consonants, then the burden of irregularity must be borne by the coda rather than the following onset." In other words, irregularity should be on the coda

not the onset because in assigning the consonants to the node we begin with the onset not the coda (Ngala, 1994:15).

We have observed two of the Kiswahili loanwords having partial adoption by retaining only the segments:

(192)

			Kiswahili Gloss	MSA Gloss
a. / ˈsanaː/	>	/saˈnaa/	art	exaltedness
b. /ˈzinaː/	>	/ziˈnaa/	adultery	

In (192), the CVː syllable structure changes to CV-V in the loanwords. In this case, the long vowel is split into two culminating into two syllables, as has been demonstrated in Chapter Three. The segments remain unchanged, since they are also part of Kiswahili phonemic inventory. Stress is also retained in the penultimate syllables on both the SW and the LW.

4.7 Adoption of MSA Segments in Kiswahili Loanwords

Three of the MSA segments are adopted in Kiswahili loanwords. When speakers come into contact with another language, they are able to identify and borrow some of the segments in the SL and use them in their loanwords. The motivation behind segment adoption is the need to fill phonetic gaps in the RL as observed in Winford's (2003:55) first phonological constraint in borrowing which states that "the existence of gaps in the phonemic inventory of the recipient language facilitates the importation of new phonemes or phonemic oppositions that fill such gaps". The three MSA segments that are adopted in Kiswahili loanwords are /θ/, /ð/ and /ɤ/[8].

4.7.1 Adoption of Voiced Inter-dental Fricative

The voiced inter-dental fricative /ð/ in all the MSA sourcewords is adopted in Kiswahili loanwords such as:

(193)

			Kiswahili Gloss
a. /ðulm/	>	/ðuluma/	oppression
b. /ħifaːð/	>	/hifaði/	conserve
c. /ðahab/	>	/ðahabu/	gold
d. /waðˤiːfa/	>	/waðifa/	post/rank/position

In example (193), the voiced inter-dental fricative is retained as it is in the SWs. The fricative is adopted in the RL because Kiswahili words of Bantu origin do not have inter-dental segments. Therefore, the voiced inter-dental fricative is adopted in Kiswahili loanwords which have it in the MSA sourceword.

In other instances, the voiced inter-dental fricative is used in place of another MSA segment in some of the Kiswahili loanwords such as:

(194)

			Kiswahili Gloss	MSA Gloss
a. /ʔardˤ/	>	/arði/	land	
b. /fadˤl/	>	/faðili/	to sponsor	virtue
c. /maradˤ/	>	/maraði/	disease	
d. /rijaːdˤa/	>	/aðuhuri/	athletics	

In (194), the pharyngealised alveolar stop /dˤ/ is replaced by the voiced inter-dental fricative /ð/. As explained in example (194), the change takes place because of lack of the MSA segments in Kiswahili. As a result, they are replaced by the segment /ð/, which is adopted into Kiswahili sound system. The voiced inter-dental fricative /ð/ is the segment that is closest to the pharyngealised alveolar stop given that it is also from MSA and voiced.

4.7.2 Adoption of Voiceless Inter-dental Fricative

The voiceless inter-dental fricative /θ/ is adopted in all Kiswahili loanwords as shown in the following examples:

(195)

			Kiswahili Gloss
a. /θaːbit/	>	/θabiti/	strong
b. /θawaːb/	>	/θawabu/	reward/gift

c. /maθal/	>	/mɛθali/	proverb
d. /θamaːnuːn/	>	/θɛmanini/	eighty

In (195), the fricative is retained as it is in the SW. As explained in the case of the voiced inter-dental fricative, the voiceless inter-dental fricative adoption is also motivated by phonemic reason. Due to lack of inter-dental segments in the RL, the MSA voiceless inter-dental fricative is also adopted in Kiswahili loanwords.

4.7.3 Adoption of Voiced Velar Fricative

We have observed that the MSA voiced velar fricative /ɤ/ is adopted in all Kiswahili loanwords, for example:

(196)

			Kiswahili Gloss	MSA Gloss
a. /farɤ/	>	/faraɤa/	privacy/seclusion	
b. /baːliɤ/	>	/balɛɤɛ/	to reach puberty	
c. /ɤaraːm/	>	/ɤarama/	cost	a fine
d. /ɤariːq/	>	/ɤarika/	floods	

In (196), the voiced velar fricative is retained as it is in the SWs. Given that Kiswahili words of Bantu origin do not have the segment, the voiced velar fricative is adopted in the loanwords[9]. This is an indication that the segment may have been part of Kiswahili[10]. However, its voiceless counterpart /x/ is not adopted into Kiswahili, though it is realized in other dialects like Amu and Mvita in words such as /axɛra/, /xabari/ and /alxamisi/. Polome (1967: 43) states that the voiceless velar fricative is realized as an allophone of the glottal fricative /h/ in free variation either as the voiceless glottal fricative /h/ or the

voiceless velar fricative /x/ in words like /hɛri/ and /xɛri/. We do not agree with Polome on this issue because in Chapter Two we have stated that the voiceless velar fricative is not an allophone of /h/ since the two segments are not produced at the same point of articulation. Furthermore, the voiceless velar fricative is replaced by the glottal fricative /h/ in all loanwords as illustrated in Chapter Three. However, there are a few loanwords that bear the voiceless velar fricative in Kiswahili. In our opinion, the voiceless velar fricative is a segment that occurs in free variation in Kiswahili, for instance, in words such as /xɛri/, /sabalxɛri/, /axɛra/ and /taxmisa/.

4.8 MSA Effects on Kiswahili Phonology

MSA loanwords have left a significant impact on Kiswahili phonology. Mbaabu (1985:34) states that Kiswahili is sometimes considered as an MSA dialect or a mixture of MSA and other Bantu languages because of the large number of MSA loanwords. Some of these loanwords have MSA syllable structure and segments which have been adopted in Kiswahili loanwords. Words borrowed from MSA have affected Kiswahili phonology in terms of syllable structure, syllable weight and phonemic inventory.

4.8.1 Effects of MSA on Kiswahili Syllable Structure and Syllable Weight

MSA loanwords have affected Kiswahili phonology by introducing closed and heavy syllables. In section 4.1 and 4.2 we have discussed CVC syllable adoption and emergence of VC syllable structure in Kiswahili loanwords. The two syllables are new additions to Kiswahili phonology. According to Iribemwangi (2010: 195), one of the ways in which

borrowing has affected Kiswahili syllable structure is the realization of closed syllables in the loanwords. The two closed syllables realized in Kiswahili loanwords are CVC and VC. There are quite a number of loanwords that have CVC and VC structure in the initial syllables, for example, /maktaba/ (library) and /ɛlfu/ (thousand).

The borrowing of MSA words has also obtained closed syllables at word final positions in Kiswahili. Closed syllables at word final positions are adopted in a number of words such as those given in (155). Iribemwangi (2010: 194) states that "acquisition of a closed syllable system is one of the more dominant features that have been accepted in the phonological structure of Standard Kiswahili". Despite Kiswahili efforts to ensure that all final syllables are open-ended, MSA has impacted on Kiswahili phonology by adopting the closed syllable at the final position in a number of the loanwords. Kiswahili has also obtained heavy syllable weight as a result of borrowing from MSA. Kiswahili words of Bantu origin are characterized by light syllables only. With the incoming of loanwords from MSA, Kiswahili has gained heavy syllables in CVC and VC structures.

MSA has also impacted on Kiswahili phonology with new syllable initial consonant clusters. Though MSA itself does not have CCV syllable structure nor syllable initial consonant clusters, loanwords' adaptation processes have led to the introduction of new consonant clusters in Kiswahili. The new syllable initial consonant clusters are st- and sw- as discussed in 4.4 above. We notice that other syllable initial consonant clusters introduced in Kiswahili include ʃw- and ʃt-, found in loanwords such as:

(197)

MSA		Kiswahili	Kiswahili Gloss	MSA Gloss
/ʃuːraː/	>	/ʃwari/	calm	consensus
/taʃwiːʃ/	>	/taʃwiʃi/	doubt	
/ʔiʃtakaː/	>	/ʃtaka/	to sue	complain

4.8.2 MSA Effects on Kiswahili Phonemic Inventory

In section 4.7, it has been demonstrated that three MSA segments are adopted in some of the Kiswahili loanwords. This implies that MSA has its effects on Kiswahili phonemic inventory by adding to it the three segments, that is, /θ/, /ð/ and /ɤ/. It has been stated in Chapter 2 that these segments are used in words that are foreign to Kiswahili. According to Anttila (1972:167) and Zawawi (1979:140), such foreign sounds should be treated as part of the RL. Thus, the fricatives have become an integral part of Kiswahili phonemes. The introduction of the three segments has therefore increased the number of phonemes in Kiswahili. Using minimal pair analysis, the fricatives can be used to distinguish meaning in Kiswahili loanwords as follows:

(198)

	Phoneme	Kiswahili Gloss
a. ɤali	/ɤ/	expensive
kali	/k/	harsh/bitter
b. ɤarama	/ɤ/	cost
karama	/k/	gift
c. θawabu	/θ/	reward
bawabu	/b/	watchman/guard
d. θamani	/θ/	value
samani	/s/	furniture

e. ðahiri	/ð/	clear
tahiri	/t/	circumcise
f. haðara	/ð/	public
hasara	/s/	loss

The examples in (198), demonstrate that the distinction of meaning is found between loanwords alone, and not between loanwords and words of Bantu origin. Therefore, these segments should be considered as part of Kiswahili phonemic inventory. That is why when describing Kiswahili segments the three are also included (Aswani, 1995:43-44; Mgullu, 1999:67; Aswani, 2001:54). However, as has been suggested in Chapter One of this study, the segments are to be treated as foreign in Kiswahili. Quoting Silverman (1980), Paradis & Lacharite (1997:380) suggest that loanword phonology should be distinct from native phonology. This means that every language has two sets of phonology: native and foreign phonology. Hence, Kiswahili has got its native segments on the one hand, as well as foreign segments on the other. The three Kiswahili foreign segments have been adopted from MSA.

4.8.3 MSA Syllable Structure *vis-à-vis* Kiswahili Syllable Structure in the Loanwords

In Chapter Thr**e**e, MSA syllable structure adaptation in Kiswahili loanwords has been demonstrated. In section 4.1, MSA syllable structure adoption in Kiswahili loanwords has also been observed. The outcome of this study reveals that despite the huge borrowing from MSA, the loanwords have more of Kiswahili syllable structure than MSA syllable

structure. In terms of syllable structure, minimal MSA effect on Kiswahili loanwords is observed, as shown in the table below:

Fig.5

GROUP	**No. of Loanwords with MSA syllable structure**	**No. of Loanwords without MSA syllable structure**
CORPUS A	35	207
CORPUS C	15	69
TOTAL	**50**	**276**

The findings in fig.5 indicate that a total of 50 loanwords from Corpus A and C have MSA syllable structure[11]. On the other hand, 276 loanwords from Corpus A and C do not have the MSA syllable structure. The total number of the loanwords in the two corpuses is 326. Thus, MSA syllable structure percentage in the loanwords is:

50/326 x 100 = 15.33%

On the contrary, Kiswahili syllable structure percentage in the loanwords is:

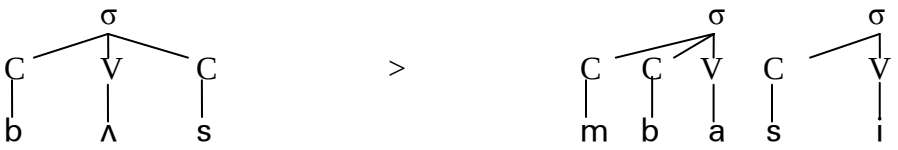
276/326 x 100 = 84.66%

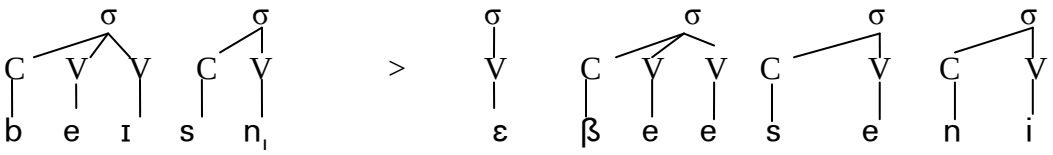
On average, MSA syllable structure is observed in 15% of the loanwords analysed in this study. Our estimation is close to Akidah's (2013:3) estimate who states that, "loanwords of Arabic origin constitute 20% of the entire Kiswahili lexicon". Conversely, Kiswahili syllable structure is found in 85% of the loanwords used in our study. This implies that Kiswahili loanwords with MSA syllable structure constitute less than a quarter of all the loanwords borrowed from MSA. Thus, it is our opinion that in terms of syllable structure, MSA effect on Kiswahili loanwords is insignificant. This is because MSA has added only one syllable, that is, CVC to Kiswahili syllabary. The other three MSA syllables (that is, CV:, CVCC and CV:C) are not adopted into Kiswahili.

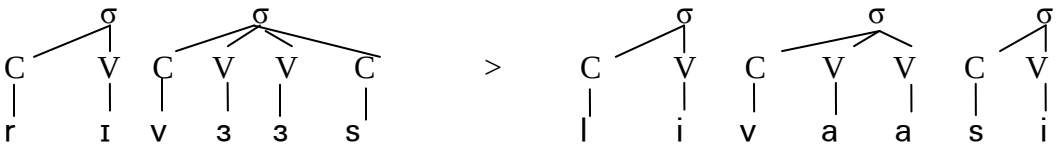
It is a regular occurrence, that languages do not easily adopt foreign elements. Given that the phonological processes occurring in loanwords are universal, it would suffice to also demonstrate how the processes take place in other Bantu languages as well. In Kamba language, for instance, loanwords from English are modified to fit in the syllable structure acceptable by the RL. The English syllables CVC, CVCC, CVːC and CCVːC are retailored to CV, V or other open syllables acceptable in Kikamba[12] as shown hereby:

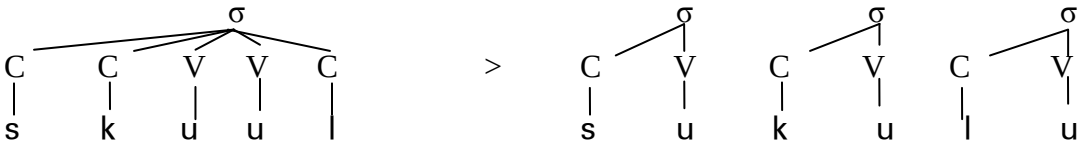
(199)

	English		Kikamba	Gloss
a.	/bʌs/	>	/mbasi/	bus
b.	/beɪsn/	>	/ɛβeːseni/	basin
c.	/rɪvɜːs/	>	/livaːsi/	reverse
d.	/skuːl/	>	/sukulu/	school







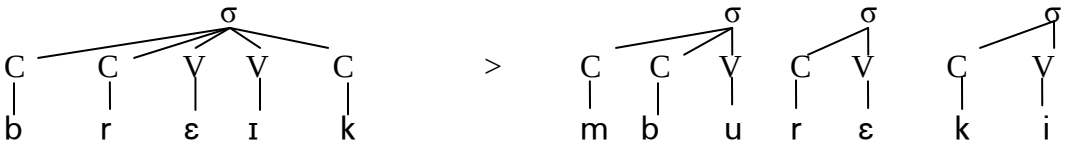


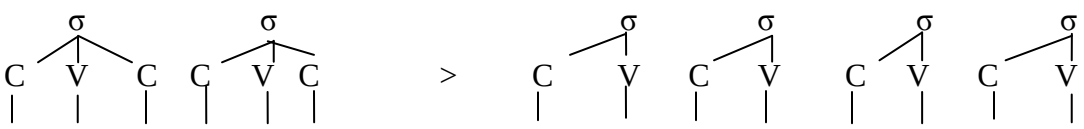
According to Kioko (2005:19), the Kikamba preferred syllables are V (V) and CV (V) which translates to V, Vː, CV and CVː. The examples given in (199), display the adaptation of English words into Kikamba syllables. First, all the final closed syllables are made open by vowel insertion. Then all the foreign syllables are changed mainly to CV, CVː and V which are the preferred syllables in Kikamba.

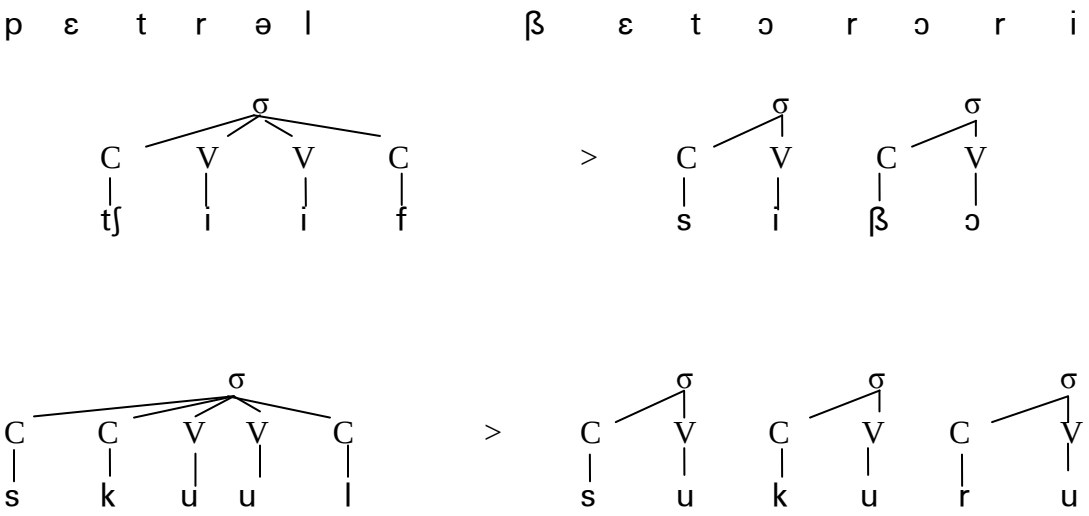
In Kitharaka[13], foreign syllables from English are also modified to syllable structures permitted in the recipient language, for example:

(200)

	English		Kitharaka	Gloss
a.	/brɛɪk/	>	/mburɛki/	brake
b.	/pɛtrəl/	>	/ßɛtɔrɔri/	petrol
c.	/tʃiːf/	>	/sißɔ/	chief
d.	/skuːl/	>	/sukuru/	school



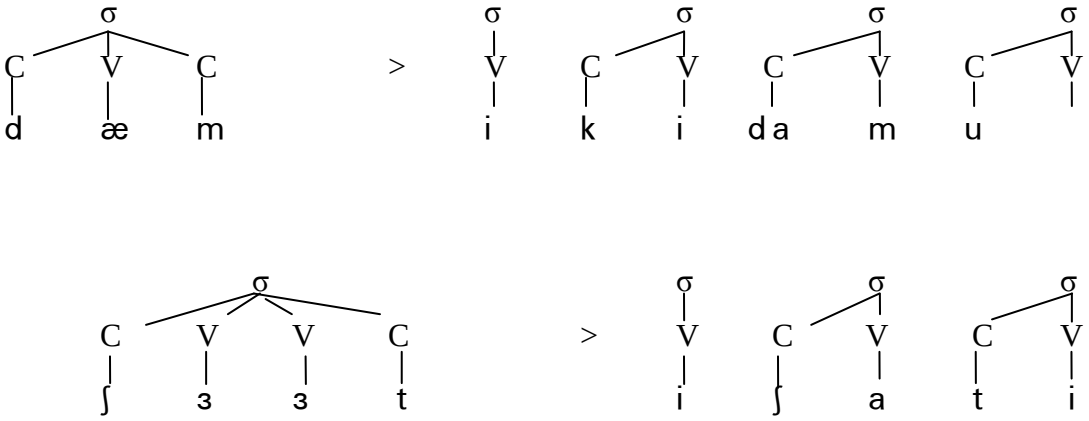


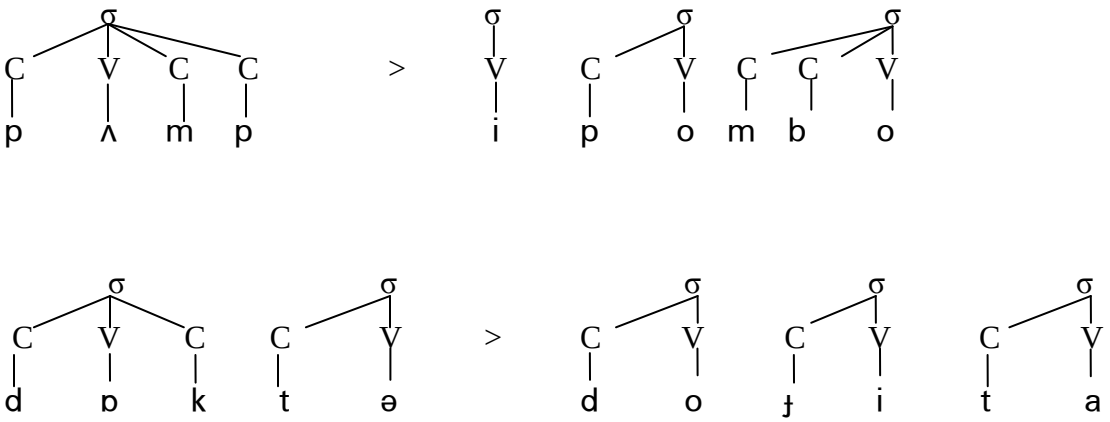


In (200), the foreign syllables are changed to CV syllables in Kitharaka. All the closed syllables are also made open by vowel insertion. Furthermore, in Kinyarwanda (Mbonankira, 2004: 21- 50) foreign syllables are replaced by syllables permissible in the RL, for example:

(201)

	English		Kinyarwanda	Gloss
a.	/dæm/	>	ikidamu	dam
b.	/ʃɜːt/	>	iʃati	shirt
c.	/pʌmp/	>	ipombo	pump
d.	/dɒktə/	>	doɟita	doctor





Examples in (201) demonstrate how foreign syllables from English are modified to syllables acceptable in Kinyarwanda, mainly CV. The examples given in (199 - 201) are evidence that languages are often reluctant to adopt foreign elements coming through loanwords. This is because every language has its phonotactics that determine the preferred syllables in its words. For this reason, when foreign structures get into the language, they are retailored to conform to the phonotactics of the RL. Thus, it is obvious that in most cases the RL is the one that determines the structure of its loanwords, as stated by Antilla (1972:160) that, “once a form has been transplanted from one language into another, it usually is no longer influenced by its original source, although it can be”. This is an important aspect that facilitates the preservation of the structural identity of languages. If a language is easily influenced by foreign elements, then it will lose its identity and resemble the SL. In addition, a language that adopts structures from the SL would be grossly unstable and not have its own structure. Kiswahili preserves its syllable structure by keeping MSA influence on it at its lowest. This is why the preferred syllable in Kiswahili (CV) is evident in the bulk of loanwords that have the structure as observed

in Chapter Three. Therefore, it is not strange for a language not to be grossly influenced by the SL. As a matter of fact, languages are expected to resist SL's influences in order to preserve their identity, otherwise they will end up being a copy of the SL. For instance, if Kiswahili adopted the pharyngal and glottal segments, as well as the closed syllables, it would be difficult to differentiate between Kiswahili and MSA.

4.9 Impact of MSA Loanwords on Kiswahili *vis-à-vis* Other Foreign Languages

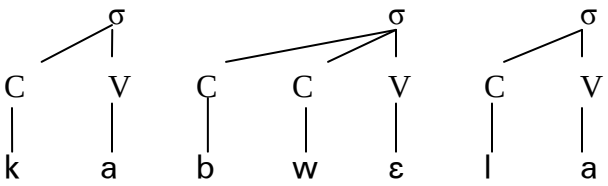
As has been stated in Chapter One, the Swahili people have a history of long contacts with both local and foreign people. According to Mbaabu (1985:45-46), the Swahili had contacts with local communities such as Nyamwezi, Haya and Ha. Chiraghdin & Mnyampala (1977:12-18) state that the Swahili also had contacts with foreign communities such as Arabs, Persians, Indians, Portuguese, Turks, English, French and Malay. As a result of the contact, the borrowing process occurred which resulted in the loanwords found in Kiswahili. Kiswahili contact with local Bantu languages resulted in the borrowing process from the local languages to Kiswahili[14]. In this study, we analyse loanwords borrowed from local Bantu languages as well as from other foreign languages in order to make a comparison of their syllable structures with those borrowed from MSA. By so doing, we are able to identify syllable structures changes between Bantu languages (if any) and syllable structure adoption from the other foreign languages into Kiswahili (if any).

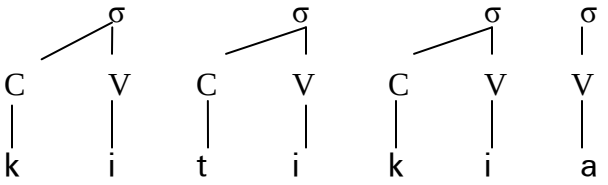
4.9.1 Loanwords from Bantu Languages

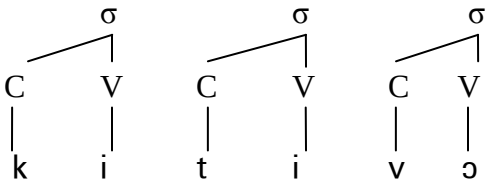
A number of words have been borrowed from other Bantu languages into Kiswahili. Examples of Kiswahili loanwords borrowed from local Bantu languages (Temu,1984:118-119; Mbaabu, 1985:46-48) include:

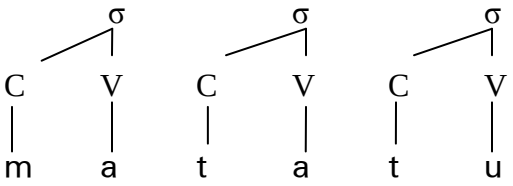
(202)

	Loanword	SL	Kiswahili Gloss
a.	/kabwɛla/	Kinyamwezi	common man
b.	/kitikia/	Ha	toy
c.	/kitivɔ/	Kipare	faculty
d.	/matatu/	Gikuyu	passenger van









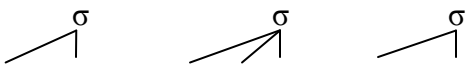
The syllables found in the loanwords given in (202), are CV and CCV. Given that these syllables are considered as the PSSCs in Kiswahili, no phonological change takes place in the borrowing process from the local Bantu languages to Kiswahili. This is because of the fact that Kiswahili and the SLs are Bantu languages, and so they have similar syllable structures and segments.

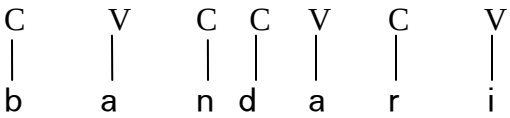
4.9.2 Loanwords from Other Foreign Languages

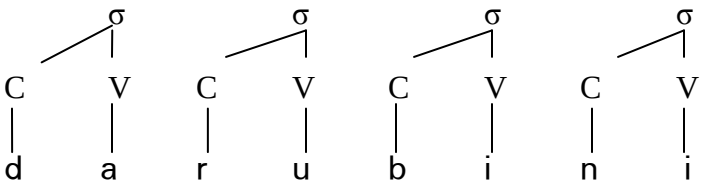
The scenario is different in loanwords from foreign languages other than MSA. A number of the loanwords undergo phonological processes to be adapted into Kiswahili syllable structure. On the other hand, some of these loanwords are adopted with their SW's syllable structure. Kiswahili contact with foreign languages other than MSA also gave rise to loanwords[15] as demonstrated in examples below (Chiraghdin & Mnyampala, 1977:12-17):

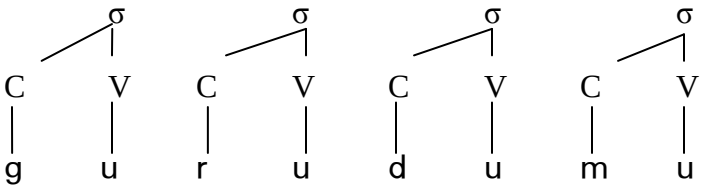
(203)

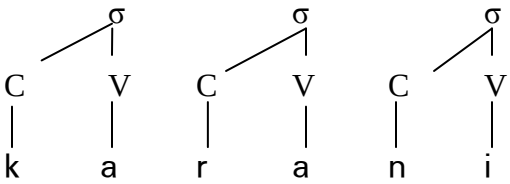
	Loanword	SL	Kiswahili Gloss
a.	/bandari/	Persian	harbor
b.	/darubini/	Persian	telescope
c.	/gurudumu/	Persian	wheel
d.	/karani/	Persian	clerk







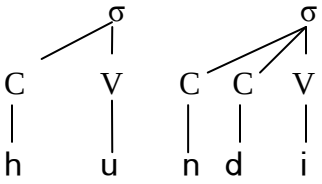




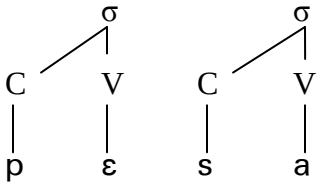
(204)

	Loanword	SL	Kiswahili Gloss
a.	/baɟia/	Hindi	cake of ground lentils and pepper
b.	/dɔbi/	Hindi	laundry man
c.	/hundi/	Hindi	cheque
d.	/pɛsa/	Hindi	money

b a ɟ i a

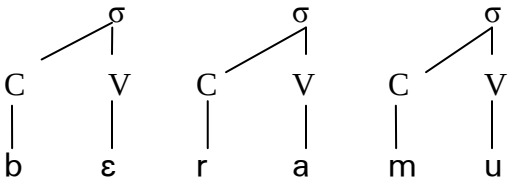


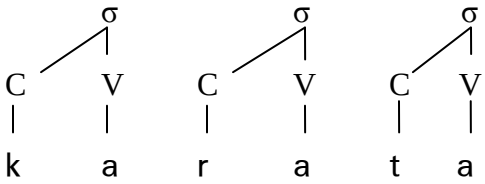
d ɔ b i

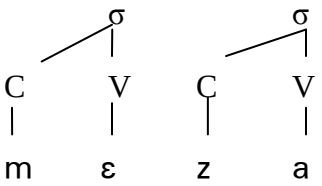


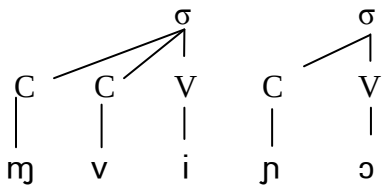
(205)

	Loanword	SL	Kiswahili Gloss
a.	/bɛramu/	Portuguese	flag/banner
b.	/karata/	Portuguese	playing card
c.	/mɛza/	Portuguese	table
d.	/ɱviɲɔ/	Portuguese	wine
e.			



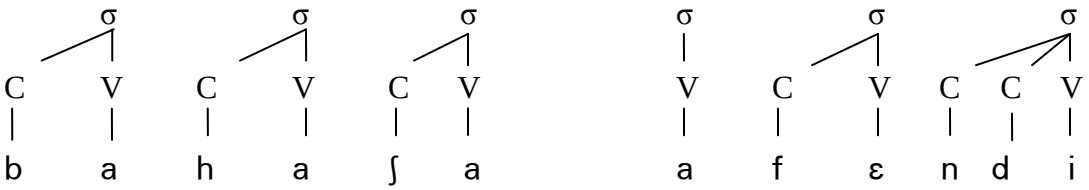






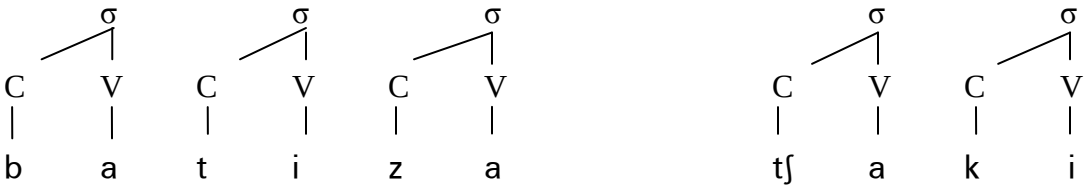
(206)

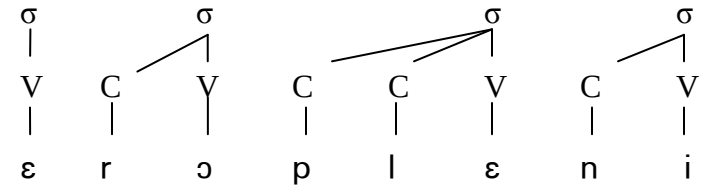
	Loanword	SL	Kiswahili Gloss
a.	/bahaʃa/	Turkish	envelope
b.	/afɛndi/ address	Turkish	respectful/formal

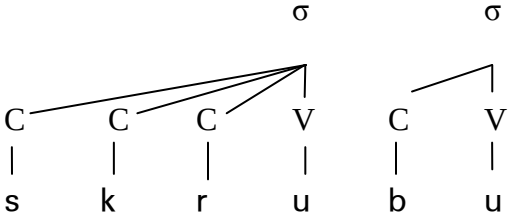


(207)

	Loanword	SL	Kiswahili Gloss
a.	/batiza/	English	baptize
b.	/tʃaki/	English	chalk
c.	/ɛrɔplɛni/	English	aeroplane
d.	/skrubu/	English	screw







The examples in (203 – 207), show that the Kiswahili loanwords contain syllable structures CV, V, CCV and CCCV. The loanwords in (203 – 206) have syllable structures that are permissible in Kiswahili. This means that loanwords borrowed from Persian, Hindi, Portuguese and Turkish are fully adapted to conform to Kiswahili syllable structure. Item (207 d) has a syllable initial cluster comprising three consonants skr-.We have stated in Chapter Two that Kiswahili words of Bantu stock have the CCCV syllable. The loanword from English in (207d) has only introduced the syllable with a new consonant cluster skr- which is not in Kiswahili words of Bantu origin. As a result of borrowing, loanwords bring in loan syllables into the RL, which correspond to the sound of the loanword (Hall-lew, 2002:24). The CCCV syllable is one of the loan syllables in Kiswahili which corresponds to English syllable CCCV. Thus, item (207d) demonstrates that unlike the other foreign languages, English has effect on Kiswahili phonology by introducing the skr- consonant cluster.

On the whole, it is our opinion that compared to other foreign languages, MSA syllable structure has a significant impact on Kiswahili phonology. This is because Persian, Hindi, Portuguese and Turkish loanwords do not impact Kiswahili loanwords with their syllable structure. In contrast, Kiswahili has adopted the CVC syllable, three segments and closed syllables at word final position from MSA, as well as VC syllable through adaptation of loanwords borrowed from MSA[16]. We concur with Mwita (2009:51) who states that CCCV is one of the syllables found in Kiswahili loanwords. In the Generative CV-Phonology model, the CCCV syllable is obtained using the Onset First Principle in

syllabifying the Kiswahili words of Bantu origin /tʃungwa/ and /ngwɛna/. In addition, the CCCV syllable structure is found in Kiswahili loanwords borrowed from English only. Unlike MSA, English has not impacted on Kiswahili's phonemic inventory with its segments. To this end, we are of the view that Kiswahili is generally intolerant to foreign structures. This is because out of the four MSA syllable types, Kiswahili adopts only the CVC syllable. Therefore, we take a different point of view from Mwita (2009: 59) who states that there is a high level of tolerance in Kiswahili loanwords. Based on our observation, we are of the view that Kiswahili has low tolerance level of foreign syllable structures.

Conclusion

In this Chapter, we have discussed MSA syllable structure adoption in Kiswahili loanwords. This adoption is evident in the retention of segments, a syllable structure and loanwords from MSA. It has been observed that CVC syllable structure is adopted in some of the Kiswahili loanwords. Moreover, it is noted that another closed syllable VC has emerged in Kiswahili loanwords, through adaptation of loanwords borrowed from MSA. Although VC is not one of MSA syllables, it is realized in the words borrowed from MSA as a consequence of a phonological process in Kiswahili. Closed syllables at word final position are also adopted in a few Kiswahili loanwords. We have also discussed the introduction of new syllable initial consonant clusters st- and sw- into Kiswahili through the loanwords borrowed from MSA. In addition, three MSA segments are adopted in Kiswahili loanwords. The segments are voiceless inter-dental fricative /θ/, voiced inter-dental fricative /ð/ and voiceless velar fricative /ɤ/.

MSA effects on Kiswahili phonology have also been demonstrated in this Chapter. Kiswahili phonology is impacted by MSA loanwords with closed syllables at medial and final positions (CVC and VC), heavy syllables and foreign segments. MSA loanwords have also impacted Kiswahili phonology with new syllable initial consonant clusters st- and sw-. We have also noted that, generally, despite adopting MSA features, Kiswahili has low tolerance level of foreign syllable structures.

ENDNOTES

[1] Linguists such as Mgullu (1999:77) and Iribemwangi (2010:194) acknowledge the existence of VC syllable in Kiswahili loanwords.

[2] In this study we have adjusted from /adhuhr/ as used in Bosha (1993:54) to /ðuhr/.

[3] Some loanwords with CVC syllables are not modified in Kiswahili, for example, *halmashauri* and *hamsini.*

[4] In TUKI (1981, 2001) the word is interchangeably used with /jasmini/.

[5] The bilabial nasal is inserted at the word initial positionin item (154 a, c) for morphological reason, which is to represent the nominal class 3 and 1 respectively, in singular form.

[6]Aswani (1995:57) also observes the introduction of closed syllables at word final position in Kiswahili via loanwords, and even prescribes for them to be changed to the CV syllable structure.

[7] Stress placement in some of the loanwords changes from one syllable to another.

[8] This is also noted by Polome (1967:169) and Aswani (1995:43-44; 2001:54-55).

[9] Other Bantu languages have the voiced velar fricative in their phonemic system, for example, Kidawida and Kikuyu. See Mwaliwa C. H. (2000: 19, 21), Wachera S. K. (2008:27, 29) and Karuru-Iribe D.W. (2012: 20-22).

[10] In TUKI (2001) Dictionary, there is only one lexical item, that is, /ɤazi/ which means *war*, with the voiced velar fricative, whose origin is not MSA. Many of the words in the dictionary that have the segment are borrowed from MSA.

[11] MSA syllable structure in terms of syllable, segment, weight and initial consonant cluster.

[12] See Whiteley & Muli (1962:64), Whiteley (1963:151) Note that we have modified the phonetic transcription from /ˉiveːseni/ to /ɛβɛːsɛni/.

[13] Kithaka wa Mberia (1993:191-199) Note that we have modified the phonetic transcription from /ciβo/ to / siβo/.

[14] It should however be remembered that local Bantu languages have also borrowed from Kiswahili.

[15] It is acknowledged that borrowing from Kiswahili to the foreign languages also took place, for example from Kiswahili to Gujarati. See Patel (1842:1-2).

[16] It is noted that English has also impacted on Kiswahili phonology in terms of the syllable structure CCCV and closed syllables, for example, in words such as /spriŋgi/ and /tɛknɔlɔjia/ (Iribemwangi, 2010:194).

CHAPTER FIVE

CONCLUSIONS

5.0 Introduction

In this final Chapter, we make conclusions of this study. First, we give a summary of our findings based on the discussions in Chapter Two, Three and Four. In the light of these findings, we show how our hypotheses as presented in 1.9 have been confirmed or falsified. We then show how this study makes a contribution to the study of Kiswahili

phonology. Finally, we make recommendations for further research in Kiswahili phonology in the light of the scope of this study.

5.1 Summary of Findings

In this study, we were guided by four objectives as outlined in 1.3. In Chapter Two, we have discussed the syllable structures of Kiswahili and MSA. We have found that Kiswahili and MSA have two common syllable structures which are CV and CVC. The two languages differ in other syllable types: MSA also has CVː, CVCC and CVːC; while Kiswahili has V, CCV, CCCV and VC. In terms of syllable weight, both Kiswahili and MSA have light and heavy syllables. MSA light syllable is CV only. The light syllables in Kiswahili include CV, V, CCV and CCCV. Heavy syllables in MSA are CVː, CVCC and CVːC; while Kiswahili heavy syllables are CVC and VC. MSA has syllable final consonant clusters in CVCC syllable, while Kiswahili has syllable initial consonant clusters in the CCV and CCCV syllables even in some of the loanwords from MSA. We have also found that stress placement in Kiswahili and MSA is similar in some words and different in other words. This is because stress placement in MSA is not fixed, although predominantly on the penultimate syllable. Depending on the word in question, stress can be on the antepenultimate, if not on the penultimate syllable in MSA. Stress is only marked on the penultimate syllable in both Kiswahili words of Bantu origin and loanwords. This is because Kiswahili stress is fixed only on the penultimate syllable.

In terms of segments, both MSA and Kiswahili have the vowels /a/, /i/ and /u/. In addition to the three vowels, Kiswahili has the lax mid vowels /ɛ/ and /ɔ/. Moreover, Kiswahili does not have diphthongs which are found in MSA, that is, /aw/ and /aj/. MSA has long vowels /aː/, /iː/ and /uː/, but Kiswahili has short vowels only. The consonants found in both Kiswahili and MSA include the oral stops /b/, /t/ and /d/; nasal stops /m/ and /n/; fricatives /f/, /s/, /z/, /ʃ/, /ð/, /ɤ/ and /θ/; liquids /l/ and /r/; and glides /w/ and /j/. Of these consonants /ð/, /θ/ and /ɤ/ have been observed in Kiswahili loanwords. Consonants that are found in Kiswahili but not in MSA include the oral and nasal stops /p/, /ɟ/, /g/ /ɲ/ and ŋ/; the fricative /v/ and the affricate /tʃ/. MSA consonants that are not in Kiswahili include the oral stops /ʔ/, /dˤ/, /tˤ/ and /q/; fricatives /ħ/, /sˤ/, /ðˤ/, /ʕ/ and /x/.

In Chapter Three, we have discussed loanwords' adaptation to Kiswahili syllable structure. We have found out that many of the loanwords from MSA are adapted to conform to various Kiswahili syllable structures. In the course of retailoring the loanwords, two kinds of natural processes are involved, namely: PSSRs and assimilation rules. Some of the phonological processes are motivated by PSSRs of the RL. Other processes are motivated by assimilation rules. Phonemic and morphological factors also motivated some of the phonological processes in the loanwords. MSA sourcewords with syllables alien to Kiswahili that is, CVCC, CVːC and CVː are changed into syllable

structures permissible by Kiswahili syllable structure constraints. Consequently, a bulk of the loanwords with MSA syllable structures are changed to Kiswahili syllable structures CV, V and CCV. This confirms Katamba's (1989:166) statement that "the syllable plays an important role in conditioning the application of phonological rules internal to a language". Phonotactic rules with regard to the preferred syllable structures in Kiswahili are observed to have been the motivation behind the phonological processes involved in the adaptation of the loanwords. Moreover, we have observed that some of the phonological processes are motivated by phonemic and morphological factors. These processes also lead to the realization of various types of Kiswahili syllables in the loanwords.

The phonological processes involved in retailoring of the loanwords include segment deletion, insertion, shortening, splitting, monophthongisation, substitution, reduction and metathesis in order to realize the preferred syllables of Kiswahili. It has been observed that MSA syllables are changed to Kiswahili syllables by making the closed syllable open, shortening the long vowel syllables, splitting the long vowel syllables and eliminating final consonant cluster syllables. The CV syllable in MSA is retained in the loanwords because CV is the optimal syllable structure in Kiswahili as it is in all languages. We have also found that all the loanwords adapted to the penultimate stress position. Sourcewords that had stress in the antepenultimate syllable have their stress placement moved to the penultimate syllable in Kiswahili loanwords. Moreover, majority of the loanwords obtain light syllable weight as they are adapted into Kiswahili. MSA sourcewords which have heavy syllables such as CVCC, CV:C and CV: are changed to

light syllables either of CV, V or CCV in Kiswahili loanwords. In addition, Kiswahili also adapts the loanwords by imposing its segments on them. In many cases, the MSA segments are either deleted or replaced by other segments found in Kiswahili. In our view, Kiswahili structure has massive influence on its loanwords, which confirms Anttila's (1972) observation that it is the recipient language that governs the structure of the loanwords, more than the source language.

In Chapter Four, we have discussed the adoption of MSA syllable structure in Kiswahili loanwords. We have found that the only syllable that is adopted in Kiswahili loanwords is CVC. The CVC syllable is retained in some of the loanwords in Kiswahili. A few sourcewords having other MSA syllables are also changed to CVC. We have also found that VC syllable has emerged in Kiswahili although it is not an MSA syllable. The VC syllable is realized as a consequence of a phonological processes that occurs on the loanwords in a bid to adapt the Kiswahili syllable structure. In addition, new syllable initial consonant clusters are introduced into Kiswahili through the loanwords from MSA. In MSA, there are no syllable initial consonant clusters, but in adapting the MSA loanwords, phonological processes lead to the realization of a CCV syllable with new consonant clusters in the loanwords. MSA stress on the antepenultimate position is not adopted in Kiswahili. In fact, all the loanwords in Kiswahili have their stress marked on the penultimate syllable.

We have also found that three segments /θ/, /ð/ and /ɤ/ from MSA are adopted into Kiswahili through the loanwords. The segments are not replaced rather they are retained

in some of the loanwords in Kiswahili. In addition, we have observed that though there is MSA syllable structure adoption in the loanwords, this adoption is not equivalent to Kiswahili syllable structure adaptation in the loanwords. MSA syllable structure adoption is less than Kiswahili syllable structure adaptation in the loanwords. This outcome shows that Kiswahili is quite resilient to foreign structures, which therefore negates Mwita's (2009:59) position that Kiswahili has high level of tolerance. In fact, the opposite has been observed in this study, as we find that many of the syllables are not adopted with MSA structures.

In Chapter Four, we have also evaluated MSA effects on Kiswahili phonology through the loanwords. MSA loanwords have impacted on Kiswahili phonology by introducing the three segments foreign to Kiswahili. The voiceless inter-dental fricative /θ/, voiced inter-dental fricative /ð/ and voiced velar fricative /ɤ/ have become part of Kiswahili phonemic inventory, as a result of phonemic adoption that took place on the loanwords. Another effect has been seen on Kiswahili syllable structure. As posited by Aswani (1995) and others, MSA loanwords introduced closed syllables into Kiswahili phonology. Initially, Kiswahili words of Bantu origin had no closed syllables. The incoming of MSA loanwords paved way for closed syllables, even at word final position, to get into Kiswahili sound system, in particular CVC and VC. These syllable structures have been observed in the loanwords only, and thus they have affected Kiswahili phonology by increasing the number of syllable types to six: CV, CCV, CCCV, V, CVC and VC. In addition, MSA loanwords have introduced heavy syllables into Kiswahili phonology through the adoption of CVC and VC structures. Moreover, new syllable initial

consonant clusters st- and sw- have been introduced into Kiswahili. Finally, it has been observed that only 15% of the loanwords we analysed are adopted with MSA syllable structure in Kiswahili. 85% of the loanwords we analysed are adapted to conform to Kiswahili syllable structures. These statistics portray the resilience of Kiswahili in adopting foreign forms, in that the language is very reluctant to conform to foreign structures. One thing that Kiswahili never compromised is stress placement, as all the loanwords have their stress marked on the penultimate. From this study, we can say that although Kiswahili has borrowed heavily from MSA, it has adopted only one syllable structure from the SL.

5.2 Outcome of Hypotheses

This study had four hypotheses outlined in 1.9 as follows:

i) Some of the Kiswahili syllable structures are similar to MSA syllable structures while some syllable structures are not similar.

ii) Loanwords borrowed from MSA are adapted to conform to Kiswahili syllable structures.

iii) Some loanwords are adopted in Kiswahili with MSA syllable structures.

iv) Kiswahili phonology is significantly affected by loanwords from MSA.

All the four hypotheses have been confirmed. The first hypothesis is of the view that there are similarities and differences in the syllable structures of Kiswahili and MSA. That is, some of the syllable structures in Kiswahili and MSA are the same, while some

syllable structures in Kiswahili and MSA are not the same. In Chapter Two, we have found out that the first hypothesis is confirmed. It has been observed that both Kiswahili and MSA have two similar syllable structures, that is, CV and CVC. The CV syllable is found in Kiswahili words of Bantu origin as well as loanwords from MSA. The CVC syllable is found in Kiswahili loanwords that are borrowed from MSA. The two languages have syllable structures that are unique to each one of them. Whereas Kiswahili has V, CCV, CCCV and VC syllables; MSA has CVː, CVːC and CVCC syllable structures. The three syllable structures, that is, V, CCV and CCCV, are observed in Kiswahili words of Bantu origin and in the loanwords. The VC syllable structure is only found in Kiswahili loanwords. MSA does not have these syllable structures due to its phonotactic constraints with regard to the syllable. In MSA, every syllable must begin with an onset that constitutes only one consonant. Therefore, MSA cannot have the syllables V, CCV, CCCV and VC since they violate this phonotactic constraint. On the other hand, Kiswahili does not have the MSA syllables CVː, CVːC and CVCC even in the loanwords. This is because Kiswahili's phonotactic constraints do not allow for long vowels, geminate consonants and consonant clusters at the final position.

The second hypothesis states that loanwords from MSA get adapted to conform to well-formed Kiswahili syllable structures. This means that loanwords borrowed from MSA are retailored to be similar to Kiswahili syllable structures. The second hypothesis is also confirmed in Chapter Three. We find that the bulk of MSA loanwords are adapted to conform to well-formed Kiswahili syllable structures. This is realized by the various phonological processes that occur in the loanwords in an effort to make them obtain the

preferred Kiswahili syllable structures. Almost all the loanwords undergo at least one phonological process to be conformed to Kiswahili syllable structure, that is, CV, V and CCV.

The third hypothesis holds that some Kiswahili loanwords are adopted with MSA syllable structures. In other words, there are loanwords that have retained the MSA syllable structure in Kiswahili. The hypothesis is also confirmed in Chapter Four. We have realized that one MSA syllable structure is adopted in some of the loanwords borrowed into Kiswahili. It is the CVC syllable structure only that is adopted in Kiswahili. The closed syllable VC is also introduced into Kiswahili as a consequence of adapting MSA loanwords in the RL. Contrary to our expectation, we realize that MSA syllable structure adoption is insignificant at only 15%. Given that Kiswahili has heavily borrowed from MSA, it was expected by the researcher that MSA features' adoption would be significant as well. It has been observed in this study that despite the heavy borrowing from MSA, the loanwords did not adopt more than one syllable structure from MSA.

Finally, the fourth hypothesis asserts that Kiswahili phonology is significantly affected by loanwords from MSA. This means that the incoming of loanwords from MSA has impacted on the general Kiswahili phonology. The hypothesis is confirmed, too, in Chapter Four. It is observed that Kiswahili loanwords borrowed from MSA have significant effects on Kiswahili phonology. The effects are seen in the introduction of new segments, closed syllables at medial and final positions, new syllable initial consonant clusters, and heavy syllables which are now considered part of Kiswahili phonology.

5.3 Contributions of the Study

In our opinion, this study makes a significant contribution to the study and teaching of Kiswahili phonology in general and, in particular its syllable structure. The study makes a systematic and detailed analysis of Kiswahili syllable structure. It has presented the syllable structure of both Kiswahili words of Bantu origin and loanwords borrowed from MSA. The study has shed light on the internal syllable structure of Kiswahili which to the best of our knowledge, has not been fully handled by previous researchers. For instance, we have learnt of the six syllable structures found in Kiswahili, that is, CV, V, CVC, CCV, CCCV and VC. In this study, we have also learnt of the syllable initial consonant clusters that are permitted in Kiswahili phonology. Moreover, through this study, we have realized that despite the heavy borrowing from MSA, Kiswahili has maintained its syllable structure to a larger extent. Thus, Kiswahili cannot be claimed to be an MSA dialect or a mixture of Bantu languages and MSA.

We have found the Generative CV-Phonology theory to be useful in this study. Using the three tenets and two principles of the theory, in our opinion, we have been able to analyse the syllables of our data to precision. The well formed expression tenet (refer to 1.9.1.1) holds that there are 3 tiers, namely, the segmental tier, CV tier and syllable tier. Using these tiers, we have been able to analyse our Kiswahili and MSA data into various syllables. The syllable tier has displayed the number of syllables in every MSA sourceword and Kiswahili loanword. Thus, we could tell whether the number of syllables has increased or decreased in the borrowing process. The CV tier dissected the constituent parts of each syllable in the MSA sourcewords and Kiswahili loanwords. This

tier has enabled us to display the nucleus of each syllable as well as the onset and coda of every syllable in the data. Through this tier, we have realized that although Kiswahili words of Bantu origin do not have a coda, some of the loanwords in Kiswahili have codas. The CV tier has also enabled us to appreciate that in MSA each word begins with a consonant. This has helped to solve the problem of identifying the MSA glottal stop /ʔ/ and pharyngal fricative /ʕ/ which have often been omitted in previous researches, for example, Bosha (1993) and Mwita (2009). The segmental tier displayed the consonant and vowel sounds that make up the syllables of MSA sourcewords and Kiswahili loanwords. This tier has helped us with phonetic features that were applied in the analysis of phonological processes occurring in borrowing.

The core syllable tenet (refer to 1.9.1.2), holds that every language has its core syllables. This tenet has enabled us map out Kiswahili and MSA core syllables. Moreover, through this tenet we have been able to identify the consonant clusters in Kiswahili and vowel clusters in MSA as per the constraints of the respective languages. We have also learnt of the PSSCs and NSSCs that constrain the segment combinations to be found in Kiswahili initial consonant clusters. These conditions are also applicable to consonant clusters in MSA, though we have not discussed them because our focus has been Kiswahili consonant clusters. The PSSCs and NSSCs applied in this study have enabled us to specify the consonant clusters that are permitted and those which are not permitted in Kiswahili, for instance, /tu-nza/ is permitted, but /ma-ktaba/ is not permitted.

The core syllable association tenet (refer to 1.9.1.3) recognizes the universal and language specific associations between the CV tier and the segmental tier. In all languages, the V elements are linked to [+syllabic] segments; while the C elements are associated to [-syllabic] segments. This tenet has helped us link the [+syllabic] Kiswahili and MSA segments to the V slots; and the [-syllabic] Kiswahili and MSA segments to C slots. We have noticed that in some instances, three nasals are associated to V slots in Kiswahili while no nasal is associated to a V slot in MSA, because nasals are not syllabic in MSA. We have also been able to use the one-to-one association in our data analysis. Other associations are also applicable, but we have opted for the one-to-one association in order to link each segment to the CV tier for purposes of analysis. As such, long vowels are linked to two V slots; similarly, the geminate consonants are linked to two C slots, bearing two timing units. Affricates are associated to a single C slot given that it is a single segment.

The core syllable division principle (refer to 1.9.1.4) outlines how to mark syllable boundaries using the Onset First Principle. This principle has been applied to mark syllable boundaries in all the data used in this study. Guided by the syllable constraints of the specific languages, we have been able to mark the syllable boundaries of MSA sourcewords, Kiswahili words of Bantu origin and loanwords. This tenet has been helpful especially in the marking of seemingly ambisyllabic consonants, for example, the word *sultani* (Sultan) is syllabified as /sul-tani/ and not /su-ltani/.

The syllable transformations principle (refer to 1.9.1.5) deals with the processes involved in the syllables changes in a word. These processes affect all the three tiers with the aim of realizing well formed syllables in the words. The transformations have helped in analyzing the phonological processes that occur as loanwords from MSA are adapted or adopted into Kiswahili. With this principle, have been able to see how syllables are changed from the SW to LW, how the C and V slots are transformed from MSA to Kiswahili, and how segments in MSA are changed in the borrowing processes into Kiswahili. Through this principle, we have been able to explain the motivations and syllable constraints that govern these syllable transformations in Kiswahili loanwords. It has been observed that loanwords in Kiswahili are either adapted or adopted as governed by the phonological constraints pertaining to the preferred syllable structures and permissible syllable initial consonant clusters in the RL. All of these observations have been possible in this study by the use of Generative CV-Phonology theory.

5.4 Recommendations for Further Research

The scope of this study as stipulated in Chapter One was phonological adaptation and adoption of loanwords borrowed from MSA into Kiswahili. This study has focused on the syllable structure of the loanwords, making an analysis of how they are retailored and retained in the RL. We have also anaylsed the phonological processes involved in segments' adaptation and adoption in the loanwords. We have confined ourselves to loanwords borrowed from Modern Standard Arabic (MSA).

We recommend a study to be undertaken on syntactic borrowings in Kiswahili. Our study has been focused on phonological borrowings, but we have realised that there is more to be investigated in Kiswahili syntactic borrowing from MSA, English or any other language that came into contact with Kiswahili. We observe that certain syntactic borrowings from languages such as English are widely used in Kiswahili; for example, in Kiswahili syntax, the word order usually has noun followed by an adjective, as in:

(208)

	Noun	Adjective	Kiswahili Gloss
a.	Mtu	mrefu	tall person
b.	Mtoto	huyu (demonstrative)	this child

However, a new order of words has emerged in Kiswahili, such that the adjective precedes the noun, as in:

(209)

	Adjective	Noun	Kiswahili Gloss
a.	Huyu (demonstrative)	mtu	this person
b.	Hizi (demonstrative)	silabi	these syllables

The question that arises from examples in (209) is, could it be a result of borrowing from English or any other language? Therefore, there is need to research on syntactic borrowings in Kiswahili.

We also recommend for further research to be conducted in loanwords borrowed from other foreign languages such as Persian, Hindi, French, Portuguese and Turkish into Kiswahili. Given that our scope was limited to MSA loanwords, we could not delve into the analysis of the sourcewords' syllable structures from these other foreign languages. In Chapter Four, we had to limit ourselves to the loanwords' syllable structures only in Kiswahili. There is need to find out whether these other foreign languages have impacted Kiswahili with their syllable structures. As at now, we can only claim that they have not because we do not have the syllable structures of their sourcewords.

We also recommend a study to be conducted on loanwords borrowed from Kiswahili to the foreign languages such as Hindi, English and MSA. Given that borrowing takes place when there is contact between languages, is it possible that MSA, English and other languages have also borrowed from Kiswahili? In addition, has Kiswahili made an impact in their phonological systems through the loanwords?

Finally, we recommend a study to be carried out on MSA influence on other Kiswahili dialects such as Mvita and Amu. These dialects are spoken in places where MSA is also prevalent along the East African coast. These dialects have borrowed words from MSA, which need to be investigated as well.

ENDNOTES

[1] We acknowledge that Aswani (1995, 2001) also used this theory in analyzing syllable structure and stress placement in Kiswahili loanwords.

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APPENDIX A

CORPUS A **LIST OF KISWAHILI LOANWORDS**

SECONDARY DATA

	LOANWORD	INFORMANT'S UTTERANCE IN MSA	INFORMANT'S UTTERANCE IN KISWAHILI
1	Hadhi		
2	Ila		
3	Nadra		
4	Haki		
5	Elfu		
6	Fedha		
7	Ardhi		
8	Samli		
9	Hofu		
10	Haba		
11	Ghala		
12	Nukta		
13	Jeshi		
14	Hamsini		
15	Tiba		
16	Ziara		

17	Zaka		
18	Ilani		
19	Maradhi		
20	Daima		
21	Dhaifu		
22	Elimu		
23	Siasa		
24	Dhahabu		
25	Akili		
26	Sheria		
27	Kitabu		
28	Sukari		
29	Mahtuti		
30	Talaka		
31	Dua		
32	Sanifu		
33	Enzi		
34	Shetani		
35	Sifuri		
36	Asante		
37	Birika		
38	Fukara		
39	Fisadi		
40	Hadhara		
41	Harusi		
42	Heshima		
43	Baridi		
44	Hotuba		
44	Sarafu		
46	Taifa		
47	Takwimu		
48	Tarehe		
49	Sabuni		
50	Asmini		
51	Rais		
52	Zinaa		
53	Karatasi		
54	Mahakama		
55	Biashara		
56	Rasilimali		
57	Thelathini		
58	Themanini		
59	Saba		
60	Ijumaa		
61	Abiria		

62	Farakana		
63	Halali		
64	Hayawani		
65	Hitilafu		
66	Taarabu		
67	Tabasamu		
68	Arubaini		
69	Jumla		
70	Roho		
71	makamu		
72	Hasara		
73	Sanaa		
74	Madini		
75	Naibu		
76	Amiri		
77	Kafara		
78	Rutuba		
79	Kasisi		
80	Askofu		
81	Thawabu		
82	Hayati		
83	Bata		
84	Riadha		
85	Maktaba		
86	Aina		
87	Darasa		
88	Dunia		
89	desturi		
90	Dawa		
91	Mkataba		
92	Fasihi		
93	Futari		
94	Hadaa		
95	Hai		
96	Hema		
97	Starehe		
98	dakika		
99	Dalili		
100	Herufi		
101	Fitina		
102	Baleghe		
103	Hisani		
104	Homa		
105	halua		
106	rai		

107	Hesabu		
108	Fahali		
109	Malaika		
110	Makal		
111	Merikebu		
112	Maskani		
113	Mandhari		
114	Mahaba		
115	Mahari		
116	Mali		
117	Marehemu		
118	Mswaki		
119	Mshahara		
120	karafuu		
121	Tumbaku		
122	Mraba		
123	Mzaha		
124	Mshari		
125	Msumari		
126	Mshumaa		
127	muhtasari		
128	Ushuru		
129	Ubeti		
130	Udi		
131	Mswahili		
132	Maiti		
133	Msaada		
134	Anwani		
135	Sultani		
136	Amri		
137	Bei		
138	Naam		
139	Tabu		
140	Zaidi		
141	Ahadi		
142	Baada		
143	Maarifa		
144	Maana		
145	Jozi		
146	Bidhaa		
147	Idi		
148	Muujiza		
149	Halaiki		
150	Ghali		
151	Alhamisi		

152	Shairi		
153	Kahawa		
154	Robo		
155	Saumu		
156	Alasiri		
157	Wadhifa		
158	Hatari		
159	Habari		
160	Uzani		
161	Ruhusa		
162	Soko		
163	Kalamu		
164	Gharama		
165	Alfajiri		
166	Hatia		
167	Safina		
168	Wakati		
169	Baruti		
170	Urithi		
171	Fadhila		
172	Asubuhi		
173	Adhuhuri		
174	Adabu		
175	Adui		
176	Aibu		
177	Ajabu		
178	Bahati		
179	Baraka		
180	Baridi		
181	Binadamu		
182	Bunduki		
183	Busara		
184	Daftari		
185	Daraja		
186	Dhambi		
187	Dhahiri		
188	Dhiki		
189	Dini		
190	Duara		
191	Faragha		
192	Faraja		
193	Fedheha		
194	Furaha		
195	Fursa		
196	Gharika		

197	Hadithi		
198	Haja		
199	Hakika		
200	Hamu		
201	Haramu		
202	Hatima		
203	Hatua		
204	Hekaya		
205	Hekima		
206	Hewa		
207	Hifadhi		
208	Hima		
209	Hirizi		
210	Hisi		
211	Hoja		
212	Huduma		
213	Rehema		
214	Huzuni		
215	Ibada		
216	Ibilisi		
217	Idara		
218	Idhini		
219	Tuhma		
220	Imani		
221	Insha		
222	Ishara		
223	Jehanamu		
224	Jamhuri		
225	Jawabu		
226	Kabila		
227	Karimu		
228	Lugha		
229	Mahali		
230	Mamlaka		
231	Methali		
232	Mashuhuri		
233	Muhula		
234	Mwalimu		
235	Nafsi		
236	Niaba		

APPENDIX B

CORPUS B LIST OF KISWAHILI WORDS OF BANTU ORIGIN

SECONDARY DATA

	ENGLISH GLOSS	INFORMANT'S UTTERANCE IN KISWAHILI
1	Fika	
2	Mbovu	
3	Lenga	
4	Ndugu	
5	Dada	
6	Posho	
7	Mlemavu	
8	Upinzani	
9	Pinga	
10	Mgogoro	
11	Mvua	
12	Mtambo	
13	Mwiko	
14	Mboga	
15	Mbuga	
16	Chanjo	
17	Chanzo	

18	Zaa	
19	Lima	
20	Chapa	
21	Nzito	
22	Funga	
23	Njama	
24	Lea	
25	Nenda	
26	Mwendo	
27	Ukoo	
28	Mbari	
29	Mwizi	
30	Wivu	
31	Chozi	
32	Ndoa	
33	Sema	
34	Kaa	
35	Mguu	
36	Kiganja	
37	Nyumba	
38	Mama	
39	Baba	
40	Kata	
41	Imba	
42	Mtu	
43	Mtoto	
44	Ng’ombe	
45	Kuku	
46	Mkono	
47	Nywele	
48	Pua	
49	Ogopa	
50	Na	
51	Wa	
52	Mlungula	
53	Tatu	
54	Fuata	
55	Ishi	
56	Mtetezi	
57	Mgonjwa	
58	Lia	
59	Njia	
60	Ons	
61	Macho	
62	Giza	

63	Jua	
64	Mdomo	
65	Mlevi	
66	Mbwa	
67	Pata	
68	Jina	
69	Ulimi	
70	Mwisho	
71	Mfupa	
72	Mzigo	
73	Jogoo	
74	Nje	
75	Paka	
76	Panya	
77	Samaki	
78	Panda	
79	Nundu	
80	Vumilia	
81	Joto	
82	Kinga	
83	Mbuzi	
84	Zizi	
85	Mzozo	
86	Kazi	
87	Kuza	
88	Mchango	
89	Mzazi	
90	Nyasi	
91	Fuga	
92	Mnyama	
93	Mlima	
94	Shamba	
95	Chakula	
96	Mbegu	
97	Mnazi	
98	Mzee	
99	Moyo	
100	Mwanya	
101	Lundika	
102	Ungama	
103	Muumba	
104	Umba	
105	Mgongo	
106	Mwezi	
107	Nyoka	

108	Nzima	
109	Kula	
110	Oza	
111	Ngoma	
112	Ya	
113	Pengo	
114	Kikapu	
115	Kung’uta	
116	Kisiki	
117	Kitambo	
118	Kichana	
119	Kitongoji	
120	Wacha	
121	Mashizi	
122	Chakacha	
123	Mbavu	
124	Mbivu	
125	Bunda	
126	Mende	
127	Mjukuu	
128	Dume	
129	Danganya	
130	Mbweha	
131	Jembe	
132	Mlango	
133	Mkokoteni	
134	Gongo	
135	Maharagwe	
136	Jiko	
137	Jivu	
138	Kanga	
139	Kamba	
140	Kavu	

APPENDIC C

CORPUS C **LIST OF KISWAHILI LOANWORDS**

PRIMARY DATA

	ENGLISH GLOSS	INFORMANT'S UTTERANCE IN MSA	INFORMANTS UTTERANCE IN KISWAHILI
1	Dhulumu		
2	Dalali		
3	Malkia		
4	Sehemu		
5	Lakini		
6	Tofauti		
7	Jasusi		
8	Uhalifu		
9	Harakati		
10	Jitahidi		
11	Baadhi		
12	Mjadala		
13	Ukurasa		
14	Wasili		
15	Thabiti		
16	Jamii		
17	Kamusi		
18	Taswira		

19	Taarifa		
20	Almasi		
21	Hali		
22	Maslahi		
23	Salam		
24	Saidia		
25	Shahidi		
26	Rahisi		
27	Haraka		
28	Afya		
29	Nusura		
30	Nishati		
31	Swali		
32	Suala		
33	Shujaa		
34	Tafakari		
35	Matarajio		
36	Shukrani		
37	Awali		
38	Rasmi		
39	Sifa		
40	Fahamisha		
41	Kabla		
42	Wakilisha		
43	Wakili		
44	Imara		
45	Kama		
46	Furahi		
47	Wasia		
48	Raha		
49	Arifu		
50	Uhuru		
51	Madai		
52	Azma		
53	Adhimisha		
54	Marupurupu		
55	Usalama		
56	Taratibu		
57	Juhudi		
58	Fadhili		
59	Wajibu		
60	Stahiki		
61	Stahimili		
62	Neema		
63	Kila		

64	Rubani		
65	Shirika		
66	Safari		
67	Thamani		
68	Shiriki		
69	Muhimu		
70	Maadili		
71	Uaminifu		
72	Hukumu		
73	Hakimu		
74	Askari		
75	Madhara		
76	Maalum		
77	Burudani		
78	tashwishi		
79	Fikira		
80	Karibu		
81	Mola		
82	Imla		
83	Sawa		
84	Safu		
85	Shehe		
86	Salamu		

APPENDIX D

CORPUS D **LIST OF KISWAHILI WORDS OF BANTU ORIGIN**

PRIMARY DATA

	ENGLISH GLOSS	INFORMANT'S UTTERANCE IN KISWAHILI
1	Kitovu	
2	Kiu	
3	Kiuno	
4	Kofi	
5	Kombo	
6	Kondoo	
7	Korongo	
8	kovu	
9	Kungunni	
10	Kupe	
11	Kwaa	
12	Lowa	
13	Macheo	
14	Mafuta	
15	Makombo	
16	Ngwena	
17	Maziwa	
18	Mchanga	

19	Mchele	
20	Aga	
21	Amba	
22	Ambua	
23	Anika	
24	Babu	
25	Bakora	
26	Bao	
27	Beba	
28	Biringanya	
29	Bubu	
30	Chachu	
31	Kichaka	
32	Chatu	
33	Mfuko	
34	Mgeni	
35	Mjomba	
36	Chinja	
37	Choma	
38	Chungwa	
39	Dunga	
40	Figa	
41	Fukia	
42	Fukua	
43	Fyeka	
44	Kigae	
45	Mshipi	
46	Mlezi	
47	Gamba	
48	Ganda	
49	Hoi	
50	Inda	
51	Iva	
52	Juta	
53	Kiatu	
54	Kichaa	
55	Kinu	
56	Mngurumo	
57	Msusi	
58	Mtego	
59	Mti	
60	Mto	
61	Mtungi	
62	Mungu	
63	Muungwana	

64	Mvi	
65	Mwongo	
66	Nazi	
67	ndege	
68	Ndimu	
69	Ndizi	
70	Ndoto	
71	Ndururu	
72	Ngalawa	
73	Ng’ambo	
74	Ngamia	
75	Ngoja	
76	Nguruma	
77	Nyamaza	
78	Nyang’anya	
79	Nyani	
80	Nyuki	
81	Nzi	
82	Oa	
83	Oga	
84	Omba	
85	Ota	
86	Oza	
87	Paa	
88	Pamba	
89	Pekua	
90	Penda	
91	Poa	
92	Pokea	
93	Punda	
94	Pwani	
95	Ramba	
96	Rangi	
97	Rushwa	
98	Saga	
99	Saka	
100	Sanduku	
101	Seng’eng’e	
102	Shangazi	
103	Shimo	
104	Shingo	
105	Shoka	
106	Simama	
107	Sokota	
108	Sonya	

109	Sungura	
110	Taga	
111	Tambaa	
112	Tawanya	
113	Tele	
114	Tembe	
115	Tena	
116	Tetema	
117	Tikisa	
118	Tosha	
119	Tuma	
120	Tumbo	
121	Tunda	
122	Tunza	
123	Ubavu	
124	Uchovu	
125	Uchumba	
126	Ufa	
127	Uhondo	
128	Uji	
129	Ukunga	
130	Ukwato	
131	Umia	
132	Uma	
133	Unga	
134	Nyayo	
135	Woga	
136	Uovu	
137	Usiku	
138	Uta	
139	Utasa	
140	Uti	
141	Utu	
142	Uvuvi	
143	Vaa	
144	Waka	
145	Wanja	
146	Waza	
147	Wifi	
148	Winda	
149	Yaya	
150	Yoyoma	
151	Yumbayumba	
152	Zembea	
153	Zima	

154	Zorota	
155	Zunguka	

APPENDIX E

RESEARCH DATA LIST

CORPUS A - KISWAHILI LOANWORDS

	LOANWORD	PHONETIC TRANSCRIPTION IN KISWAHILI	PHONETIC TRANSCRIPTION IN MSA	ENGLISH GLOSS	MSA GLOSS
1	Hadhi	ha$ði	ħaðˤðˤ	Status/prestige/honor	Luck
2	Ila	i$la	ʔil$laː	Except/But	
3	Nadra	nad$ra	naːdira	Rare/scarce	
4	Haki	ha$ki	ħaqq	Justice/right	
5	Elfu	ɛl$fu	ʔalf	Thousand	
6	Fedha	fɛ$ða	fidˤ$dˤa	Silver	
7	Ardhi	ar$ði	ʔardˤ	Land/soil	
8	Samli	sam$li	samn	Ghee	
9	Hofu	hɔ$fu	xawf	Fear/cowardice	
10	Haba	ha$ba	ħab$ba	Little	
11	Ghala	ɤa$la	ɤal$la	Granary/storeroom	yield
12	Nukta	nuk$ta	nuq$tˤa	A second	
13	Jeshi	ɟɛ$ʃi	dʒajʃ	An army	

14	Hamsini	hamsini	xam$siːn	fifty	
15	Tiba	ti$ba	tˁibb	Treatment/medicine	
16	Ziara	zi$a$ra	zi$jaː$ra	A tour/visit	
17	Zaka	za$ka	za$kaːt	Tithe	
18	Ilani	ilani	ʔiʕ$laːn	Notice/caution	
19	Maradhi	maraði	ma$radˁ	Disease	
20	Daima	da$i$ma	daː$ʔim	Always/forever/continually	
21	Dhaifu	ða$i$fu	dˁa$ʕiːf	Weak/feeble/faint	
22	Elimu	ɛlimu	ʕilm	Education	
23	Siasa	si$a$sa	si$jaː$sa	Politics	
24	Dhahabu	ðahabu	ða$hab	Gold	
25	Akili	akili	ʕaql	Brains/intellect	
26	Sheria	ʃɛria	ʃa$riː$ʕa	Law	
27	Kitabu	kitabu	ki$taːb	Book	
28	Sukari	sukari	suk$kar	Sugar	
29	Mahtuti	mahtuti	max$tˁuːt	Critically/seriously ill	
30	Talaka	talaka	tˁa$laːq	Divorce	
31	Dua	du$a	du$ʕaːʔ	Prayer	
32	Sanifu	sanifu	sˁanf	Standard/skilled	
33	Enzi	ɛn$zi	ʕizz	Dominion/might/power/era	
34	Shetani	ʃɛtani	ʃaj$tˁaːn	Satan	
35	Sifuri	sifuri	sˁifr	Zero/nil	
36	Asante	asantɛ	ʔaħ$sant	Thank you	
37	Birika	birika	ʔib$riːq	Kettle	
38	Fukara	fukara	fa$qiːr	Poor/destitute	
39	Fisadi	fisadi	faː$sid	Corrupt/lewd/reprobate	
40	Hadhara	ha$ða$ra	ħa$dˁa$ra	In public/open	
41	Harusi	harusi	ʕurs	Wedding	
42	heshima	hɛ$ʃi$ma	ħiʃ$ma	Respect/honor/dignity	
43	baridi	baridi	bard	Cold	
44	hotuba	hɔtuba	xutˁ$ba	Speech/address	

44	Sarafu	sarafu	sˁa$raf	Coin	exchange
46	Taifa	ta$i$fa	tˁaː$ʔi$fa	Nation	
47	Takwimu	takwimu	taq$wiːm	Statistics	
48	Tarehe	ta$rɛ$hɛ	taː$riːx	Date	
49	Sabuni	sabuni	sˁaː$buːn	Soap	
50	Asmini	asmini	jas$miːn	Jasmine(flower)	
51	Rais	ra$is	ra$ʔiːs	President	
52	Zinaa	zinaa	zi$naː	Adultery/fornication	
53	Karatasi	karata$si	qar$tˁaːs	Paper	
54	Mahakama	mahaka$ma	maħkama	Law court	
55	Biashara	bi$a$ʃa$ra	ba$jʕ ʃi$raːʔ	Business/trade/commerce	
56	Rasilimali	rasilimali	raʔsulmaːl	Resources/assets/capital	

57	Thelathini	θɛlaθi$ni	θa$laː$θuːn	Thirty	
58	Themanini	θɛmani$ni	θa$maː$nuːn	Eighty	
59	Saba	sa$ba	sab$ʕa	Seven	
60	Ijumaa	i$ɟu$ma$a	dʒum$ʕa	Friday	
61	Abiria	abiri$a	ʕaː$bir	Passenger	
62	Farakana	faraka$na	fur$qaːn	To be parted/estranged	
63	Halali	halali	ħa$laːl	Legal/lawful/valid/legitimate	
64	Hayawani	hajawa$ni	hajawaːn	Brute/beast	
65	Hitilafu	hitila$fu	ʔixtilaːf	Defect/difference/variation	
66	Taarab	ta$a$rab	tˁa$rab	Kind of Swahili music with Arabian/Indian melody	
67	Tabasamu	tabasa$mu	ʔibtisaːm	A smile	
68	Arobaini	a$rɔ$ba$i$ni	ʔarbaʕiːn	Forty	
69	Jumla	ɟum$la	dʒum$la	Total	
70	Roho	rɔ$hɔ	ruːħ	Spirit/soul	
71	Makamu	makamu	ma$qaːm	Vice	
72	Hasara	hasara	xa$saː$ra	Loss/damage/destruction	

73	Sanaa	sanaa	sa$naː	Art	Exaltedness
74	Madini	madini	maʕ$din	Mineral	
75	Naibu	na$i$bu	naː$ʔib	Deputy	
76	Amiri	amiri	ʔa$miːr	Commander	
77	Kafara	kafara	kaf$far	Religious sacrifice/offering	
78	Rutuba	rutuba	rut$ba	Fertility	
79	Kasisi	kasisi	qi$siːs	Priest/padre	
80	Askofu	as$kɔ$fu	ʔas$quf	Bishop	
81	Thawabu	θawabu	θa$waːb	Reward/gift	
82	Hayati	hajati	ħa$jaː	The late	Alive
83	Bata	ba$ta	batˤtˤ	Duck	
84	Riadha	ri$a$ða	ri$jaː$dˤa	Athletics	
85	Maktaba	maktaba	maktaba	Library	
86	Aina	a$i$na	ʕajjina	A kind of something	
87	Darasa	darasa	dars	Class	Lesson
88	Dunia	dunia	dun$jaː	World/earth	
89	Desturi	dɛsturi	dus$tuːr	Tradition/custom	
90	Dawa	da$wa	da$waːʔ	Medicine	
91	Mkataba	mkata$ba	mu$kaː$ta$ba	Agreement/contract	
92	Fasisi	fasihi	fa$sˤiːħ	Literature	
93	Futari	futari	ʔif$tˤaːr	Food used to break a fast	
94	Hadaa	hadaa	xid$daːʕ	To deceive/cheat	
95	Hai	ha$i	hajj	Alive	
96	Hema	hɛ$ma	xaj$ma	Tent	
97	Starehe	sta$rɛ$hɛ	ʔistiraː$ħa	Leisure/luxury/comfort	
98	Dakika	dakika	da$qiː$qa	A minute	
99	Dalili	dalili	da$liːl	A sign/indication	
100	Herufi	hɛrufi	harf	Alphabets	
101	Fitina	fitina	fit$na	Strife/mischief	
102	Baleghe	ba$lɛ$ɣɛ	baː$liɣ	To reach puberty	
103	Hisani	hisani	ʔiħ$saːn	Favour/kindness	
104	Homa	hɔ$ma	ħum$maː	Fever	

105	Halua	halua	ħal$wa	Type of sweet	
106	Rai	ra$i	raʔj	To plead/coax	Opinion
107	Hesabu	hɛsabu	ħi$saːb	To count	
108	Fahali	fahali	faħl	A bull	
109	Malaika	malai$ka	ma$laː$ʔi$ka	An angel	
110	Makala	makala	ma$qaːl	An article	
111	Merikebu	mɛrikɛ$bu	mar$kab	A steamship	
112	Maskani	maskani	mas$kan	A dwelling place/home	
113	Mandhari	man$ða$ri	man$ðar	Scenery/view	
114	Mahaba	mahaba	ma$ħab$ba	Love/romance	
115	Mahari	mahari	maħr	Bride wealth	
116	Mali	ma$li	maːl	Wealth	
117	Marehemu	ma$rɛ$hɛ$mu	mar$huːm	The late	
118	Mswaki	mswaki	si$waːk	Toothbrush	
119	Mshahara	m$ʃa$ha$ra	ʃahrijja	Salary/wage	wage
120	Karafuu	karafu$u	qurunfil	Clove	
121	Tumbaku	tumbaku	tabɤ	Tobacco	
122	Mraba	mraba	murabbaʕ	Square	
123	Mzaha	mzaha	mazħ	Joke/fun	
124	Mshari	m$ʃa$ri	ʃir$riːr	An evil person/wrangler	
125	Msumari	msuma$ri	mis$maːr	Nail	
126	Mshumaa	m$ʃu$ma$a	ʃam$maʕ	Candle	
127	Muhtasari	muhtasa$ri	muxtasar	Summary	
128	Ushuru	u$ʃu$ru	ʕuʃr	Tax	
129	Ubeti	u$bɛ$ti	bajt	Verse	
130	Udi	u$di	ʕuːd	Incense of aloe wood	
131	Mswahili	mswahi$li	saː$ħi$lijj	Swahili person	
132	Maiti	ma$i$ti	maj$jit	Corpse	
133	Msaada	msaa$da	mu$saː$ʕa$da	Help/assistance/aid	
134	Anwani	anwani	ʕun$waːn	An address	
135	Sultani	sultani	sul$tˤaːn	Sultan	
136	Amri	am$ri	ʔamr	A command/order	

137	Bei	bɛ$i	ba$jʃ	Price	
138	Naam	na$am	na$ʕam	Yes/yeah/certainly	
139	Tabu	ta$bu	taʃb	Distress/misery/difficulty	
140	Zaidi	za$i$di	za:$ʔid	More	
141	Ahadi	ahadi	ʕaħd	Promise	
142	Baada	ba$a$da	baʃd	After	
143	Maarifa	ma$a$ri$fa	maʃrifa	Knowledge	
144	Maana	ma$a$na	maʃ$na	Meaning	
145	Jozi	ɟɔ$zi	zawdʒ	Pair	
146	Bidhaa	bi$ða$a	bi$dˁa:$ʕa	Products/goods/commodity	
147	Idi	i$di	ʕi:d	Idd	
148	Muujiza	mu$u$ɟi$za	muʃ$dʒi$za	Miracle	
149	Halaiki	halai$ki	ha$la:$ʔik	A crowd/gathering of people	
150	Ghali	ɤa$li	ɤa:$li:	Expensive	
151	Alhamisi	alhami$si	ʔalxami:s	Thursday	
152	Shairi	ʃa$i$ri	ʃiʕr	Poem	
153	Kahawa	kahawa	qah$wa	coffee	
154	Robo	rɔ$bɔ	rubʃ	Quarter	
155	Saumu	sa$u$mu	sˁawm	The religious fast	
156	Alasiri	alasi$ri	ʔal$ʕasr	Afternoon	
157	Wadhifa	wa$ði$fa	wa$ði:$fa	A post/rank/position	
158	Hatari	hatari	xa$tˁar	Danger	
159	Habari	habari	xa$bar	News	
160	Uzani	uzani	wazn	Weight	
161	Ruhusa	ruhusa	rux$sˁa	Permission	
162	Soko	sɔ$kɔ	su:q	Market	
163	Kalamu	kalamu	qa$lam	A pen	
164	Gharama	ɤarama	ɤa$ra:m	Cost	A fine
165	Alfajiri	alfaɟi$ri	ʔalfadʒir	Dawn/early morning	
166	Hatia	hatia	xa$tˁij$ja	Fault/guilt	
167	Safina	safina	sa$fi:$na	Ark	

168	Wakati	wakati	waqt	Time	
169	Baruti	baruti	bar$ʕiːt	Firework/explosives	
170	Urithi	uriθi	miː$raːθ	Inheritance	
171	Fadila	fa$ði$la	fa$dˤiː$la	Kindness	
172	Asubuhi	asubu$hi	ʔa$sˤubħ	Morning	The morning
173	Adhuhuri	a$ðu$hu$ri	ʔaðˤ$ðˤuhr	Noon	
174	Adabu	adabu	ʔa$dab	Good manners/courtesy/ etiquette	
175	Adui	adui	ʕa$duww	Enemy	
176	Aibu	a$i$bu	ʕajb	Disgrace/shame	
177	Ajabu	a$ɟa$bu	ʕa$dʒab	Wonder/strange	
178	Bahati	bahati	baħt	Luck	
179	Baraka	baraka	baraka	Blessing	
180	Baridi	baridi	baː$rid	Cold	
181	Binadamu	binada$mu	ʔibn ʔaː$dam	Person	
182	Bunduki	bunduki	bunduqij$ja	Gun	
183	Busara	busara	ba$ʃiː$ra	Prudence/good judgement	
184	Daftari	daftari	daf$tar	Exercise book	
185	Daraja	daraɟa	da$radʒ	Bridge	
186	Dhambi	ða$mbi	ðamb	Sin	
187	Dhahiri	ðahiri	dahr	clear	
188	Dhiki	ði$ki	dˤiːq	Distress	
189	Dini	di$ni	diːn	Religion	
190	Duara	du$a$ra	daː$ʔi$ra	Circle	
191	Faragha	faraɣa	farɣ	Privacy/seclusion	
192	Faraja	faraɟa	fa$radʒ	Comfort/consolation/solace	
193	Fedheha	fɛ$ðɛ$ha	fa$dˤiː$ħa	Shame/disgrace/scandal	
194	Furaha	furaha	fa$raħ	Joy/happiness	
195	Fursa	fur$sa	fur$sˤa	Opportunity	
196	Gharika	ɣarika	ɣa$riːq	Flood	
197	Hadithi	hadiθi	ħa$diːθ	Story	
198	Haja	ha$ɟa	ħaː$dʒa	Need/want/requir	

				ement	
199	Hakika	hakika	ħa$qiː$qa	Fact/reality/certainty	
200	Hamu	ha$mu	hamm	A longing for	
201	Haramu	haramu	ħa$raːm	Illegitimate/illicit/forbidden	
202	Hatima	hatima	xaːtima	An end/conclusion	
203	Hatua	hatua	xatˁ$wa	Step	
204	Hekaya	hɛkaja	hi$kaː$ja	A tale/fable/legend	
205	Hekima	hɛkima	ħik$ma	Wisdom	
206	Hewa	hɛ$wa	ha$waːʔ	Air/atmosphere	
207	Hifadhi	hifaði	ħi$faːð	To conserve/protect	
208	Hima	hi$ma	him$ma	Haste/hurry/fast	
209	Hirizi	hirizi	ħirz	Charm/amulet	
210	Hisi	hi$si	ħiss	To feel/perceive	
211	Hoja	hɔ$ɟa	hudʒ$dʒa	A point/argument	
212	Huduma	huduma	xid$ma	Service	
213	Rehema	rɛ$hɛ$ma	raħ$ma	Pity/mercy/sympathy	
214	Huzuni	huzuni	ħuzn	Sad	
215	Ibada	ibada	ʕi$baː$da	Worship/religious service	
216	Ibilisi	ibili$si	ʔib$liːs	Satan/devil	
217	Idara	idara	ʔi$daː$ra	Department	
218	Idhini	i$ði$ni	ʔiðn	Permission	
219	Tuhuma	tuhuma	tuh$ma	Suspicion/accusation	
220	Imani	imani	ʔiː$maːn	Faith	
221	Insha	in$ʃa	ʔin$ʃaːʔ	Composition	
222	Ishara	i$ʃa$ra	ʔi$ʃaː$ra	A symbol	
223	Jehanamu	ɟɛhana$mu	dʒahannam	Hell/underworld	
224	Jamhuri	ɟamhuri	dʒum$huː$rij$ja	Republic	
225	Jawabu	ɟawabu	dʒa$waːb	Answer	
226	Kabila	kabila	qa$biːla	Tribe	
227	Karimu	karimu	ka$riːm	Kind person	
228	Lugha	lu$ɤa	lu$ɤa	Language	

229	Mahali	mahali	ma$ħall	Place	
230	Mamlaka	mamlaka	mamlaka	Authority/mandate	
231	Methali	mɛ$θa$li	ma$θal	Proverb	
232	Mashuhuri	ma$ʃu$hu$ri	maʃ$huːr	Popular/famous	
233	Muhula	muhula	muh$la	Term/semester	Pause
234	Mwalimu	mwalimu	mu$ʔal$lim	Teacher	
235	Nafsi	naf$si	nafs	Self/soul/spirit	
236	niaba	ni$a$ba	ni$jaː$ba	Behalf of	

APPENDIX F

CORPUS B - KISWAHILI NATIVE WORDS

SECONDARY DATA

	KISWAHILI WORD OF BANTU ORIGIN	PHONETIC TRANSCRIPTION IN KISWAHILI	ENGLISH GLOSS
1	Fika	fi$ka	Reach/arrive
2	Mbovu	mbɔ$vu	Bad
3	Lenga	lɛ$ŋga	Aim
4	Ndugu	ndu$gu	Brother
5	Dada	da$da	Sister
6	Posho	pɔ$ʃɔ	Food
7	Mlemavu	m$lɛ$ma$vu	Cripple
8	Upinzani	upinza$ni	Opposition
9	Pinga	pi$ŋga	Oppose
10	Mgogoro	m$gɔ$gɔ$rɔ	Conflict
11	Mvua	mvua	Rain
12	Mtambo	mtambɔ	Motor/machine
13	Mwiko	mwi$kɔ	Taboo
14	Mboga	mbɔ$ga	Vegetable
15	Mbuga	mbu$ga	Animal park
16	Chanjo	tʃa$ɲɟɔ	Immunization
17	Chanzo	tʃa$nzɔ	Source
18	Zaa	za$a	Give birth
19	Lima	li$ma	Dig
20	Chapa	tʃa$pa	To Cane
21	Nzito	nzi$tɔ	Heavy
22	Funga	fu$ŋga	Close
23	Njama	ɲɟa$ma	Conspiracy
24	Lea	lɛ$a	Bring up
25	Nenda	nɛ$nda	Go
26	Mwendo	mwɛ$ndɔ	Speed

27	Ukoo	u$kɔ$ɔ	Clan
28	Mbari	mba$ri	Tribe
29	Mwizi	mwi$zi	Thief
40	Wivu	wi$vu	Jealousy
41	Chozi	tʃɔ$zi	Tear
42	Ndoa	ndɔ$a	Marriage
43	Sema	sɛ$ma	Say
44	Kaa	ka$a	Sit
45	Mguu	mguu	Leg
46	Kiganja	kigaɲɟa	Palm of hand
47	Nyumba	ɲu$mba	House
48	Mama	ma$ma	Mother
49	Baba	ba$ba	Father
50	Kata	ka$ta	Cut
51	Imba	i$mba	Sing
52	Mtu	m$tu	Person
53	Motto	m$tɔ$tɔ	Child
54	Ng’ombe	ŋɔ$mbɛ	Cow
55	Kuku	ku$ku	Hen
56	Mkono	m$kɔ$nɔ	Hand
57	Nywele	ɲwɛ$lɛ	Hair
58	Pua	pu$a	Nose
59	Ogopa	ɔ$gɔ$pa	Fear
60	Na	na	And
61	Wa	wa	Of
62	Mlungula	mluŋgu$la	Bribe
63	Tatu	ta$tu	Three
64	Fuata	fu$a$ta	Follow
65	Ishi	i$ʃi	Live
66	Mtetezi	m$tɛ$tɛ$zi	Advocate/defender
67	Mgonjwa	m$gɔ$ɲɟwa	Patient(that is, sick)
68	Lia	li$a	Cry
69	Njia	ɲɟi$a	Way
70	Ona	ɔ$na	See

71	Macho	ma$tʃɔ	Eyes
72	Giza	gi$za	Darkness
73	Jua	ɟu$a	Know
74	Mdomo	m$dɔ$mɔ	Mouth/lips
75	Mlevi	m$lɛ$vi	Drunkard
76	Mbwa	m$bwa	Dog
77	Pata	pa$ta	Get
78	Jina	ɟi$na	Name
79	Ulimi	ulimi	Tongue
80	Mwisho	mwi$ʃɔ	End
81	Mfupa	mfupa	Bone
82	Mzigo	mzigɔ	Luggage
83	Jogoo	ɟɔ$gɔ$ɔ	A Cock
84	Nje	ɲ$ɟɛ	Outside
85	Paka	pa$ka	Cat
86	Panya	pa$ɲa	Rat
87	Samaki	samaki	Fish
88	Panda	pa$nda	Climb
89	Nundu	nu$ndu	Hump
90	Vumilia	vumili$a	To bear with
91	Joto	ɟɔ$tɔ	Heat
92	Kinga	ki$ŋga	Protect
93	Mbuzi	mbu$zi	Goat
94	Zizi	zi$zi	Shed
95	Mzozo	m$zɔ$zɔ	Conflict
96	Kazi	ka$zi	Work
97	Kuza	ku$za	Grow
98	Mchango	m$tʃa$ŋgɔ	Contribution
99	Mzazi	mzazi	Parent
100	Nyasi	ɲa$si	Grass
101	fuga	fu$ga	Rear
102	Mnyama	m$ɲa$ma	Animal
103	Mlima	mlima	Hill/mountain
104	Shamba	ʃa$mba	Farm

105	Chakula	tʃakula	Food
106	Mbegu	mbɛ$gu	Seed
107	Mnazi	mnazi	Palm tree
108	Mzee	m$zɛ$ɛ	Old
109	Moyo	mɔ$jɔ	Heart
110	Mwanya	mwa$ɲa	Gap
111	Lundika	lundika	Pile
112	Ungama	u$ŋga$ma	Confess
113	Muumba	mu$u$mba	Creator
114	Umba	u$mba	Create
115	Mgongo	m$gɔ$ŋgɔ	Back
116	Mwezi	mwɛ$zi	Month
117	Nyoka	ɲɔ$ka	Snake
118	Nzima	nzi$ma	Whole
119	Kula	ku$la	Eat
120	Vunda	vu$nda	Rot
121	Ngoma	ŋgɔ$ma	Drum
122	Ya	ja	Of /belonging to
123	Pengo	pɛ$ŋgɔ	Gap
124	Kikapu	kikapu	Basket
125	Kung’uta	ku$ŋu$ta	Shake
126	Kisiki	kisiki	Stump
127	Kitambo	kitambɔ	Long time
128	Kichana	ki$tʃa$na	Comb
129	Kitongoji	ki$tɔ$ŋgɔ$ɟi	Village
130	Wacha	wa$tʃa	Leave
131	Mashizi	ma$ʃi$zi	Soot
132	Chakacha	tʃakatʃa	Chakacha (A type of dance)
133	Mbavu	mba$vu	Ribs
134	Mbivu	mbi$vu	Ripe
135	Bunda	bu$nda	A bundle
136	Mende	mɛ$ndɛ	Cockroach
137	Mjukuu	m$ɟu$ku$u	Grandchild
138	Dume	du$mɛ	Male

139	Danganya	da$ŋga$ɲa	Lie
140	Mbweha	mbwɛ$ha	Fox/jackal
141	Jembe	ɟɛ$mbɛ	Jembe
142	Mlango	mlaŋgɔ	Door
143	Mkokoteni	m$kɔ$kɔ$tɛ$ni	Handcart
144	Gongo	gɔ$ŋgɔ	Log
145	Maharagwe	mahara$gwɛ	Beans
146	Jiko	ɟi$kɔ	Kitchen
147	Jivu	ɟi$vu	Ash
148	Kanga	ka$a$ŋga	Fry
149	Kamba	ka$mba	Rope
150	Kavu	ka$vu	Dry

APPENDIX G

CORPUS C – KISWAHILI LOANWORDS

PRIMARY DATA

	LOANWORD	PHONETIC TRANSCRIPTION IN KISWAHILI	PHONETIC TRANSCRIPTION IN ARABIC	ENGLISH GLOSS	MSA GLOSS
1	Dhulumu	ðulumu	ðulm	Oppress	
2	Dalali	dalali	dal$laːl	Auctioneer	
3	Malkia	malkia	malika	Queen	
4	Sehemu	sɛ$hɛ$mu	sˁahm	Part	
5	Lakini	lakini	laː$kin	But	
6	Tofauti	tɔfau$ti	ta$faː$wut	Different	
7	Jasusi	ɟasusi	dʒaː$suːs	Detective	
8	Uhalifu	uhali$fu	xaː$laf	Crime	
9	Harakati	haraka$ti	ħarakaːt	Efforts	
10	Jitahidi	ɟitahi$di	ʔidʒtahad	To put effort	
11	Baadhi	ba$a$ði	baʕð	Some	
12	Mjadala	m$ɟa$da$la	mu$dʒaː$da$la	Discussion	
13	Ukurasa	ukura$sa	kur$raː$sa	Page	
14	Wasili	wasili	wa$sˁal	Arrive	
15	Thabiti	θabiti	θaː$bit	Strong	
16	Jamii	ɟamii	dʒa$miːʕ	Family	
17	Kamusi	kamusi	qaː$muːs	Dictionary	
18	Taswira	taswira	tas$wiːr	Picture/imagery	
19	Taarifa	ta$a$ri$fa	taʕrifa	Statement	
20	Almasi	almasi	ʔal$maːs	Diamond	
21	Hali	ha$li	ħaːl	State/condition	
22	Maslahi	maslahi	masˁ$laħ	Benefits	
23	Salama	salama	sa$laː$ma	Safe	
24	Saidia	sa$i$di$a	sa$ʕad	To help	
25	Shahidi	ʃahidi	ʃaː$hid	Witness	
26	Rahisi	rahisi	ra$xiːsˁ	Easy	
27	Haraka	haraka	ħaraka	Fast/quickly	Movement

28	Afya	a$fja	ʕaːfija	Health	
29	Nusura	nusura	nusˤ$ra	Save	
30	Nishati	ni$ʃa$ti	na$ʃaːtˤ	Energy	
31	Swali	swa$li	su$ʔaːl	Question	
32	Suala	su$a$la	mas$ʔa$la	Issue	
33	Shujaa	ʃu$ɟa$a	ʃu$dʒaːʕ	Hero	
34	Tafakari	tafaka$ri	tafakkar	Meditate	
35	Matarajio	matara$ɟi$ɔ	ta$radʒ$dʒiː	Expectations	
36	Shukrani	ʃukrani	ʃuk$ran	Thanks	
37	Awali	awali	ʔaw$wal	Earlier	
38	Rasmi	ras$mi	ras$mijj	Official	
39	Sifa	si$fa	sˤi$fa	Praise	
40	Fahamisha	fahami$ʃa	ʔaf$ham	inform	
41	Kabla	kab$la	qab$la	Before	
42	Wakilisha	wakili$ʃa	wak$kil	Represent	
43	Wakili	wakili	wa$kiːl	Lawyer	
44	Imara	imara	ʔi$maː$ra	Strong	emirate
45	Kama	ka$ma	ka$maː	As/like	
46	Furahi	furahi	fa$raħ	Be happy	
47	Wasia	wasia	wa$sˤij$ja	Advise	
48	Raha	ra$ha	raː$ħa	Pleasure	
49	Arifu	arifu	ʕar$rif	Inform	
50	Uhuru	uhuru	hurijja	Freedom	
51	Madai	madai	maddaʕiː	Claims	
52	Azma	az$ma	ʕaz$ma	Intention	
53	Adhimisha	a$ði$mi$ʃa	ʕa$ðˤiːm	Commemorate	
54	Marupumarupu	marupurupu	rubʕ$rubʕ	Allowances	
55	Usalama	usala$ma	sa$laː$ma	Safety	
56	Taratibu	tarati$bu	tar$tiːb	Slowly	Arrangement
57	Juhudi	ɟuhudi	dʒuhd	Efforts	
58	Fadhili	fa$ði$li	fadˤl	Sponsor	virtue
59	Wajibu	wa$ɟi$bu	waː$dʒib	Duty	
60	Stahiki	stahiki	ʔistaħaqq	Deserve	
61	Stahimili	stahimi$li	ʔis$taħ$mal	To bear with	

62	Neema	nɛ$ɛ$ma	niʕ$ma	Grace	
63	Kila	ki$la	kull	Each	
64	Rubani	rubani	rub$baːn	Pilot	
65	Shirika	ʃirika	ʃarika	Corporation	
66	Safari	safari	sa$far	Journey	
67	Thamani	θamani	θa$man	Value	
68	Shiriki	ʃiriki	ʃaː$rik	Participate	
69	Muhimu	muhimu	mu$himm	Important	
70	Maadili	ma$a$di$li	ʕaː$dil	Virtues	Virtous person
71	Uaminifu	u$a$minifu	ʔa$miːn	Faithfulness	
72	Hukumu	hukumu	hukm	Sentence	
73	Hakimu	hakimu	ħaː$kim	Magistrate	
74	Askari	askari	ʕas$kar	Police	
75	Madhara	ma$ða$ra	ma$dˤarr	Bad effects	
76	Maalum	ma$a$lum	maʕ$luːm	Special	
77	Burudani	buruda$ni	bar$daːn	Entertainment	inactive
78	Tashwishi	ta$ʃwi$ʃi	taʃ$wiːʃ	Doubt	
79	Fikira	fikira	fik$ra	Thoughts	
80	Karibu	karibu	qa$riːb	Welcome/ near	
81	Mola	mɔ$la	maw$laː	God	
82	Imla	im$la	ʔim$laːʔ	Dictation	
83	Sawa	sa$wa	sa$waːʔ	Okay	
84	Safu	sa$fu	sˤaff	Column	
85	Shehe	ʃɛ$hɛ	ʃajx	Sheikh	
86	Salamu	salamu	sa$laːm	Greetings	

APPENDIX H

***CORPUS D* – KISWAHILI NATIVE WORDS**

PRIMARY DATA

	KISWAHILI WORDS OF BANTU ORIGIN	PHONETIC TRANSCRIPTION IN KISWAHILI	ENGLISH GLOSS
1	Kitovu	ki$tɔ$vu	Navel/umbilical cord
2	Kiu	ki$u	Thirst
3	Kiuno	ki$u$nɔ	Waist/loin
4	Kofi	kɔ$fi	Slap
5	Kombo	kɔ$mbɔ	Crooked/out of line
6	Kondoo	kɔ$ndɔ$ɔ	Sheep
7	Korongo	kɔ$rɔ$ŋgɔ	A crane (bird)
8	Kovu	kɔ$vu	Scar
9	Kunguru	ku$ŋgu$ru	Bedbug
10	Kupe	ku$pɛ	Tick
11	Kwaa	kwa$a	To stumble
12	Lowa	lɔ$wa	To be soaked/drenched
13	Macheo	ma$tʃɛ$ɔ	Dawn/sunrise
14	Mafuta	mafuta	Oil/fuel
15	Makombo	ma$kɔ$mbɔ	Leftovers/crumbs
16	Ngwena	ŋgwɛ$na	Crocodile
17	Maziwa	maziwa	Milk
18	Mchanga	m$tʃa$ŋga	Sand
19	Mchele	m$tʃɛ$lɛ	Rice
20	Aga	a$ga	To say goodbye
21	Amba	a$mba	To say/talk
22	Ambua	ambua	To peel off
23	Anika	anika	To hang to dry
24	Babu	ba$bu	Grandfather
25	Bakora	ba$kɔ$ra	Walking stick
26	bao	ba$ɔ	Timber
27	Beba	bɛ$ba	Carry

28	Biringanya	biriŋga$ʃna	Brinjals
29	Bubu	bu$bu	Dumb/mute person
30	Chachu	tʃa$tʃu	Sour/yeast/leaven
31	Kichaka	ki$tʃa$ka	Thicket
32	Chatu	tʃa$tu	Python
33	Mfuko	mfukɔ	Pocket
34	Mgeni	m$gɛ$ni	Visitor/guest
35	Mjomba	m$ɟɔ$mba	Uncle (mother's brother)
36	Chinja	tʃi$ɲɟa	To slaughter
37	Choma	tʃɔ$ma	To burn
38	Chungwa	tʃu$ŋgwa	An orange
39	Dunga	du$ŋga	Pierce/inject
40	Figa	fi$ga	Cooking stone
41	Fukia	fukia	To cover/bury/fill up a hole with soil
42	Fukuza	fukuza	To chase away
43	Fyeka	fjɛ$ka	To slash
44	Kigae	kigaɛ	A small broken piece of pot
45	Mkanda	mkanda	A belt
46	Mlezi	m$lɛ$zi	Guardian/custodian
47	Gamba	ga$mba	Scale/bark/hard cover of animals, plants etc
48	Ganda	ga$nda	Skin/bark/husk/shell
49	Hoi	hɔ$i	Exhausted/helpless
50	Inda	i$nda	Jealousy/meanness
51	Iva	i$va	To ripen
52	Juta	ɟu$ta	To regret
53	Kiatu	ki$a$tu	Shoe
54	Kichaa	ki$tʃa$a	Madness/lunacy
55	Kinu	ki$nu	Mortar
56	Mngurumo	m$ŋgu$ru$mɔ	Thunder/roar/rumbling noise
57	Msusi	msusi	Hairdresser/plaiter
58	Mtego	m$tɛ$gɔ	Trap
59	Mti	m$ti	Tree
60	Mto	m$tɔ	River

61	Mtungi	mtuŋgi	Clay water pot/jerricane
62	Mungu	mu$ŋgu	God
63	Muungwana	mu$u$ŋgwa$na	Civilized/gentleman
64	Mvi	m$vi	White hair
65	Mwongo	mwɔ$ŋgɔ	Liar
66	Nazi	na$zi	Coconut
67	Ndege	ndɛ$gɛ	A bird
68	Ndimu	ndi$mu	Lemon
69	Ndizi	ndi$zi	Banana
70	Ndoto	ndɔ$tɔ	Dream
71	Ndururu	ndururu	5 cents
72	Ngalawa	ŋgalawa	Canoe
73	Ng'ambo	ŋa$mbɔ	Abroad/other side of road or river
74	Ngamia	ŋgamia	Camel
75	Ngoja	ŋgɔ$ɟa	To wait
76	Nguruma	ŋguruma	Growl/rumble/roar
77	Nyamaza	ɲamaza	To keep quiet
78	Nyang'anya	ɲa$ŋa$ɲa	To take by force/snatch/rob
79	Nyani	ɲa$ni	Baboon
80	Nyuki	ɲu$ki	Bee
81	Nzi	n$zi	Housefly
82	Oa	ɔ$a	To marry
83	Oga	ɔ$ga	To bathe
84	Omba	ɔ$mba	To pray
85	Ota	ɔ$ta	To dream
86	Oza	ɔ$za	To rot
87	Paa	pa$a	To ascend/rise
88	Pamba	pa$mba	To decorate/adorn
89	Pekua	pɛkua	To search/browse/scratch up
90	Penda	pɛ$nda	To love/like
91	Poa	pɔ$a	To cool
92	Pokea	pɔ$kɛ$a	To receive
93	Punda	pu$nda	Donkey
94	Pwani	pwa$ni	Coast/shore

95	Ramba	ra$mba	Lick
96	Rangi	ra$ŋgi	Colour
97	Rushwa	ru$ʃwa	Bribe/kickback/corruption
98	Saga	sa$ga	Crush/grind/mince
99	Saka	sa$ka	To hunt down
100	Sanduku	sanduku	Box/suitcase/case
101	Seng'enge	sɛ$ŋɛ$ŋgɛ	Barbed/fencing wire
102	Shangazi	ʃa$ŋga$zi	Paternal aunt
103	Shimo	ʃi$mɔ	Hole/pit
104	Shingo	ʃi$ŋgɔ	Neck
105	Shoka	ʃɔ$ka	Axe
106	Simama	simama	Stand
107	Sokota	sɔ$kɔ$ta	To twist/twine/roll
108	Sonya	sɔ$ɲa	To click in contempt
109	Sungura	su$ŋgu$ra	Rabbit
110	Taga	ta$ga	To lay egg
111	Tambaa	tambaa	Crawl/creep
112	Tawanya	tawaɲa	To spread/disperse
113	Tele	tɛ$lɛ	Plenty/full
114	Tembe	tɛ$mbɛ	Tablet/pill
115	Tena	tɛ$na	Again
116	Tetema	tɛ$tɛ$ma	To tremble/shake
117	Tikisa	tikisa	To shake something
118	Tosha	tɔ$ʃa	To be enough/sufficient
119	Tuma	tu$ma	To send
120	Tumbo	tu$mbɔ	Stomach
121	Tunda	tu$nda	A fruit
122	Tunza	tu$nza	To take care of/maintain
123	Ubavu	ubavu	Rib
124	Uchovu	u$tʃɔ$vu	Tiredness/fatigue
125	Uchumba	u$tʃu$mba	Courtship
126	Ufa	u$fa	Crack/cleft
127	Uhondo	u$hɔ$ndɔ	Generous entertainment
128	Uji	u$ɟi	Porridge

129	Ukunga	ukuŋga	Midwifery
130	Ukwato	ukwatɔ	Hoof
131	Umia	umia	To be hurt/injured
132	Uma	u$ma	To bite
133	Unga	u$ŋga	Flour
134	Nyayo	ɲa$jɔ	Footprints/sole/footsteps
135	Woga	wɔ$ga	Fear/timidity/cowardice
136	Uovu	u$ɔ$vu	Wickedness/evil
137	Usiku	usiku	Night
138	Uta	u$ta	Bow of arrows
139	Utasa	utasa	Barreness/sterility
140	Uti	u$ti	Backbone/spine
141	Utu	u$tu	Human nature/humanity
142	Uvuvi	uvuvi	Fishing
143	Vaa	va$a	To dress/wear/put on
144	Waka	wa$ka	To light up
145	Wanja	wa$ɲɟa	Kohl/eye liner
146	Waza	wa$za	To think
147	Wifi	wi$fi	Sister in law
148	Winda	wi$nda	To hunt
149	Yaya	ja$ja	A babysitter/ayah/child's nurse
150	Yoyoma	jɔ$jɔ$ma	To disappear/go away
151	Yumbayumba	jumbaju$mba	To wobble/sway/stagger
152	Zembea	zɛ$mbɛ$a	To neglect
153	Zima	zi$ma	To put out/extinguish
154	Zorota	zɔ$rɔ$ta	To lag/dally
155	Zunguka	zu$ŋgu$ka	Go round/revolve