SOUND CHANGE AND THE RECONSTRUCTION OF KIKAMBA CONSONANTAL SOUNDS IN NATURAL GENERATIVE PHONOLOGY FRAME-WORK

By

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This dissertation is my original work and has not been presented for a degree in any other University.

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This dissertation has been submitted for examination with our approval as University Supervisors.

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ABSTRACT

This study shows the main consonantal sound changes in Kakamba and for each such change reconstructs a proto-sound. Synchronic phonological forms are used to determine what these reconstructed proto-forms are suspected to have been. The reconstruction is based on a comparison of the four major dialects of this language, hence their different sound developments are established.

The opening chapter contains a short general introduction to the language. Next is the literature review, hypotheses, and methodology.

Chapter two discusses the deletion and the subsequent loss of /l/ and /ɣ/. It is attempted, as far as possible to discuss and show the effects such losses had in the grammar of speakers of Kikamba.

Chapter three examines other possible sound changes in the language. All through, dialects sound correspondences are used as the basis for comparative method. Theoretical issues are discussed as we come across relevant data at any stage of our analysis. The 1968 Chomsky and Halle's, "Sound Pattern of English" as a TGG analysis of phonology has been challenged by other linguists. Many linguists have felt that the principles postulated in this theory produce too abtract and unnatural discriptions of human languages.

This work is yet another such attempt to show that TGG lacks adequate and correct descriptive power and that as

a result its analysis makes false claims about language situations. For instance, in many cases, the model's too powerful devices posit reconstructed forms as synchronic underlying forms.

The final chapter consists of a summary of the findings in the earlier chapters, the elaboration of theoretical issues raised during our data analysis and finally the statement of what we consider the practical contribution of our study to contemporary problems. We make suggestions of what areas we think merit further research.

CONTENTS

CHAPTER III

A Phonetic summary of Kikamba Consonantal Sound

IPA Symbols and brief Phonetic descriptions		Orthographical Symbols
β	Voiced labio-dental fricative	v
θ	Voiceless dental fricative	th
s	Voiceless alveolar fricative	s
t	Voiceless alveolar laucinal stop	t
s^y	Voiceless post-alveolar fricative	sy
ts	Voiceless alveolar affricate	ts ch
tʃ	Voiceless palato alveolar affricate sometimes realized as palatal affricate K^y	ky
k	Voiceless velar stop	k
ɣ	Voiced velar fricative (found only in Kitui north	g
^m_b	Voiced bilabial pre-nasalised stop	mb
nβ	Voiced pre-nasalised dental fricative (used only in Machakos)	nth
n_z	Voiced pre-nasalised alveolar fricative (in Kitui it represents nʒ and nz)	nz
n_d	Voiced prenalised alveolar stop	nd
	Voiced prenalised velar stop	ng
ɲʒ	Voiced pre-nasalised palato-velar affricate.	ngy
m	Voiced bilabial nasal	m
n	Voiced alveolar nasal	n
ɲ	Voiced pre-palatal nasal (found only in Kitui)	ny
n̪	Voiced inter-dental nasal	ny
ŋ	Voiced velar nasal	ng'
l	Voiced alveolar lateral approximant	l

j	Voiced pre-palatal approximant (NB. The articulation is complex, with the tongue being placed behind the upper, and the underpart of the blade articulating against the upper teeth themselves. There is open approximation at the front front and closure at the sides; the middle of the tongue is raised to approximate to the prepalate).	y
w	Voiced bilabial - velar approximant	w
-w^l	Voiced labialised velar stop (Used only in Kitui with variations between the stop and the labial-palatal approximant).	g^w
ʔ [ɣ] w	Voiced labial-palatal	w^l

*Slightly adopted from Ford (1975).

CHAPTER I

1.00: INTRODUCTION

1.1.0. The nature of the study

In this chapter, we outline the layout of the study. We will, apart from stating our area of study, show how we intend to approach the study. This will include the problem, the objectives of the study, literature review, theoretical framework and methodology.

1.1.1. The Problem

In this study, we attempt a historical reconstruction of proto-Kikamba consonants. These consonants will be the ones to have been lost or undergone changes. We will during the process of reconstruction, try to relate the synchronic dialectal variations to the reconstructed proto-sound.

Since scholars have used terms like /proto-/ or /pre-/ sounds to refer to reconstructed forms of earlier forms of a language, we have to define and specify the term we use in this study. For the purpose of our study, the reconstructed sound will be refered to as Proto-sound. By Proto-sound we mean, the reconstructed sound which is a theoretical construct devised to account for the observed sound correspondences. It is not therefore to be taken as a real phonetic description uttered by proto-speakers but just as an abstraction devised on the basis of comparing dialectal variations of what is suspected to have been one sound at one stage of the language.

From these reconstructed sounds we hope and intend to show the processes and the directions of the observed sound changes.

Scholars who have hitherto attempted a linguistic study of Kikamba, have mainly dwelt on the area of general grammar. These include such general morphological study of the traditional eight parts of speech, and sometimes they have studied the word sequence in a sentence. Others have attempted other areas, for example Ford (1975) wrote on Tone but from a synchronic vantage point. Hinnebusch (1974) wrote on Kikamba rule inversion, but our study has revealed a lot of faults in this study, from the data itself to the analysis. Chapter three discusses this in detail.

In the absence of a comprehensive historical study of sound change in Kikamba and of how such changes affected each dialect, many problems face those who try to produce written materials to be used by all Kikamba speaking communities. The standard Kikamba, which is used for all official businesses, is just one of the dialects of the language. Therefore any use of this dialect outside the area where it is spoken is bound to cause problems of effective communication and in case of literacy teaching, it retards the progress of the learners. It is our conviction that a study that establishes proper dialectal sound variation, or correspondences, will be of some help. What we are trying to say is that, a study which would show which sound variation corresponds to which in each dialect and then offer explanations as to why this is the case, will have gone

great distances towards easing, if not solving completely the problems encountered presently. To give just an example of the problem we have in mind, we take the TKK series of Kikamba. These books are used for teaching reading and writing of Kikamba in the first three years of primary school education. The books are written in "standard Kikamba" which we have already referred to as one of the dialects of Kikamba. Language teachers normally insist on learners pronouncing sounds and words as written. But often readers pronounce sounds as they are in their internalised grammars in complete disregard of what is written. An example is a pupil who speaks the Kilungu dialect of Kikamba being asked to pronounce [sʸana] "children. This pupil will definitely pronounce this word as [tʃana] because the sound [sʸ-] is not found in his grammar.

The language teacher is bound to spend a lot of his time and that of the pupil trying to get the child pronounce [sʸ-]. This will cause unnecessary frustration to the child which could have been avoided if the teacher had known that [tʃ-] is just a variant of [sʸ-] and it is the one found in this child's grammar; that this child has this variant, is a fact of historical sound change. Perhaps the best thing the teacher could do is to point out to the pupil the existence of the two variants and where each is used.

Therefore, this study was undertaken with an aim of bringing to the surface such hidden linguistic complexities of the language. We hope, the study will bring out the following;

points for the benefits of speakers and the learners of the language:

1) the "standard Kikamba" is one of the dialects of Kikamba and that it is in no way superior to the others. In fact it is the one which has undergone most sound changes.

2) Different sound variations in dialects is a function of history and that such sound variations were possibly or constituted a single sound at one time in history of the language and in general,

3) the scholars of linguistics, will clearly see that retention of proto-sounds does not signify place of origin. That is, the place with a dialect or language with the highest proto-sound retentions, should not as a rule, be pointed or referred to as the place of origin of the speakers of the language in question.

1.1.2. The Language and the People

The language whose sound changes we shall be studying is known as Kikamba. The native speakers of this language call themselves Akamba. One is called Mukamba. The Akamba originally inhabited two districts in the Eastern Province of Kenya. These are Kitui and Machakos. The two districts form what is known as Ukamba - the home of the Akamba. There are other communities of Kikamba speakers in other parts of Kenya but sizeable communities are found mainly in Mwea division of Embu district, Shimba hills in Kwale district and small pockets in Taita and Mombasa districts. Those who live among the

Mijikenda peoples of the coast of Kenya, are developing a new Kikamba dialect under the influence of the mijikenda languages.

The Akamba are said to have come into Kenya from Tanganyika, just north of Tanga. They moved northwards through Taita hills and into the present Machakos district. They then settled on Mbooni hills in the eastern division of Machakos district. It is from here they dispersed slowly first to Kitui. Those who moved to Kitui are said to have been the cattle ranchers.

According to the 1969 Kenya national census, the Akamba were rated the fourth largest ethnic group in Kenya. They were said to number one and a quarter million. Last year's census put the figures as just over one million living in Machakos district and about half a million in Kitui. Since there are other Akamba communities living outside their original home, we estimate the whole native Kikamba speaking community to number about two million people.

Majority of the literature written on Kikamba bears the word - Kamba, for both the people and the language. We want to point out that - Kamba - is a word stem. It has no other semantic value except that of being a stem-morpheme. If it has to be considered as a lexical item in the language, then it must make sense by having a reference in the known world. To do that it needs to have prefix morphemes affixed to it. Depending on which prefix morpheme attached, it will have a fixed semantic value.

We also feel that, should any [illegible]

- Kamba -, then it will be necessary to show the different morphological forms and then state the one he chooses to use. It will be necessary to give reasons for choosing his preferred form. This will prove helpful for those who do not know the morphology of the language.

Kikamba has four major dialects, two in each district. There are, however, minor variations within each dialect which are more pronounced in the two dialects of Kitui. But for the purpose of our study we choose to overlook such minor variations. We shall use the four distinct dialects which are Kikilungu - a dialect spoken in the western division of Machakos - in the locations of Kilungu and Mukaa; the so called "standard" Kikamba - the written dialect and the one spoken with slight variations in the rest of Machakos district, and the Kitui north dialect, spoken in the northern division of Kitui district. A note should be made here about the inhabitants of this division. Although the majority of the inhabitants here are Akamba there is a whole location occupied by Kitharaka speaking Ameru. So any research carried around here must take this fact into account. The informants must be asked whether they are Akamba by origin or Ameru. The fourth dialect is the one spoken in Kitui Central. This dialect has very great sound variations to the point of tempting a researcher to split it into two. In the Eastern and southern parts of the district such sound variations are quite extensive and differ quite a bit with those of Kitui Central. It should be noted however that the sound variations encountered in the southern and Eastern parts are closer to the sound variations of Kitui Central than they are to other dialects.

They are also not so diverse as to qualify to be called a dialect. We therefore decided to group the speech variations found in these areas along with the Kitui Central to form - the Kitui central dialect.

Of all the four dialects of Kikamba, the one spoken in Kitui north is the most conservative according to our findings. It has retained most of the proto-Kikamba sounds. For instance, it has retained /ts-/ and /ɣ/ which are completely lacking in the other dialects. This dialect is spoken in a rather isolated area, in the sense that its interaction with central areas like Machakos and Kitui Central is minimal. It lies on the boundary between the Kimeru and the Kikamba speaking communities. Movements of the Kikamba speaking people are normally out of that place rather than into it. This is because there are no urban areas situated in the area neither are there any road communications through it into Meru district. Therefore interactions between the speakers of this dialect with those of other dialects is normally away from the home area, and hence there is little or no interference from local speech habits. This strengthens the dialect geography principle of marginal or lateral areas being more conservative.

1.2. The Objectives of the Study

One of the objectives of this study, is to examine synchronically through dialect comparisons, the consonants of Kikamba, then establish dialectal sound correspondences for each dialect and their correspondences in the other dialects.

On the basis of this, through comparative method, propose the possible common original sound for similar or set of variation correspondences established. This common original sound will be termed - the proto-sound. We shall then attempt to show which dialect retained the proto-sound and which dialect or dialects underwent sound changes. Then try to explain what may have motivated the sound changes discovered.

Our second objective is to see which theory offers the best explanatory or adequate solutions to any problem we come across. This means we shall have more than one model to work with or to refer to. The models will be stated more clearly under theoretical framework (1.4). Also the method we shall use in doing this will be specified later in the chapter (1.3).

We also aim at making available our findings to those engaged in other areas of language teaching and language learning. We can group them into two groups. Those who teach vernacular literacy in the first three years of the primary education and those engaged in the newly (government) established adult literacy. The first group has been experiencing a lot of problems in teaching reading to children from areas where the written dialect is not spoken. We expect more problems with the adults who are not as quick as the young learners in imitating new sounds. It is our hope therefore, that our research findings will prove of some help to those faced with such problems. The problems likely to come up is that of the divergence between symbols in written literary material and that of the actual learner's grammar, but the difference is systematic in that there are

systematic correspondences, of sound variants. Example /ts-/ of Kitui north dialect correspond to /s-/ of the other dialects, /tʃ-/ of Kilungu correspond to /sʲ-/ of other dialects as a plural morpheme. These differences can be explained diachronically. That is, what were the possible causes, what sound changed to which and how. The knowledge of the fact that sounds change and the dialectal variations in the language are a result of this fact, is important to change peoples' attitudes about other peoples' dialects. The knowledge of the possible processes of sound changes and the causes, is important to the language teachers because it will place him in a position to help learners who read different sounds from the ones written in texts. It also makes such a teacher more sympathetic and understanding in his career of teaching the "standard dialect" to the speakers of "non-standard' dialects.

Our study will make it clear that all these dialects are variations of Kikamba and are only manifestation of historical sound changes. If everyone is aware of that, then the idea of one form of Kikamba being superior to others will be killed.

Lastly we aim and hope to present to linguists, what according to our study is the direction of sound changes of Kikamba and what are the actual sound changes in this language. We stress actual; the study is almost entirely based on internal synchronic evidence of the language scholars who have hitherto attempted any study in this language have heavily relied on materials external to the languages to draw their conclusions. For example, using data drawn from one dialect and then comparing

it with data drawn from other related languages and sometimes using reconstructed proto-Bantu forms. Such studies are likely to be misleading and any results drawn from them wrong. This is so because there are possibilities of a dialectal variant, used along with the related languages, being a later development of the sound changes and therefore not an actual representative of the sound change situation in Kikamba. Alternatively, the sound in the chosen dialect may be due either to lexical restructuring or to analogy in that particular dialect, in which case, the true state of the sound change can be established only by looking at the other Kikamba dialects. The same situation could be existing in the other languages used along with the chosen Kikamba dialect for use by such a comparatist. The result will therefore be a wrong conclusion and a misrepresentation of sound changes in Kikamba.

However, as pointed out earlier, we shall not be able to look into every minor sound variation that there is in Kikamba. This is not possible and not even necessary for a historical linguist. It is possible to draw conclusive findings by examining the "main sound variations." We shall therefore study the four major dialects and ignore other little variations within them.

A fellow student (Ali - personal communication) has brought to our notice the existence of a dialect spoken by the Akamba community living along the coastal area of Kenya, especially Mariakani. However, we shall not include this dialect in our study. This will be due to the time factor and secondly due to the fact that the sounds which appear to have developed into

into new sounds are borrowings from the Mijikenda languages. We have also undertaken not to study the sounds changes affecting vowels. This is due to time factor, but not because there are not sound changes in this area. For instance we have noticed a few changes; /E/ is raised to /e/ in the dialect spoken in Kilungu, e.g. /nɛnɛ/ "big" is realised as /nene/ .

1.2.1: Hypotheses:

We shall test the following hypotheses:

(1) The existing dialectal sound variations in Kikamba are the products of historical sound developments. One can through systematic study posit common proto-sounds for corresponding sets of sounds. What this means is that, by studying certain variations of sounds and how such sound variations correspond to one another in the study dialects; also looking to how these correspondences show relatedness of such sets of sounds, one can correctly posit a proto-sound. Then, the motivations which brought about such historical changes can be shown to have been either phonological or morphological/analogical.

(2) Although on the surface, Kikamba synchronic forms appear to be mainly made of vowels the language originally had a /cvcv/ syllable structure like other related languages. The /vv/ syllable structure which is so prominent in the language to-day is a result of historical processes of consonant deletion.

(3) The historical sound changes were not the same for every dialect. Some dialects experienced some sound changes which others did not undergo. As a result, the dialects have developed different grammars. In the grammars of some of the dialects

there has been relexicalisation of certain lexical items due to these sound changes. This has led to restructuring and reanalysis of these lexical items. Such lexical items have different forms in the lexicon of each dialect's grammar.

1.3.1. Literature Review

There are only a few people, who have tried to study Kikamba from a linguistic point of view. As far as we know, only Hinnebusch (1974) "Rule inversion and restructuring in Kikamba" has done some studies in historical development of the language. He set out to show that Kikamba has inverted some phonological rules and this has led to restructuring. This means, that some present phonological rules are a result of re-analysis of the language structure after some phonological changes. When the initial or earlier sounds are lost, the speaker, for perhaps some morphological reasons, interprets the synchronic forms as basic and may derive what was actually historically basic from the synchronic forms. If this happens, then the rules are said to have been inverted. Alternatively this reanalysis of the sound structure in a lexical item may lead into epenthesis of new consonants quite different from the lost ones.

Hinnebusch therefore assumed earler forms of Kikamba quite different from the synchronic forms. The problem is that there are no written records of Kikamba representing the ones assumed by Hinnebusch, where his proposed inverted rules is attested. He therefore resulted into use of data from proto-Bantu reconstructed forms which he compared with at least

one dialect of Kikamba and two other dialects of some closely related languages. This being the case, we feel, Hinnebusch perhaps succeeded only in reconstructing Thagicu forms. Thagicu is supposed to be the parent language of the Central Kenya bantu languages; Kikamba, Gikuyu, Kimeru, and Kisegeyu. Therefore what he calls historical rules of Kikamba, may be historical rules explaining a stage in the development of the ancestor of Kikamba before it broke off with some of the related Tagicu languages. We suspect that what he calls rule inversion in Kikamba, may not be a true claim of Kikamba sound changes. There is a strong possibility for his stages one to four to be representing a stage when perhaps Gikuyu, Kimbeere and Kikamba were one language.

Kikamba has no /B/ anywhere in its phonetic inventory. The /β/ he claims is a reflex of /b/ in many cases is a reflex of proto-Bantu */p/. According to Bennett (1967 pp.143) even the other related dialects of Thagicu do not have /b/ or any reflex of it. Then how could Hinnebusch's rule purpotting that b → β in part be proved to be truly a stage in Kikamba development or even of Thagicu before the dialects split. How did he arrive at that conclusion that the rule existed in Kikamba? On the evidence provided by Bennett we may even claim that the rule shown does not even represent a historical development of Thagicu or any related language. How does he also differentiate the reflexes of */b/ from those of */p/? It would have been good for him to have drawn this difference.

We feel, it is proper to show whether a rule belongs

to a proto-language or whether it marks a stage of a daughter languages development. In the absence of /b/ or its claimed reflex /β/, we intend to propose the existence of /-b/ in the environment after a nasal as the hardening of a fricative. The bilabial, in most cases, comes from a weakened /p/ of Thagicu or proto-bantu. This is only true when there is a fricative in the derived form, otherwise the existence of /-b/ or of any other voiced stop in the environment /N-VC/ or /N-VV/ is by analogical extension. This will be discussed and illustrated more fully in chapter three; i.e. under the role os analogy in sound change in Kikamba.

His claim that the speakers may be having it in their mind hence its surfacing after a nasal, i.e. his rule (14) $\emptyset \longrightarrow$ b / N-V, has no support in the actual language. We have not found such support either in Kikamba synchronic forms or in our reconstructed forms of the language.

Another thing we want to point out is that his rule (2) as it is (it is stated elsewhere) would bring out wrong forms especially where /-l-/ is concerned. As we shall show (CF. 2.1) a general application of this rule would end up creating homophony. For instance /kitɔli/ "grasshopper" would become /kitɔi/ "that which produces smoke", /Bakuli/ "bowl" which was borrowed into Kikamba from Kiswahili would have become /Bakui/ "that which collects rubbish". Words like these would cause a lot of confusion when out of context. To avoid this the rule has been constrained to exclude lexical items which could cause homophony by undergoing the rule. According to our findings,

his paper does not largely lay a true claim on Kikamba as spoken by the Akamba. We will elaborate on the weaknesses in chapter three.

Bennett (1967) has studied the possibility of Dahl's law's existence in Kikamba. He points out that the law does not seem to exist or to have existed although he suggests a possibility of its existence. We shall show in chapter four, that this rule does not exist at all in Kikamba and may have never existed.

The two scholars seem to have been the only ones, who have made a serious attempt to study Kikamba from a true linguistic vantage point. Others who have attempted some factual study of Kikamba are Fansworth (1957), and Muli and Whiteley (1962). These scholars have attempted a survey of Kikamba grammatical forms and general vocabularly. Their literature is meant for general literacy instructions.

Muli and Whiteley (1962) attempted an elementary phonemic approach to Kikamba consonantal and vocalic sounds. They draw a phonetic chart for both segmental sound classes without using phonetic symbols for the sounds represented. It is only by guessing that one tries to determine what sounds their alphabetical diagrams represent. They leave many questions unanswered by their failure to offer a phonetic description. They list sound clusters as phonemes without stating where these clusters are actually phonemes and where they are not. They claim that there exists /ns/ and /nt/ in Kikamba, sounds which in our view do not exist at all.

We can say at this point, that Kikamba voiceless sounds are normally voiced in the environment after a nasal. Our research has shown that, the two sounds could have been found in Thagicu location of Kitui district. This location is inhabited by Kitharaka speaking people who also speak Kikamba. Therefore, it is possible, the two scholars confused the sounds for true Kikamba sounds. We all know such sounds exist in all Kimeru dialect group.

Since /-ə/ seems to be restricted to the environment after a nasal, we propose not to consider it as a phoneme. Other scholars hitherto considered it as a phoneme but our research has shown that it is its voiceless counterpart which is actually the phoneme.

We shall discuss and expound on the behaviour of what Muli and Whiteley called stable and unstable vowels. These will be discussed in chapter two where we show that those vowels do not only fail to undergo vowel coalescence but also palatalisation and glide formation. Since our study is diachronic but using synchronic forms, we shall use the failure of the unstable vowels to undergo the above process to draw diachronic conclusions. We shall treat such cases as showing restructuring of lexical items. That is, in the mind of the speaker, the phonetic form of the lexical item, constitutes the true form and therefore not aware of any earlier form of the lexical item. If then, the earlier form had a consonant between the vowel series, it is completely lost. This has caused the reanalysizing and restructuring of the lexical item by the speakers.

Chapter two will be devoted to discussing /-l/ deletion and its consequences to the synchronic lexical structures of the language. This will be an attempt to correct what Whiteley and Muli (1962) and other earlier scholars have portrayed as just synchronic processes. In so doing, they failed to offer an explanation of how the deletion came about and therefore left the readers aware of the processes but ignorant of the causes. Later in chapter three, we will attempt to discuss another (phonetic) phenomena they discovered in the language and also failed to offer explanations to its cause. This is a phenomena, where N + Vowel results in a pre-nasalized cluster

(1) n + vowel mb, nz, or g in words like

N - iŋge	mbiŋgɑ 'many'
N - ose	mbose 'rivers'
N - au	Nzau 'white'
N - io	Nzio 'black'

They fail to offer any explanation for this. They just say it happens. We shall propose that, this is due to analogical extension from forms of class 9/10 which have the fricative that change into stops in the environment after a nasal (CF.3.2). They differ only on terminology. For instance he calls what Muli and Whiteley call stable and unstable vowels, immutable and mutable vowels. The process of either undergoing or not undergoing coalescence, is what he calls "the Kamba law". He, however does not attempt to show how the consonant losses come about, although he mentions such losses.

Ford (1972); has attempted a study of Kikamba tone. He gives a synchronic survey of Kikamba supra-segmental phonology.

However, he does not attempt a comparative study of the different tone systems of each dialect. This would have shown the major differences between Kitui and Machakos dialects. We shall state our findings in respect to this in our concluding chapter. Along with tone, he lists segments of Kikamba, but unlike other earlier scholars, he gives phonetic descriptions of the sounds he lists.

1.3.2. Theoretical Literature:

The two theories which will feature prominently in our discussions, will be Transformational Generative Phonology and the Natural Generative Phonology. TGG is perhaps best illustrated in Chomsky and Halle (1968) while NGG was proposed and developed by Vennemann in a series of papers (1971, 1972 and 1974).

The first scholar to try to apply TGG to Historical linguistics was King (1969). He suggested that there is nothing like analogy, all that there was is grammar simplification. But what he failed to note was, motivations for change and functions for change are symbolization devices with a phonetic and conceptual achievement. So a linguistic change is more complex than that put by King and all levels of language must be considered in looking at the sound change. TGG's approach of reducing it to phonological level is seriously inadequate. King had argued that all linguistic changes could be explained in terms of rules change (Phonetic). For him, all language changes, were either due to innovation or simplification. Innovation resulted from rule addition to the grammar while

simplification consisted of rule generalization, rule loss and rule reordering. For instance, he argued that one of the ways in which dialects differ is by applying the rules differently. As we shall argue or mention, for such claim to have explanatory power, it needs to have a principle that predicts, the probable direction of change. It is not possible to do so, without engaging in abstractness.

Kiparsky (1965, 1968, 1971) argued that rule reordering is a mechanism of Linguistic change. This presupposed extrinsic rule ordering in synchronic grammar. This is because synchronic processes are a prerequisite for historical sound changes. We have assumed that the kind of ordering he had in mind was extrinsic ordering, since he did not specify. Such rule ordering is supposed to be towards the direction that maximizes transparency and minimizes opacity. Therefore the first thing rule reordering proponents were supposed to do is to tell or predict the direction of the reordering. In his first attempt, he suggested that, the principle governing rule reordering must be one that maximizes feeding order and minimizes bleeding order. That is rules are reordered in order to allow their fullest utilization in grammar. The principle predicts that rules in the counter feeding order may reorder into feeding order and the rules in the bleeding order into counter-bleeding order but not the reverse.

Kiparsky (1971) is a result of his realization of weakness of his (1968) principle. He accordingly proposes;

(1) Allomorphy tends to be minimized in Paradigms. This amounts to the old principle of analogical levelling which

aims at creating paradigm uniformity. This is a departure from TGG earlier stand concerning analogy. Also indirectly accepting the role of morphology in sound change, since the main motivation of analogy are morphological factors or conceptual simplification. In 1974, Kiparsky recognized the lack of direct relation between surface simplification and grammatical simplification (CF. King 1969).

Kontsoundas, Sanders and Noll (1971) after arguing against rule ordering in synchronic grammar, rejected rule reordering (extrinsic) as a mechanism of linguistic change. They said that there are rules which are independently motivated and which can explain dialect differences or language differences and therefore the idea that this is done by dialects reordering the rules differently was both misleading and wrong.

In the case of NGG theory, there are many scholars, who recently have written papers to justify its suitability. Most of them, however, have tried to add a few things to Vennemann's model with a view to improving it. For example, Alvin Cearley (1974), while arguing on ordering of phonological rules accepted intrinsic rule ordering. He does so on the principle he calls - relative invariance condition; The principle states;

> "No phonological rule can neutralize a phonological opposition, unless that rule is needed independently of any phonological alternation."

He accepts the idea that many diachronic and synchronic rules are morphological and that morphological rules preceded phonological rules. He further observes that forms which are

subject to morphological rules tend to regularize with time. To us, this means that morphological factors largely motivate analogy. It is easy for us to see why King (1969) dismisses analogy as a case of grammar simplification. This is because there is no level called morphology in TGG and therefore it is difficult for King to see motivation for analogy. TGG uses phonological rules and forms for what is actually morphological.

Mathew Chen (1974) in a lengthy paper, concludes the following;

(1) Simplicity is the overiding consideration in synchronic grammar.

(2) Phonecity is predominant factor in synchronic grammar.

(3) Functionalism is an important factor in linguistic change. This means, in sound changes, morphological considerations take an upper hand and therefore most of the changes which start as phonetically motivated are mostly given or associated with morphological functions. On the failure to succeed in getting such associations, such changes are bound to be interrupted.

(4) Diachronic rule order, reflects the actual sequence of events in real time, these obey no other rule except the whims of history. He admits that there is a possibility for rules to intersect one another during each rule's internal time dimension but he says further about rule ordering; - that to talk of rule ordering is to make wrong claim, because historical rules occur at particular times in history and if they intersect or interact with others it is not due to the nature of their SDs. The thing is that, these rules applied whenever their SDs were met, when the rules were

productive.

We have shown how the scholars in TGG camp noticed that their model has many flaws, and how a number of them have suggested improvements. We cited among them Kiparsky (1965, 1968, 1971). We state as a rejoinder that these scholars failed to note that motivations and the functions for change are symbolisation devices with a phonetic and a conceptual achievement. So a linguistic change is more complex than that put forth by King and all levels of language must be considered in looking at sound change. TGG's approach of reducing it to phonological level is seriously inadequate. So we undertake to accept Vennemann's view as regards sound changes. His consists of two sub-parts of the possible changes;

(1) Phonetically motivated simplification which includes addition of natural rules, rule generalization and rule unordering (into "intrinsic" or 'feeding' order).

(2) Conceptually motivated simplification consisting of rule loss and relexicalization. Relexicalization includes:

    (a) resulting lexical redundancy rules

    (b) morphologized rules

    (c) Inverse rules

Thus he draws a phonetic/conceptual distinction and makes phonology more concrete and gives allomorphs their deserved independence.

Kenstowics/Kisseberth, (1977) brought in quite many suggestions in their attempt to extend TGG theory. They have

recognized the role of non-phonetic factors in Phonology. They recognized that phonetic rules can be morphologized and be inverted. They also recognized the role of paradigm regularization hence analogy. Instead of rule ordering, they suggested "global rules", thus the derivational factor. In their principle of derivational history, rules are allowed to refer to the derivational history of a string, then on the basis of it apply or fail to. The way we understand it, is that, the rules are given power to refer to many stages in the derivational history of the string. It actually means the description of the process followed to derive the string. Essentially, it does the same as rule ordering but without having to describe it overtly as the rule ordering mechanism does. We would perhaps talk in terms of restructuring and therefore relying more on the surface forms.

Hooper (1976) has argued against the concept of rule reordering. She says NGG is closely tied to the surface forms. It therefore predicts that all historical changes are motivated by surface forms and not by abstract (ordering) related rules. She, through numerous examples, shows how wrong a theory based on abstractness describes linguistic changes. She sums her discussion by saying that any new alternations always arise as phonetically motivated alternations. Morphosyntactic alternations are rather the residue of old phonetic alternations or adaptation of phonetic alternations. This implies that, phonological processes are triggered by some phonetic factors which in course of time may be either lost, or be given new interpretation. The spread of such motivated sound change may be constrained by non-phonetic factors. These are the cases

where a string meets an SD of a rule but fails to undergo it. Examples of these are, when a rule fails to apply because its application would create homophony or cases where a rule is extended beyond its domain by analogical extension.

A change initiated in phonetic environments does not necessarily progress in a regular manner. This is because, although such changes will try to apply regularly throughout the language between the initiation of the sound change and its completion many things may happen that prevent the result of a sound change from being completely regular. Such things if they take place, will create exceptions to the sound changes. In Kikamba the deletion and the subsequent loss of /l/ has experienced this kind of non-phonetic interference. The weakening of /l/ intervocalically is phonetically motivated as it is the case for other sounds like /ɣ/. Hinnebusch (1974) lists it as follows.

$$3\ \begin{bmatrix} +\text{cons} \\ +\text{cont} \\ +\text{voice} \end{bmatrix} \longrightarrow \emptyset \ /\ V\text{-}V \quad (\beta\ 1, \gamma \rightarrow \emptyset\text{-})$$

One would therefore expect all /l/s to be deleted by the application of this rule.

(4a) The rule works in the following cases

Class 9/10	forms with /l/ deleted	cl12 forms with /l/	Gikuyu	Kikamba Reconstructed forms	Gloss
	Mbui	Kaβoli	mburi	*Buli	"goat"
	Ose	Kalose		Lose	"river"
	Mbua	Kaβula	mbura	*Bula	"rain"
	Oβja	Kaloβja	ruhia	*loβia	"horn"

However the following do not undergo this rule although they meet its SD.

(4b) Ki ɛɔli 'grasshopper'
Ta la 'count'
Tula 'cut'
evali 'lump of soil'

The above lexical items do not have the /l/ deleted. Hinnebusch's rule does not apply here. If phonetically motivated rules applied without exception, then rule (3) would have applied to the above lexical items. Its failure to apply strengthens Hooper's observation, that a change initiated in phonetic environment does not necessarily progress in a regular manner. Investigations as to why this /l/ rule does not apply reveals that non-phonetic considerations constrain the rule. If the rule applied to the above words, one would get surface forms which would cause lexical merger and create homophony.

(5) Kiɛɔ́lí (r3) Kiɛɔ́i "that which gives smoke"
Tulá (r3) Tuá "settle"
evali (r3) evai "poison".

The lexical items /kiɛɔi/, /Taa/, /Tua/ and /evai/ are there in the language and have meanings or semantic values assigned them. If therefore the /l/, which is the only sound differentiating the two morphological sets, is deleted, the result will be homophony. It is perhaps worth to point out, the tone pattern is the same for each corresponding lexical forms in the two morphological sets. In this case therefore, there will be neither accoustic nor articulatory difference between any two lexical items so merged. Therefore, to avoid this, the morphological rules have stopped the regular application of a

phonetic rule to strings which meet its SD.

It is clear that, of the two theories developed for analysing linguistic grammars, none is fully adequate to handle all the problems there are in Language. Also the two theories, TGG and NGG are both generative and they differ in that one advocates the use of abstractness in trying to solve linguistic problems, while the other tries to minimize abstractness in such analysis. NGG, apart from rejecting abstractness, recognises the fact that languages processes are complex and cannot be solved without making use of all levels of language. It clearly shows that phonological level alone is not adequate for explaining linguistic changes. Therefore unlike TGG model, it recognizes morphological level and makes use of it in explaining sound changes. It therefore appears to be more adequate as a mechanism or device to handle most of the problems of natural language.

We therefore choose to use it as our basic theoretical model or framework. This model, as said earlier, was proposed and developed by Theo Vennemann through his papers of (1971, 1972c, d, e, f. and 1974a). It is also expounded by J.B. Hooper (1976). Initially, we had chosen TGG model as outlined by Chomsky's aspects (Chomsky 1965; Chomsky and Halle 1968) as our model but after trying to analyse our data, we found it quite inadequate as a mechanism or device to handle the problems we encountered. We shall show how we found it inadequate as we discuss the solutions we thought correct to these problems in later chapters.

1.4.1. Methodology:

We elicited our data from respondents by use of word lists. These were read to the informants who were asked to translate them into their dialects. The words were in both English and Kiswahili to avoid influencing the pronunciations of the informants. In many cases the informants were not told of the dialect spoken by the researcher. This was meant to minimize biases. We believe the data we got is representative of the true dialectal variations in the Language.

We shall establish sets of sound correspondences and analyse their relatedness through comparative method. This will be done from internal evidence mainly observed in Kikamba itself. By internal we mean we confine ourselves as much as possible to the information as we can gather through the study of Kikamba dialectal sound variations. We therefore resorted to proto-Bantu and to languages closely related to Kikamba only when we were not in a position to decide the possible direction of the sound change. The same was done whenever we encountered cases where analogical extension had obscured diachronic developments. These were cases where synchronic Kikamba forms did not reflect what we suspected was truly a proto-sound. This is discussed in details in chapter 2.1 and 3.2. Here we just cite a few examples.

We discovered that appearance of /l/ does not represent what was the correct proto-consonantal sound. Its existence is due to analogical extension from other cases of lexical items in this class which have /l/. It is a morphological interpretation extended through analogical mechanism. It can be shown that

where /ɣ/ was deleted and subsequently lost, the resulting /VV/ have an /l/ epenthesis between them, when the lexical item in which they are is put in class 12/13 (CF.3.2).

The data collected for the two major Kitui dialects, was mainly got from the students and the teachers of Kitui High School. The questionnaires used contained words in isolation and in sentences. Although the words were in English and Kiswahili, adequate help was given to the respondents by the investigator. The responses were recorded in Phonetic transcriptions. Sometimes the investigator engaged in free discussions with the native speakers of other dialects. That is the dialects other than the one he speaks. This was meant for checking the data collected. He also listened to the native speakers of each dialect engaged in free discussions among themselves.

1.4.2. Data Analysis:

The dialectal variations observed were compared and the differences noted. These synchronic sound variations were used to establish what would have been the proto-sounds. Data from outside Kikamba were used where no conclusive results were possible from the language's internal structure.

The reconstructed proto-sounds were used to establish how each dialect has developed independently of each other. Motivation for each dialectal sound variation was sought and where possible established. We have also tried to show which dialects fall together in sound innovations and therefore have been together the longest. In every case, we have tried to show, through linguistic argumentation why we think NGG meets adequacy criteria, and therefore it is better than TGG model.

CHAPTER II.

2.00. This chapter will address itself to the reconstruction of two sounds, the lateral */l/ and the voiced velar fricative */ɣ/. We say reconstruct, because the two sounds are in the process of disappearing from the synchronic forms of the language. The velar fricative is only found in one dialect of Kikamba. In the other dialects, it is either lost or changed to /j/. The change seems to have been environmentally conditioned as will be shown in our later discussions. The lateral /l/ presents an interesting case. It is found in some lexical items while in others it is deleted. In class 12/13,/l/ epenthesis occurs in all cases where two vowels follow one another within a lexical item. We propose to treat the /l/ epenthesis as a case of analogy.

As indicated in the last chapter, we shall use synchronic dialectal forms to establish any possible sound changes in Kikamba. We shall, therefore, make use of some synchronic phonological rules, to establish cases in which speakers consider restructuring to have taken place. If a sound is considered to have been lost in a certain environment in a lexical item, then such a word undergoes restructuring in the mind of the speaker of a later generation. The loss of such a sound may create conditions which will satisfy the SD of a phonological rule hitherto not satisfied. This means extending the domain of the application fo such a rule. If we are able to show that this has happened in either the whole language or in certain dialects, then we can claim confidently that a sound change has taken place

place in respect to the deleted sound even if the sound is found in related lexical items or the other dialects. Therefore the idea of such a sound existing in the underlying form of the lexical item, will have been shown to be wrong and too abstract to the speakers. This is the way we intend to solve the problems raised by the deletion of /l/.

The chapter will be divided into three parts. Part (2.1.0.) will deal with /l/ deletions and the problems it raises. We shall offer what we consider plausible solutions and posit */l/ as a proto-sound for cases where it was lost. Part (2.2.0) will be devoted to discussing the loss of /ɣ/. We shall show its synchronic reflexes how it was lost and write rules for the processes involved in its loss. Finally part (2.3.0) will discuss the two types of surface vowels in Kikamba. These are, (a) those derived from the deletion of the two sounds and (b) the others which are not as a result of any consonant deletion.

2.1.0. Lateral Deletion:

Kikamba like other languages, has undergone the process of sound weakening. The most pronounced process attested in it, is that of making stops fricatives. For example the language has only /t/ and /k/ as stops. The continuants have further been weakened into /ϕ/ in certain environments especially intervocalically. The lateral belongs to the latter group. Most laterals in this environment have been weakened to zero or to put it in another way, have been deleted. When we say most we imply that not all laterals are deleted in this environment. Then the question is,

why is it the case? We shall offer the answer after establishing the case. We begin by showing cases in which /l/ is deleted. We shall use data from a related language along with these collected from Kikamba.

6(a) basic primary class forms (Kikamba)	(b) Cl.12/13 Kikamba	(c) Gikuyu	Gloss
[Keema]	[Ka-lema]	[Kerema]	'mountain'
[eima]	[kalima]	[erima]	'hole'
[mboi]	[kaβoli]	[mbori]	'a goat'
[keimo]	[ka-limo]	[kerimo]	'young child'
[ose]	[ka-lose]	[ro:e]	'a river'

From our examples above, it is clear that /l/ is deleted in all lexical items in (c). The data in (6) would tempt a linguist to formulate a rule which shows that /l/ is deleted in Kikamba except in classes 12/13. This would be a morphological rule. That is our rule (3) of chapter one will need to be constrained. What this will mean is that the part of rule (3) that deals with the lateral and which had began as a purely phonological rule will have to be constrained by a morphological factor.

(7) $\begin{bmatrix} c \\ +\text{lateral} \end{bmatrix} \rightarrow \emptyset \quad \begin{bmatrix} v - v \\ - \text{class } 12/13 \end{bmatrix}$

Rule (7) is a productive synchronic rule, and can be used to derive PR from UR of any string containing /l/. But rule (7) makes a wrong claim about the synchronic behaviour of /l/ and what motivates its absence or presence in the language. Later in (CF.11) we show that the real constraining factor is the avoidance of creating homonyms. Chapter (3.2) shows in details,

the existence of /l/ in class 12/13 is a case of epenthesis due to analogical extension. This means /l/ deletion (cf.11) is a diachronic rule. TGG model has no way of constraining rule (7) to show that it is no longer productive. TGG allows all kinds of information to be included in structural descriptions of rules, in so doing, the rules become too powerful as devices of describing natural languages. The rules become even more powerful when the model allows extrinsic rule ordering. As a result, the model brings a lot of abstractness in language description hence makes false claims about actual language state. Most of what it posits as underlying forms are actually proto-forms and most of its synchronic rules are diachronic rules.

NGG, apart from having a distinct morphological level in its model, avoids abstractness and relies mostly on the surface forms. In our problem, the /l/-less forms are considered to have undergone restructuring as the result of rule (11), which is regarded as a diachronic rule. The restructuring was done by the generation which followed the /l/ loss. The semantic relationship between the two sets of lexical items (the /l/-less and those with /l/) is shown by use of Vennemann's via rules.

Rule (7) will have explained why class 12/13 cases have /l/ and lexical items which do not belong to this class have no /l/. But there are two things we discovered during our study which falsifies rule (7). We found out that the /l/ in class 12/13, are not true reflexes of a proto-lateral. In Kikamba, there is a morphological rule which causes /l/ epenthesis in all cases of /v-v/ series in this class regardless of the consonant which

was lost. That is, any such series of vowels is interpreted as having lost an /l/, hence the /l/ epenthesis. This case is discussed at length in chapter three under the role of analogy in sound change in Kikamba. So the claim rule (7) makes about the existence of /l/ in class 12/13 is false. The rule had applied and deleted the /l/ but its epenthesis has nothing to do with application or non application of the rule. It is a case of analogy motivated by morphological factors.

The second point is that rule (3) is constrained but not as shown in our rule *(7). The constraining factor has to do with another mechanism of language; the avoidance of creating homophony. Avoidance of creating homonyms, as a result of sound change was noticed by Gillieron in his study of French dialects. His view was that if homophony is created as a result of sound change, one of the homonyms will be forced out. Later scholars like Lehmann (1962 p.172) have argued that modifications caused by prevention of creating homophony is minor in languages. Lehmann showed that there are many homonyms in English and none of the pairs of homonyms has been forced out. He gives examples as pair, pear; bear, bare. But he accepts that if homonyms are of the same set of morphological or semantic, one of them may be lost.

In Kikamba, tone plays a great part in preventing homophony, and it is in this respect that tone acquired phonemic function in the language. But sometimes, two words may have the same tone pattern but differ only in the presence of a segment in one and the absence of it in the other. In this case, if the differentiating segment starts to get lost

in the language, it seems the language prevents homophony by preventing the rule causing the loss, from affecting such lexical items. In this way, the lexical distinction is maintained and merger prevented. In this case, the language applies non-phonological factors to constrain a phonological rule.

The following words will show where rule (3) would have created merger.

*(8) words with /l/ and therefore satisfying the SD of rule 3	Gloss	Result after rule (3) Application	New meaning
[kétɔ́li]	'glasshopper'	[kótɔ̀i]	'That which produces smoke'
[ŋgale]	'a vehicle'	[ŋgae]	'Glads'
[éβali]	'lump os soil'	[éβai]	'poison'
[mbaŋgolɛ]	'may rub"	[mbáŋgoɛ]	'May I disarrange'
[βulania]	'mix'	[βuania]	'expose'

*The Tone Pattern is the same for the two sets of words.

The lexical items resulting from the application of rule (3) would have merged these items with others which exist in the language and have fixed semantic values. This merger would have led to the two sets of lexical items losing their surface morphological distinction, hence their semantic distinction being lost. This would cause confusion in communication especially when the words are used out of context. Language is essentially a communicative tool and therefore this has to be achieved effectively. The language has two alternatives to correct this situation. One to lose one of the homonyms and innovate a new lexical item or to

prevent the deletion of the differentiating segment. This will mean constraining the phonological rule with non-phonological factors or information. So our rule (3) will be:

$$*L > \emptyset \;/\; \begin{bmatrix} V - V \\ - H \end{bmatrix}$$

This rule is non-phonological in that the phonetic conditioning is constrained by non-phonetic information. The very nature of the constraining environment (-homophony creation) suggests that it may be global. That is the SD of the rule has the power to scan over the string, establish the likely result, then apply or fail to apply on the basis of the kind of output string. In our case, if the output would create homonyms, the rule doesn't apply. Global or look-ahead rules were proposed by Kenstowics/Kisseberth (1977). In proposing this type of rules he said:

> "....The motivation for look-ahead rules of this type is fairly obvious. If independent rules are required to specify what is and what is not a permissible consonant cluster in the language, and if a rule of vowel deletion is sensitive to these independently motivated conditions, it is natural to seek to invoke these conditions in delimiting the scope of the application of vowel deletion rules. ...To build the conditions directly into the rule of the vowel deletion entails repeating information (p.222).

They give examples of Tonkawa, a language which does not permit clusters of two consonants, if one of the consonants is glottalised. In this language, the rule of vowel elision fails to apply if either of the adjacent consonants is

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* -H is a diacritic feature standing for -Homophony. This is marked on all items where /L/ is not deleted.

glottalised. This is an example of a rule, where specifying the environment is repeating the information. ...Vowel elision in Tonkawa if stated in part as being ...

$$C \rightarrow \emptyset \;/\; [-\text{glottal}] \_\_ [-\text{glottal}] C$$

will be repeating (in an indirect manner) that the clusters containing the glottalised consonant are not permitted... Such cases are common in languages to justify a general observation and drawing conclusions.

Further in their argument for look-ahead rules, they state other motivations. They say that, if a rule can be shown to apply to a given structure only by virtue of the fact that having done so, would certainly cause additional vowels then look-ahead rules can be justified. This is to say

> "...one phonological change is directly correlated with some subsequent change..." (p.222).

They use data from Klamath (Kisseberth 1973). The example quoted has to do with distributive verb forms. These are said to be formed by reduplicating the initial consonant cluster of the stem and a short version of the initial vowel of the stem. There are two rules involved here (for details see (p.223). The rule of vowel reduction, which changes all short stem vowels to /a/ in distributives and the rule of vowel drop deletes the /a/ in the context - cv. So the forms like "qui-qny-a" receive the following derivation:

(10a) /qniy'-a/

qni-qniy'a	a reduplication
qni-qnay'-a	a reduction
qni-qny-a'	a vowel drop.

(p.223)

There are other examples but we consider the justification given enough. We then conclude their discussion by quoting their formulation for (10a).

(10b)...Delete the reduced vowel /a/ provided that the immediately following consonant does not appear in the ultimate phonetic representation followed by another consonant.

The function of the look-ahead rules is to prevent creation of unacceptable sound sequences in the language. To us, the look-ahead rules are in the same line with Kisseberth's conspiracies. Our rule (9) is along the same lines only that it prevents creation of homophony. We consider what Kisseberth/Kenswicz have termed look-ahead rules, just cases of morphological rules. That is morphological information constraining phonological rules even when the conditioning environment is still there. Therefore according to us there is no need for look-ahead rules, rather we should posit or include morphological information into the constraining environment just as we have done with our rule (8). We think Kisseberth/Kenswicz proposed the concept of look-ahead rules because they were working within a model which had no distinct level for a morphology. So our rule (9) can produce acceptable forms in Kikamba. There will be no need of positing abstract synchronic underlying forms, because we cannot show other forms with an /l/, so that we can claim the two forms alternate and therefore need to be derived from a common underlying representation. All we can say at this point and from the data we have is that rule (9) is a diachronic rule which was constrained by morphological

consideration as we showed in (9). The result is that /l/ remained where the rule failed to apply. Later analogy, motivated by morphological interpretation, caused /l/ epenthesis in all cases of (VV) resulting from historical elision of consonants intervocalically. This creates confusion to people, especially linguists trying to study Kikamba and failing to establish the class 12/13 analogical cases. It is easy for such persons to think the /l/ in class 12/13 lexical items were not affected by /l/ deletion rule. Then posit an underlying representation with an /l/ because the class 12/13 form has an /l/ and therefore /l/ can be attested in synchronic forms, therefore it must be there in the UR. At the initial stages of study we had the same problem and as a result we had termed the class 12/13 and 5/6 for augmentatives marked. We had argued that these forms were marked in that they were not commonly used and therefore were not affected by the /l/ deletion rule. But after finding /l/ in this class in words which previously or before the consonant loss had other consonants other than /l/ we became suspicious and carried on more research. It is then that we came up with the true situation, that /l/ in this noun classes, is not necessarily a reflex of a proto /l/.

Therefore we can now confidently reconstruct a proto-*/l/ for the cases it is deleted and rule (9) represents the sound change leading to the present /l/ state in Kikamba:

(11) $*l > \emptyset \; / \left[\begin{matrix} V - V \\ - H \end{matrix} \right]$ in all dialects of Kikamba.

The problem this will create will be to determine whether; if this is the case, we can establish reanalysis of the lexical items which have been affected by this change. That is, have such words undergone or experienced restructuring in the minds of the speakers and how can we do it? We propose to use some synchronic processes to do it. This is discussed below.

2.1.1. The Loss of consonants and the extension of scope of application of some Phonological rules.

Phonological rules apply whenever their structural descriptions are met unless constrained by some non-phonological factors in their SDs. It is also the case that, these non-phonological factors can extend the scope and the domain of a rule application.

One way a phonological rule can have its scope of application extended, is by eroding away the environment which was previously preventing the satifying of that rule's SD. For instance if a rule causes a sound to be lost and by so doing creates an environment for another rule to apply, then, the latter rule has its scope of application being increased. We can say that the two rules have been unordered intrinsically by an accident of history. The situation is that one of the rules is intrinsically ordered before the other in that it has increased the scope of application of the other. In this case therefore a sound change has increased the scope of application of a synchronic rule. What this means is that in the mind of the speakers of that language, restructuring has occurred to all

those new cases being affected by the rule. This is what global rules claim to take into account before they apply. The claim that rules take into account the derivational history of a string and apply or fail to apply, to us has the following implications.

One, if it is like the case of what we shall discuss below then, it is the question of whether the speakers consider restructuring to have occurred or not occurred to the lexical items in question. If they consider restructuring to have taken place, then, the rule applies because its SD is satified. In this case the UR and the PR of the lexical item is the same and therefore the question of referring to the UR to determine the derivational history is not necessary. It will be necessary, if all we need is to describe the process taken in arriving at the PR and therefore we will be doing the same thing which is done by extrinsic rule ordering only that it will not be overtly done. If the speakers consider restructuring not to have taken place, then the rule does not apply. Two things may be in play here. One they could be aware of that sound being in the underlying form. This will be the case where there will be two alternations of the same word, and one containing the sound. The deletion in this case is a synchronic process. The other is where the sound does not appear in any alternation, but the speakers still recognize or feel there is some boundary between the two consecutive sounds, the second sound being the one resulting from the deletion. In this case we may say that the speakers are still aware of former existence of some intervening sound,

although they may not be sure what sound it was. In the latter case, the sound is in the process of being lost and we could expect it to be completed in a generation or two to come.

Having discussed the question of derivational history and giving our views on the process it purports to explain, we can now turn to discuss the phonological rules we intend to look at.

The phonological processes we intend to use to show lexical restructuring going on in Kikamba as a result of loss of consonants, are palatalisation, and vowel coalescence.

2.1.2. Palatalization:

Before we discuss palatalization, we have to mention the two types of surface vowels observed by earlier scholars of Kikamba.

Muli and Whiteley (1962:10) noted that vowels which come together through deletion of consonants do not coalescend. But they put this in a different way. They called the vowels that caused coalescence 'mutable vowels'. They defined them as these which are preceded by a consonant in Gikuyu. This means, that the equivalent of the lexical items in Gikuyu have a consonant before these vowels. Those without the preceding consonant in Gikuyu, they called 'immutable vowels'. The immutable vowels cause coalescence. Farnsworth (1957) called them the stable and the unstable vowels respectively and the process he called 'Kamba law'. It was also noticed by Ford (1975).

We shall discuss coalescence later (2.1.3). We start with palatalization, which as we noticed earlier behaves like coalescence in respect to the two types of vowels. We also want to take the claim of these earlier scholars further as regards the vowels. What Farnsworth called "stable" vowels, are the vowels resulting from consonant deletion and subsequent loss of the consonants. So historically, such vowels had consonants before them but it is not the case with his "unstable" vowels.

(12) Lexical items with unstable vowels.

underlying form	PR	Gloss.
/Ki-ama/	[tʃama]	'union or style'
/Ki-ai/	[tʃai]	'tea'
/Ki-umwa/	[tʃumwa]	'a week'
/Ke-aθe/.	[tʃaθe]	'a promise'
/Ke-aβi/	[tʃaθi]	'a traditional mark'
/Ki-amb /	[tʃamb>]	'a peg'

It is clear from (12) that palatalization occurs whenever its SD is met in case of unstable vowels. So that

(13) $K \rightarrow tʃ \;/\_ \begin{bmatrix} V \\ -back \\ -low \end{bmatrix} \begin{bmatrix} V \\ +back \end{bmatrix}$ is true for all the data in (12). But if we use this rule in (14), it will not apply, although the SD is met.

(14) Lexical items with stable vowels	PR	Gloss
UR		
*(i) /Ke-ato/	[Keato]	'a shoe'
*(ii) /Ke-angi/	[Keangi]	'snuff box'
(iii) /Ke-um>/	[Keum>]	'a curse'

*true only with certain dialects.

No palatalization takes place here. As indicated, it is only so with "standard Kikamba" and with some speakers of the other dialects. To explain this failure of the rule although its SD is met, we have to result to historical information. These lexical items had /l/ and /ɣ/ between the class marker and the first syllable of the root. The /l/ has been deleted and subsequently lost through our rule (9). In this case one would expect rule (13) to apply to these strings because SD is satisfied. The fact that it does not apply poses a problem. There are three ways to solve this problem. We can do this using extrinsic rule ordering by ordering rule (13) before rule (9). Another way is to use global rule constraint, so that the rules can refer to the derivational history of (14) and then fail to apply because the strings in it are derived through the deletioned /l/. As we argued earlier in this section, there is no need for this. Instead we proposed the use of normal phonological rules and if they fail to apply, we take it that the speakers feel there is either a consonant in the UR or they feel there is a boundary. For (14) the latter is the case; the lexical items have undergone restructuring but the speakers still recognize the syllable boundary which was initially marked by a consonant. This is because we cannot posit an underlying form with an /l/ since it is not attested at any surface form.

Some speakers especially those of Kitui dialects and some of Kilungu dialects, palatalize in (14). This is to strengthen our claim that, these lexical items have been restructured after

the deletion of /l/. The speakers of these dialects have this in mind and therefore have no idea of the boundary as the speakers of the 'standard dialect'. Examples in (15) will prove this.

(15)

UR	PR	
/Ke-ato/	Kʲato	'a shoe'
/Ke-aŋgi/	Kʲaŋgi	'snuff-box'
/Ke-umɔ/	[Kʲumɔ]	'a curse'

The majority of my informants in Kitui pronounced it with /kʲ/ but others had completely palatalized to /tʃ-/.

We sum up this discussion as follows: In some Kikamba dialects, especially in Kitui and some individual speakers in Kilungu, the deletion of /l/ and the subsequent syllable boundary it occupied is completely lost in the minds of the speakers. The lexical items which had /l/ historically, have undergone complete restructuring in the minds of those speakers. This is proved true by (15). The palatalization takes place completely unlike (14) where it does not. In either of cases, there is no overt reflex of /l/ because neither is there an alternation with an /l/ nor with /l/less form. Therefore our argument that in (14) the failure of palatalization to apply is due to the speakers' feeling that there is something between the two consecutive vowels, which is only a boundary, is correct. The speakers who do not palatalize have not fully restructured their words but even then they do not have /l/ underlyingly. Presently we cannot produce a formalism to represent this information, neither are we aware of the existence of such in the present phonological models. We rejected extrinsic rule ordering and global constraint

rules earlier in the chapter. We suggest the NGG approach of relexicalization. The lexical items in (14) have been relexicalized. Although complete restructuring has not taken place in the minds of the speakers' lexical redundancy rules provide the informations which prevent the application of rule (13). If this is acceptable, then we can posit the forms with /l/ as reconstructed forms as below. For lexical redundancy rules (cf. Antilla 1977 pp.75.)

(16) *Kelato [K^yato] or [Keato] "shoe"
*Kelaŋgi [K^yaŋgi] or [Kiangi] "snuff holder"
*Kelum> [K^yum>] or [kium>] "fig tree"

The palatalized forms are used in Kitui and some speakers in Kilungu and the unpalatalized forms in "standard Kikamba".

There are other phonological processes or rules which can be used to prove the claim made here. We shall mention, without discussing in details one and discuss the other. The two are glide epenthesis and labialization.

(17) Glide

$$\emptyset \longrightarrow [j] \;/\; - \;\; VV$$

Rule (17) applies whenever its SD is satisfied.

(18a) (i) /eana/ /jeana/ "hundred."
(ii) /eanz>/ /jeanz>/ "abandoned homestead"
(iii) /eaŋgi/ /jeaŋgi/ "an arrow"

The lexical items in (18) are known to have had consonants historically. Data from related languages and the Kitui north dialect of Kikamba give:

(18b) (i) /eɣana/
(ii) /eɣanzɨ/
(iii) /elaŋgi/

Rule (17) has applied to all cases in (18a) a clear proof that the speakers have restructured the lexical items. The rule could not have applied if the lexical items had the deleted consonant underlyingly.

2.1.3: Vowel Coalescence:

According to Muli and Whiteley (1962:10) the following is the pattern of vowel coalescence in Kikamba.

(19) a + a = a
a + o = ɔ
e + e = i
a: + a = a:
a: + e = ɛ
a: + ɔ = ɔ
a: + o = ɔ
a + e = ɛ
o + u = u
a + ɔ = ɔ
u + o = o

We can formulate two rules here:

(20a) $\begin{bmatrix} V_1 \\ +\text{low} \end{bmatrix} \begin{bmatrix} V_2 \\ +\text{high} \end{bmatrix} \longrightarrow \begin{bmatrix} V_2 \\ -1 \text{ degree} \end{bmatrix}$

b) $\begin{bmatrix} V_i \\ \alpha\text{high} \end{bmatrix} \begin{bmatrix} V_{ii} \\ \alpha\text{high} \end{bmatrix} \longrightarrow \begin{bmatrix} +\alpha\text{high} \end{bmatrix}$

If the above is a productive phonetic process, we should expect it to happen without exception. It is the case below:

(21)	VR	PR after rule (20)	Gloss
	(i) /ne-na-oka/	nenɔka	'I have come'

UR	PR after Rule (20)	Gloss
/ne-ya-ɔma/	[nej ɔ̃ ma]	"it has dried"
/ne-ma-ɔna/	[nem ɔ̃ na]	"they have seen"
/ne-wa-ɔnga/	[new ɔ̃ ŋga]	"he has sucked"

Rule (20) applies to (22) although historically had a consonant.

(22)

UR	PR	Gloss
(i) /ne-wa-uwa/	[new ɔ̃ wa]	"he has bought
(ii) /ne-wa-ua/	new ɔ̃ ua	"he has cooked"

Historically, these were

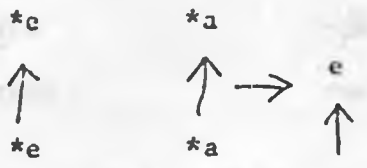
(22) (i) *newaɣua - "he has bought"
(ii) *newaʒua - "he has cooked"

Although we cannot at present give more data in support of our claim, we are sure further investigation would provide more examples. The cases in (22) are mainly attested in Kitui.

The fact that rule (20) applies to (22) is further proof to show that, the lexical items have undergone restructuring. This is due to deletion and the subsequent loss of the consonants /l/ and / /. It is further proof that rule (9) is a diachronic rule. This rule applied through all the dialects of Kikamba.

The loss of a sound and subsequent restructuring has been attested in other languages. For instance Rottland (personal communication) pointed out to us that Kalenjin had a historical shift *e a which occurred in all languages which have lost

*e (Markweta, Elgon branch, Pokot). The shift disrupted the harmonic alternation *e ⟶ *e and called for either morphologization or restructuring of the harmony system. If morphologization had occurred, stems with /a/ derived from *e would still alternate with /e/ whereas stems with /a/ derived from *a would alternate with /a/. But none of the languages concerned did this. Instead, two ways of restructuring can be observed. In Markweta, /a/ derived from *e has entered the same harmony relations as inherited /a/ i.e., it alternates with /a/.



(c.f. Rottland. "Vowel harmony in southern Nilotic." Seminar Paper on 19th March 1980.)

*KeR "to milk" ⟶ /Kar kar/
*Cam "to love" ⟶ /cam cam/

The Elgon branch /a/ derived from *e has retained its relationship with /e/ and bt analogy, inherited /a/ has given up its relationship with /a/ and now alternates equally with *e.

*KeR "to milk" ⟶ /Kay key/
*Cam "to love" ⟶ /cam cem/

We want to strengthen our claim; any historical sound loss leads to restructuring of lexical items in the minds of speakers generations later. Such speakers are not aware of the former forms and therefore positing a VR with the lost sound in synchronic grammar is both wrong and unnatural.

/l/ has been lost intervocalically in Kiswahili in the dialect spoken in Eastern Zaire. Presently we cannot give many examples, but the one below will serve the purpose.

Standard Swahili	KiUngwana	Gloss
Kuzaa	kuzala	'to bear'

There are also other cases of weakening in related languages, for example, Cifundi among others has weakened /t/ /r/

Standard Swahili		
-pita	-βira	'send'
-mtoto	-mrɔrɔ	'child'

So weakening is a widely attested process in Bantu. Kikamba has only gone further in that, it deleted and lost quite a number of consonants, but weakening is not unique to Kikamba. It has deleted and lost not only laterals but other consonants as examples later in our discussion will show.

2.2.0. /ɣ/ Loss

Having discussed synchronic /l/ deletion and subsequent loss in all dialects of Kikamba, we move to another sound change due to loss. The loss of this sound just as the loss of /l/ is due to weakening. We mentioned before the tendency of Kikamba to weaken most of the sounds. Other Bantu languages have done this. Most of the dialects of Kiswahili have weakened /l/ to zero as shown in (2.1.0). Some dialects of Gikuyu have weakened P ⟶ h; (cf. Mutahi 1977). /P/ in Kikamba has weakened to /β/ a bilabial fricative. This bilabial fricative has weakened

further intervocalically to zero.

(25) PB	Kikamba	Kiswahili	Gikikuyu
"Here"*Papa	βaa	hapa	haha

*Another phonetic environment where losses are possible is word-final position. Speakers fail to hear some sounds well when they are in this position. The reason is that speakers do not pronounce such sounds or segments audibly enough to be heard clearly. Deletions of such final segments may be due to social reasons. It may result from speech imitations. In some cases speakers of lower classes try to imitate speech forms of socially higher speakers. If such imitation is widely spread, it may cause restructuring of the affected lexical items. In this case a sound change will have taken place (cf. Hall (1967: 315) Hall made a similar observation concerning sound changes in Latin. He says, popular Latin lost /-m/ in the final position. This was due to upper-class speakers influence. These speakers had a habit of substituting a nasalized vocoid in final position for vocoid + -m as in /dominum/ dominu "master". Other speakers hearing the nasalization did not interpret it as involving an allophone of /-m/ but equated a nasalized final vowels and imitated dominu with their own dominu which was of course, phonetically dominu .

The loss of Kikamba /ɣ/ is of the former type. It is a result of weakening, just like the deletion of /l/. The weakening of /ɣ/ is of two different types; the intervocalic elision and the weakening to a glide /j/ syllable initial or to put it in another way, when it is a class marker in the prefix

position.

The only dialect of Kikamba which has retained /ɣ/ is the one spoken in Kitui north. Data from this dialect advances our claim that /ɣ/ represents a proto-Kikamba sound, which has been weakened in most of Kikamba dialects.

(26)

Kitui North Forms	Standard Kikamba forms	Gikuyu	Gloss
[maɣɛɔ]	[maɛ ɔ]	[maɣɛɣɔ]	"teeth"
[maɣoo]	[maoo]	[màɣoro]	"feet"
[mbɔɣɔ]	[mbɔ:ɔ]	[mbɔɣɔ]	"buffalo"
[koɣoa]	[kooa]	[kuɣora]	"to buy"
[koɣua]	[kɔua]	[kOruɣa]	"to cook"

The other dialects have the same forms as standard Kikamba.

On the basis of existence of /ɣ/ in one of the dialects, we can reconstruct */ɣ/ as a proto-Kikamba sound. This is strengthened by its existence in the related language i.e. Kikuyu.

Some people may suggest that, Kitui north dialect borrowed the sound from neighbouring related languages. We have two arguments against such a claim. Languages have a tendency of not reborrowing sounds once lost. Therefore it is not very likely that this dialect reborrowed the sound. Secondly, if reborrowing is possible, then standard Kikamba should have reborrowed the sound. Speakers of the standard dialect have interacted with the Gikuyu speakers from Murang'a and Kiambu for many years. Their children go to school together at the boarder areas. Since children's grammars are in the process

of being formed, then they should have re-borrowed this sound easily. Our research showed no such a case. Therefore we can only suggest that /ɣ/ is a proto-Kikamba sound. Its existence in Kitui north dialect is a case of sound retention and its absence in some environment in the other dialects constitutes sound loss. Our data in (26) shows /ɣ/ was lost in the intervocalic environment in all other dialects except Kitui north.

(27) $$\begin{bmatrix} +\text{ continuant} \\ +\text{ voice} \\ +\text{ velar} \end{bmatrix} > \emptyset \;/\; V - V$$

The loss has also happened in Kitui north in some cases. If we can take the Gikuyu forms (cf. 26) to represent earlier forms, we shall notice that in lexical items with two /ɣ/s, the second has been lost in Kitui north. It will be noticed in due course that Kitui north dialect is conservative in that it has retained majority of proto-Kikamba sounds. This is in keeping with a principle in dialect geography, that proposes an innovative area, which is said to be the cultural centre and the marginal or isolated areas, supposed to be conservative (cf. chapter 4).

The other weakening of /ɣ/ is attested below.

(18)	Kitui North Forms	Standard Kikamba Forms	Gloss
(i)	[ɣiɛmbɛɣeu]	[jeɛmbɛ jeu]	'a ripe mango'
(ii)	[ɣja ɲama]	[ja ɲama]	'eat meat'
(iii)	[ɣeu ɣjakɛ]	[jeu jakɛ]	'the one which is his'

	Kitui North Forms	Standard Kikamba Forms	Gloss
(iv)	[weɣɔɔ]	[wejɔɔ]	'evening'
(v)	[eɣɔɔ]	[ijɔɔ]	'yesterday'

The data (28) would tempt one to suggest the weakening of /ɣ/ to a glide in syllable initial, as we had suggested earlier in this chapter. This was before we discovered (28 iv. and v.) which show /ɣ/ intervocalically. The way we propose to solve this problem is by suggesting /ɣ/ loss and then glide-epenthesis (cf. 17). We showed the loss of consonants led to relexicalization hence restructuring of lexical items. Rules (9) and (27) made it possible for rule (17) to apply. What it means is that all dialects of Kikamba except Kitui north lost /ɣ/ in all environments. The loss of /ɣ/ was therefore free of any environmental conditioning. The speakers who had no /ɣ/ in their speech had their lexical items relexicalized. The vowel series that resulted satisfied the SD of rule (17) hence the application of the rule. With time, these speakers did not see the glide as the result of rule (17) but as a basic sound in the words.

2.3.0 The Surface Vowel Series.

Our discussion has shown that the surface vowels in Kikamba are of two types. The surface vowels that resulted from rules (9) and (27). These are the vowels which were called immutable (cf. Farnsworth 1957) Whiteley 1962 stable vowels. We have shown in our discussions, that these vowels do

not remain 'immutable' or 'stable' as these scholars thought. The two terms meant that, these vowels did not participate in the phonological process of coalescence. To this, we have added palatalization, glide formation and labialization.

However, our discussions have shown that with time, speakers have forgotten derivation of these vowels and have began to treat them like the other type of vowels. This happened, when the lexical items in which consonant elisions had taken place underwent relexicalization. Such lexical items had no underlying consonants and therefore the speakers had no knowledge of their earlier existence. Historical sound changes had taken place.

The other type of vowels, was called "unstable" and 'mutable'. The terms like the former ones, were based on the fact that they participated in the process or caused coalescence. These are the vowels not derived from consonantal loss historically or synchronically.

To sum it up, Kikamba has seven vowels

i u

e o

ɛ ɔ

a

with corresponding long ones for each. At the surface representation, vowels may follow one another up to as many as four. Some of the vowels will have come from historical loss

of consonants as shown earlier. This is why Kikamba looks like a language of vowels and therefore difficult to learn.

In our next chapter, we shall discuss more sound changes and show that some of them are elisions, hence add more surface vowels to the structure of the language.

CHAPTER III

3.0.0. In this chapter we shall discuss a number of other sound changes in Kikamba. In the last chapter we discussed only two sounds, /l/ and /ɣ/. These are not the only sounds which have undergone changes in this language. We discussed the two together in that chapter because they have a lot in common. Both have been lost in the language and their loss has caused relexicalization. The two are mainly lost intervocalically and were continuants. In the following discussion we examine more diverse sound changes. These range from phonological sound changes to changes caused by analogy. As in the previous chapter, synchronic data are used for comparison in attempt to reconstruct proto-Kikamba sounds. Unlike chapter (2), we have noticed morphological cases which have motivated analogical extension. This has made us devote a section to discussion on the role of analogy in Kikamba sound changes.

The chapter will be divided into two main parts. Part (3.1) will be devoted to non-analogical sound changes. The relevant sound changes are investigated and explained in a number of ways thought to be the most fitting.

(ii) The change of the voiceless dental fricative /θ/ to /z/ after /n/ in Kitui dialects and to /ʒ/ in the dialects of Machakos will be discussed. Discussions - through illustrative examples will follow (3.1.1.).

(iii) The weakening of the lateral /l/ to glide /j/ in the demonstratives will also be discussed. This change which has

been motivated morphologically has taken place in the dialects of Machakos. Some speakers of Kilungu however, have retained the proto-sound /l/; for instance they say /va:la/ over there where the speakers of the standard dialect say /va:ja/.

(iii) The change of */ts/ to /s/; this proto-sound is only attested in Kitui north and the change occurs in all the other dialects.

(iv) The different developments of /ki-/ and /si-/. /ki-/ has developed into an affricate /tʃ -/ in Kilungu. It is used morphologically as a marker of both singular and plural. /si-/ has palatalized to /sy-/ in the other dialects and is used as a morpheme to mark plurality in these dialects. It is also used medially as a distinct phonological sound. In all these cases, it corresponds to Kilungu /tʃ -/. The other dialects have /tʃ -/ as a morpheme to mark singularity. It is only limited to this morphological use and is therefore not used like a phonological sound as it is the case with /sj-/ in these dialects.

(v) The palatal nasal */ɲ/ has changed into a dental nasal: A change from a marked sound to another marked one. This has happened only in the two dialects of Machakos.

Part 3.2. attempts to discuss the role of analogy in sound changes in this language. Due to morphological interpretations, some changes have taken place in the absence of phonological motivation. For example the surfacing of /-b-/, /z/ in the environment after a nasal and only from a vowel could not

have been motivated by any phonological factor.

N + V→NCV as in

N+inge	mbinge	'many'
N+io	nzio	'black'

The nasal in this case marks class 9/10. It is part of the concordial agreement marker system in bantu languages.

The second case of sound change due to analogy, is the epenthesis of the lateral in classes 12/13 and 5/6. /L/ is inserted between /V-V/ regardless of the nature of the consonant lost. We also discuss the generalization of the first person negative marker into the other persons and its further generalization in the dialects of Kitui.

3.1.1. The Change of proto-dental fricative */θ/

Kikamba has the voiceless dental fricative but not its voiced counterpart. Hitherto, some scholars have claimed that the voiced dental fricative is the one in the sound inventory of the language. Such scholars are Ford (1975) and Bennett (1967). We think, these scholars were influenced by the sound systems of the neighbouring and related languages. For instance, Bennett (1967, pp.143) gives the sound along with its equivalents in these related languages. He shows the sound to have come from proto-Bantu *t. If it is true that the sound originated from proto-Bantu *t, then how did it become voiced in Kikamba? The tendency in this language is to devoice voiced sounds. It is possible that it came into the language just as did the only other voiced fricative /β/,

which although would constitute a sound argument, research would prove wrong. The native speakers, pronounce the voiceless fricative. It only becomes voiced after a nasal. This is perhaps, the reason speakers of Kitui dialects make it alveolar and voice it to /z/ in the same environment. They also voice the other alveolar fricative /-s/ in the same environment.

The change of /θ/ to /-z/ after a nasal in Kitui, constitutes the major dialectal difference existing between Kikamba speakers in their two home districts. It can be used effectively to tell who comes from where. If there were no other dialectal sound variations one could, on the basis of this variation, classify the language as having only two dialects; those of Kitui and Machakos. Then an isoglos would be drawn using rule (32) below.

(31.)	Derived forms	Machakos forms	Kitui forms	Gloss
	[kaθila]	[nʒia]	[nzia]	'gazelle'
	[kaθe]	[nʒe]	[nze]	'land or earth'
	[kaθwajia]	[nʒwajia]	[nzwajia]	'buck'
	[kaθɛŋgɛ]	[nʒɛŋgɛ] same	[nzɛŋgɛ]	'he goat'
	[θoka]	[nʒoka]	[nzoka]	'ugly person'
	[θata]	[nʃata]	[nzata]	'barren person'
	[θamba]	[nʃambei]	[nzambei]	'swimmer'

From these data (31) we can write rule (32a).

(32) a.

$$\begin{bmatrix} c \\ +\text{continuant} \\ +\text{dental} \\ -\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{voice} \\ +\text{alveolar} \end{bmatrix} \Big/ \begin{bmatrix} +\text{nasal} \\ +\text{alveolar} \end{bmatrix} \_$$

θ ⟶ z / n-

Rule (32) only applied in Kitui. In Machakos the change can be explained by use of rule (32b).

(32b)
$$\begin{bmatrix} +\text{continuant} \\ +\text{dental} \\ -\text{voice} \end{bmatrix} \longrightarrow [+\text{voice}] \;/\; [+\text{nasal}]$$

$$\theta \longrightarrow ð \;/\; n-$$

There is no dialect which has the two rules alternating. The speakers of each dialect are only aware of the rule in their own dialect and the other rule sounds strange and foreign to them. If the output of rule (32a) is given to speakers of Machakos dialect, they will accept it as a possible Kikamba word and sometimes give their dialect's equivalent. They will however not accept it as a correct form and will claim that it is a mistake in Kitui. On the other hand, if a Kitui dialect speaker is given the Machakos forms in a long text and asked to read, he will read them in his own dialect. He will not be sensitive to /nð-/ sound combination and will read them as /nz-/. We want to treat such occurences as cases of sound substitution rather than productive phonological rules. That is, the Kitui speaker is aware of these sound correspondences and all he does is to substitute the sounds. The two dialectal sound variations therefore do not have a common UR from which they are derived differently, by the two different rules. The claim of such a common UR existing, would mean that the speakers are aware of the two rules and use them freely. We want to reject such an approach and regard the two dialects as

having relexicalized and therefore restructured their lexical items. But each dialect's derived form and the other form have a common morphological rule which changes the derived into theoother form. Therefore rules (32a and b) are only true in class 9/10 and are productive synchronic morphophonemic rules for each dialect. Viewed generally in the language they constitute diachronic rules because they have caused new conditioned sounds to develop from /θ/ in the two dialects. In this way, they have caused a dialect difference in the language and caused mergers in the dialect of Kitui between /s/ and /θ/ in the stated environment. Perhaps, /ʃ/ and /z/ were allophones in free variation in speech of speakers but later on each dialect adopted one allophone and used it in total absence of the other. In this way they ceased being allophones and become dialectal variants. At this stage each dialect restructured the lexical items totally excluding the "allophonic sound not adopted by it hence removing it completely from its grammar. However, the semantic relatedness of the new lexical forms was not lost. This makes it easier for the speakers of the two dialects, to substitute the dialectally varying sounds.

Bennett (1967) has shown /nʃ/ to be among Kikamba prenasalized clusters. It developed from proto-Bantu *nt. Deriving Kikamba /nʃ/ directly from proto-Bantu nt makes sense because /nt/ is attested in some of the closely related languages. What this means or we take this to mean is that */nt-/ can be reconstructed as a Thagicu sound.

Our discussion has shown that, the sound cluster /[illegible]/

is not found in the grammar of Kitui dialects. It is not possible therefore for this cluster to be in their speech although historically derived differently from the /θ/ sound. We argued that Kitui speakers have a tendency to substitute /nʒ/ with /nz-/ or the reverse but this is mainly word initial. When a lexical item has the cluster medially, the speakers find it difficult or unusual to substitute the sound. The following two lexical items represent the case.

(33)	Machakos Forms	Kitui Forms	Gloss
	/Waθanʒato/	/Jumamosi/	"Saturday or sixth day"
	/Omɔndɛ/	/suɔː/	"today or this day"

Due to the difficulties mentioned above, the majority of Kitui speakers chose to use completely different lexical items. The lexical items they use do not contain the sound cluster /nʒ/. The environment of the cluster in these words is not the usual one for the sound substitution, hence the reason for not doing it. This has led them to total replacement of the lexical items with new ones.

The first one (cf.33 i.) is a clear borrowing from Kiswahili while the second (cf. 33 i.) is a phrase. The phrase can be analysed into: sua 'day' but literally it means "the sun". /oo/ "this". The whole phrase reads: /sua oo/ 'this day' but due to vowel coalescence it contracts and changes into /suɔ:/

The two lexical items are used in Machakos but differently; /suɔ:/ is used together with /Omɔnʒe/ to

emphasise, "it is to-day but not any other day," although the frequency of its use is not very high. Kitui speakers took the phrase and gave it a specialized meaning. It is used to mean just "to-day". However, there are some speakers of Kitui dialects who use Machakos forms. But it should be noted that they are very few and are not frequent in their uses. Sometimes they use Machakos forms and others use the lexical items with /-ʒ/ replaced by /-z/. Two things are possible here; these represent relics of the proto-forms /nʒ as coming from *nt-/ or speakers of Kitui dialects are borrowing the lexical items from Machakos. But the environment in which the sound is, causes confusion among the speakers. This explains the occasional sound substitution. We propose the lexical borrowing which is a recent phenomenon, hence the unstable sound situation. When the situation becomes stable, the speakers are likely to settle for /nz-/ cluster, due to the /nz-/ cluster which is already there in the word-initial environment.

To support the recent borrowing alternative, we want to point out the following; the new forms are only found among speakers who have travelled outside their district and therefore mixed with the speakers of Machakos dialect. More so, the forms are mainly found among younger speakers living outside their district. One such speaker, admitted that, he only heard of /omonʒe/ as another word meaning "to-day" when he came across Machakos speakers. He said also, that he uses /suɔ:/ more often than /omonʒe/ and especially when he is in his home district.

We mentioned / / z/n- (cf. 32a) causing merger in Kitui. Since this merger occurs in the same morphological class (9/10), it is difficult to know the derivational history of /nz-/ in this class. The result of rule (32a) is the same as that of rule (34) below. This merger does not exist in Machakos, since rule (32a) is not in the speakers grammar. Rule (34) is a morphophonemic rule in that it is only attested in class 9/10.

(34)
$$\begin{bmatrix} c \\ +\text{continuant} \\ +\text{coronal} \\ +\text{Anterior} \\ -\text{voice} \\ -\text{dental} \end{bmatrix} \longrightarrow [+\text{voice}] \quad N\text{—}$$

$$S \longrightarrow z \quad / \quad n\text{—}$$

This rule applies in cases like (35).

(35)	class 12/13 forms	class 9/10 forms	Gloss
(i)	/Ka-samba/	/Nzamba/	"a cock"
	/Ka-scla	/Nzea/	"a way"
	/Ka-solo/	/Nzoo/	"cow-peas"

The result of applying rule (34) is /nz-/ which is the same as the one got by applying rule (32a). However rule (34) is general for the whole language while rule (32a) is only for Kitui dialects. The input is not the same although the output is. This is the reason for having a merger in Kitui but not in Machakos.

We have all along stressed that there is no need of positing a common UR for the two dialects. If we did we would be making a very abstract claim. The common underlying sound we would posit constitutes a proto-sound in respect to the sound system of the whole language. Another alternative would be ordering the rules so that rule (32b) applies after rule (32a). We would then explain the dialectal difference in terms of ordering the rules differently. The TGG approach would advocate this. Our discussion has shown this not to be correct and necessary also the SDS of the two rules are different.

3.1.2. The change of /L/ to /y/ in Machakos Dialects

The following words show variations of one sound in two different dialect areas. The sound variations are in the same environment and the lexical items have the same semantic value. The idea is to show which sound changed to which and how. The data is taken from two dialects of Kikamba. The two dialects taken, do not have alternations of the two forms for the chosen lexical items. The other dialect of Kitui has the two forms alternating and therefore we can not use it here. The Machakos dialect forms are representative for all the speakers in the district.

(36)	Kitui North	Machakos	Gloss	suggested Proto-proto-forms
	[keela]	[keeja]	"that one"	*/keela/
	[kaala]	[kaaja]	"that one small"	/kaala/
	[naela]	[naeja]	"and that one"	*/naela/
	[vaala]	[vaaja]	"other there"	*/vaala/

Our suggested Proto-forms clearly show that we consider the Kitui north as the proto-forms. Therefore it is the lateral which has changed into a glide. We consider this a plausible change. It is easier for a leteral to weaken into a glide.

The data below will confirm that the forms in (36) are demonstrative adjectives.

(37)

(i) Mondo ola on ɔ:kie "the man who came"

(ii) Ando ala maɛ̀vɔ "those men who are not there"

(iii) Ala ando tonɔ:niɛ "Those people we saw"

(iv) ŋɔmbɛ ila situ "the cattle which are ours".

(v) Keato kela neθɔ:a "The shoe which I will buy"

The relative pronouns underlined remain the same in all dialects. The /l/ in the /-la/ root does not become a glide. The root /l/ in (36) has however changed into a glide in Machakos. Therefore the rule governing the change in (36) is a morphophonemic rule. If it was a phonological rule of weakening it could affect all the /l/s of the root in (37). It should be noticed it is this root which is also used for demonstrative adjectives. This is done through syntactic styles; for example, the relative pronoun in (37v) "kela" which can be changed into /keeja/. Keatu keeja nauwa -'that shoe I have bought.' So the rule governing the changes in (36) will have to take into account the morphological information, the sounds to be affected are in demonstrative adjectives. The phonological process in the rule will be constrained by above information and

the change will exclude Kitui north dialect and some individual speakers in the other dialect in Kitui.

(38) $\begin{bmatrix} +\text{cons} \\ +\text{lateral} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{cons} \\ -\text{voc} \end{bmatrix} \; / \; \begin{bmatrix} -\text{cons} \\ +\text{voc} \end{bmatrix} \; \_ \; \begin{bmatrix} -\text{cons} \\ +\text{voc} \end{bmatrix}$

$*l \longrightarrow j \; / \; V\text{-}V$

To support the claim that it is the lateral and not the glide that has changed, we want to point out that /l/ is more widely spread in this environment that /j/. The spread of /l/ can be attested even in the dialects that have weakened it. The spread of /j/ is limited only to the demonstrative adjectives and not in all dialects. These distributions strengthen our claim of /l/ weakening to a glide /j/. It is therefore clear that the proto-sound for these demonstratives was /-l-/ which changed to /j/ in the most dialects of the language.

This change is not complete, especially in Kitui central. Forms with /l/ and /j/ alternate in speeches of people in this part of the district. One informant while uttering sentences like /sisya vaya/ "look over-there" and /keja/ "that one" (the Kitui north equivalents are /sisya vala/ and /keela/ respectively) also said /- naela -/ 'and that one'. The equivalent of this in Machakos would be /naeya/ from such alternation, we conclude that the change is still going on. Therefore of the two alternations, the speakers are not very sure which is "correct". Our conclusion is that they will settle for the one with the glide because the sound change has started in their speech. In this

case, the next generation, will pick that form as basic and have it in their grammar. This will be possible because the forms with /-j-/ are more widely used.

The lexical items in the demonstratives in Machakos should be considered to have undergone restructuring in the minds of the speakers. /L/ cannot be considered to be underlying and the /j/ surface forms to have been derived from it. This is because in these demonstratives there are no cases of /l/ surfacing anywhere. Should we posit /l/ as underlying synchronically we will be very abstract, what we shall have done, is to claim a historically earlier form still exists in the minds of the speakers. The fact that /l/ does not surface anywhere in this morphological class in Machakos, is a proof that such a claim will not only be too abstract but incorrect. Any theory that advocates such mechanism, does not make true claims about natural languages as known by the speakers themselves. It therefore fails in what it claims to do. Rule (38) is a morphophonemic rule in that if it is not constrained by morphological informations, it will give wrong out-put strings. It would delete for example the /l/s in the relative pronouns (cf. 37). The morphologically contrained rule (38) gives the correct forms as they are in the actual spoken language. This is what actually is in the grammar of the speakers of this dialect. NGG model provides the approach we have taken in solving our problem. Therefore, it is clear that NGG model makes the correct claim about the actual nature of natural language i.e. as spoken by speakers.

3.1.4. The Development of /tʃ -/ and /sʲ-/ from /Ki-V-/ and /siV/

The two sounds we are going to discuss here were not in the language originally. Their development has added two more sounds to hte inventory of this language. Each sound was represented (and it is the case where the development is not complete) by a consonant and a vowel. The vowel was a front high vowel and the two consonants were the velar voiceless stop /K/ and the voiceless alveolar spirant /s/.

The sounds came about through the process of palatalization caused by the high front vowel followed by another vowel. We think the two sounds development initially occured in all dialects of Kikamba and the fact that /sʲ-/ is not found in Kilungu is a recent development. Explanation for this recent development will be offered during our discussion. At the initial stages of development the change of K → Kʲ before a front vowel was a purely phonological process of palatalization, the same for s → sʲ in the same environment. Later generations did not regard the cases which had been palatalized as a result of productive rules of palatalization. The speakers now learned /kʲ-/ and /sʲ-/ as unity sounds independent of /Kia-/ and /sia/ as underlying forms. We can consider these speakers to have restructured the sounds. They knew and used forms with /kia-/ and /sia-/ as in /kiato/ and /siato/, and also /kʸama/ and /sʸana/. The existence of the two forms in the same environment made speakers regard the palatalized forms as sounds unrelated to /kia/ and /sʲ-/. The two sounds then were added to the language sound inventory. The words

having these sounds underwent relexacalization. They were restructured to have /Kʲ-/ and /sʲ-/ in their underlying forms. The sound /kʲ-/ was later affricated in the speeches of most of the speakers and a further change was brought about. The sound now is realized as an affricate /tʃ -/ as in

(39)		Plural (not in Kilungu)
(i) /tʃ ama/	"a party or style"	/sʲama/
(ii) /tʃ amb ɔ/	"peg or pneumonia"	/sʲamb ɔ/
(iii) /tʃ ai/	"tea"	/sʲai/
(iv) /tʃ aŋ ga/	"cassava plant"	/sʲa ŋ ga/
(v) /tʃ umwa/	"a week"	/sʲumwa/
(vi) /tʃ ɔɔ/	"a lavatory"	/sʲɔɔ/

However, the following lexical items have retained /kia/ and /sia/ sounds.

(40)			
(i) /kiato/	'a shoe'	/siatɔ/	
(ii) /Keatɔ/	'a type of millipede'	/sia tʃ ɔ/	kl[a] tʃ
(iii) /keaŋgɔ/	'the roof - the inside part'	/siaŋgɔ/	
(iv) /keanda/	'a treasure'	/sianda/	

NB: The /ɛ-/ after /K/ is due to partial coalescence of (i+a). It can be seen to surface after /s-/. What (39) and (40) are meant to show is that new sounds developed from /K-/ and /s-/ before high vowels but not in all cases since /k/ and /s/ still appear in the same environment. It was only after palatalization that the sounds stopped being the allophones of /K-/ and /s-/ and became phonemes. This is a case of phonemic splitting,

which created completely new sounds in the language.

The second part of the development of these two sounds was morphophonemic. There are two ways this development can be looked at;

First, we may take that somehow, Kilungu lost the sound /sʃ-/ historically. The loss could have started intervocalically as a process of weakening or it could be part of dissimilation which took place in this dialect (cf. 3.4). The latter is the most likely because it is attested in the dialect. Assuming this was the case, we see that most of the deletion due to this kind of dissimilation is word initial. This happens to be the position in the word at which morphemes marking number are affixed in Kikamba. The singular morpheme is /tʃ / in the lexical items which had /Ki-/ as the singular marking morpheme and which has since undergone phonemization. The plural is /sʃ-/ in the other dialects of Kikamba. Assuming there were cases where the /sʃ-/ supposed to mark plurality was missing, the speakers could have extended the singular morpheme /tʃ -/ to these cases. The reason being that /tʃ -/ was a number marking morpheme and since there was none in the said environment, then /tʃ -/ could do. Later on /tʃ -/ was taken to mark both plurality and singularity. Since /tʃ -/ had replaced /sʃ-/ as a plural marker, it was wrongly interpreted as a substitute for all occurences of /sʃ-/ in the dialect regardless of the environment. So by analogical extension, /sʃ-/ was lost in the dialect of Kilungu and therefore it is not in the speakers synchronic grammar. This explains why a speaker of Kilungu

dialect reads /tʃ-/ instead of /sʲ-/ in a written text of standard Kikamba. He has this interference or substitution rule

(41) /sʲ-/ ⟶ /tʃ-/

Rule (41) was the historical rule that caused the loss of /sʲ-/ in this dialect.

(42)	Other Dialects Plural Forms	Kilungu forms	Gloss
(i)	s^{y}ana s^{y}akɛ	tʃana tʃakɛ	"his children"
(ii)	siatɔ s^{y}akɛ	tʃatɔ tʃakɛ	"his shoes"
(iii)	s^{y}ambɔ s^{y}a kwamba	tʃ ambɔ tʃa kwamba	"pegs for spreading"
(iv)	s^{y}oma s^{y}aŋgale	tʃɔma tʃa ŋgalɛ	"Bars of a car"
(v)	s^{y}ɔɔ i:ja	tʃɔɔ i:ja	"those toilets"
(vi)	s^{y}ama mbiŋge	tʃama mbiŋge	"many parties"
(vii)	s^{y}ɔŋgɔ nɛnɛ	tʃɔŋgɔ nene	"big heads"
(viii)	s^{y}aa ndasa	tʃaa ndasa	"long fingers"

The other possibility is to suppose that Kikamba had only /tʃ-/ and /s^{y}-/ developed from it. The morphological reason would be due to the tendency of languages to have a one-form one-meaning relation. This could have caused the splitting of /tʃ-/ to /tʃ-/ for singular morpheme and /s^{y}-/ for plural morpheme, in the other dialects. In this case, then Kilungu would be an exception to this; hence a conservative dialect. Although the morphological motivation is quite sound there is no phonological plausibility for such a change.

We therefore propose the first explanation that, the morphological motivation given in the second suggestion

prevented the analogical extension in Kilungu from spreading to the other dialects. Then, the only changes that there were with respect to these sounds were; (1) The development of /tʃ-/ and /s^y-/ as new sounds from /k/ and /s/.

(2) The loss of /s^y-/ in Kilungu dialect due to morphological motivation. This started with the, /s^y-/ in the initial position and later spread to the same sound in other environments leading to total loss of the sound. But the analogical extension at work here, was prevented from spreading to the same forms in other dialects due to the morphological tendency of languages. Languages have a tendency to have one form for one meaning.

The sound and the changes are not restricted in one environment as (39) and (42) may suggest.

(43)	other dialect	Kilungu	Gloss
	[mbus^{y}a]	[mbutʃa]	'a rhino'
	[as^{y}a]	[atʃa]	'lose'
	[aos^{y}a]	[aotʃa]	'to consult a diviner'

The problem of the use of one form for two morphological functions in Kilungu is solved by the use of concordial agreement markers.

(44) (i) tʃuma tʃakɛ neketilekilɛ (singular) "His iron bar is cut".

(ii) tʃuma tʃakɛ nitilekilɛ (Plur.) "His iron bars are cut"

Therefore, if such words are used in isolation one cannot determine whether they are plural or singular. *This is not a

unique phenomenon of this dialect. Other languages have the same problems. Mr. Muhindi, a fellow student (personal communication) provided examples of the same phenomenon in the Murang'a dialect of central Kenya language group.

(45)	singular forms	plural forms	Gloss
(i)	ʃuma enɔ jakɛ	ʃuma iʃine ʃiakɛ	"These iron bare his."
(ii)	ʃɔrɔ ojorɛwakɛ	ʃɔrɔ iʃine iakɛ	"These are his trumpets"

This dialect of Gikuyu, distinguishes singularity from plurality by use of the concordial agreement in the adjective. It is true therefore that not all languages have achieved the one form one meaning morphological goal.

3.1.4 The deletion of alveolar consonant in the first syllable, if two or more syllables consisting of alveolar sounds follow one another

This happens only in Kilungu. Before we discuss the mechanism through which it happened, we examine, a similar rule in proto-Bantu - pB - had a rule that deleted the high front vowel /i/ after an alveolar nasal. The two sounds articulate at the same point, the alveolar ridge. The motivation for it is assimilation. The tongue begins its movement from alveolar ridge and the velum is down. To produce /i/ the tip of the tongue has to be lowered a little so as not to be in contact with the ridge to allow for free flow of air. This is the condition necessary to produce vowels. At the same time, the velum has to be raised before this is finished so as to produce a nasal. Since the two sounds articulate simultaneously at

this point, the nasal comes out in exclusion of the vowel. Hence the elision of the /i/. This is what happened in the historical change of the elision of /i/ in this environment in

elision of /i/ in this environment in Bantu.

In Kilungu, the opposite happened. The consonant co-articulating with the front vowel was lost. However more was involved than the Bantu loss of the nasal. Unlike the bantu case, in Kilungu neutral activity was involved. The deletion was not caused by the fact that it was followed by a high front vowel, but because it appeared in a syllable before another syllable with similar sounds. Similar in that it was an alveolar sound. The dialect does not have consecutive syllables with alveolar sounds. If this happens, the alveolar consonant in the first syllable will be lost or elited.

(46)	other dialects Forms	Kilungu Forms	Gloss
(i)	/sis^{y}a/	/it∫a/	'look'
(ii)	/tinda/	/inda/	'remain'
(iii)	/kanini/	/kaini/	'small'

but

(47)			
(47)	(i)	/nɛnɛ/	/nɛnɛ/ 'big'
	(ii)	/mutɔndɔ/	/mutɔndɔ/ 'mud'
	(iii)	/Tanda/	/tanda/ 'spread'

A comparison between (46) and (47) will show that it is only (46) that undergoes this change. The motivation as we see it, is to make the first sound unlike the following like ones.

but instead of the whole syllable getting lost, only the consonant is lost. Since the motivation is to make the sound more unlike the others, we want to propose this as the only case of dissimilation in Kikamba. Bennett (1967) suggested that the only case of dissimilation in Kikamba was that of /mauta/ "oil" which had come from /maɣuta/, but the loss of /ɣ/ in Kikamba is a general change (cf.2.2) so we regard this example as wrong for dissimilation. Lehmann (1962:169) suggests that hyplology sometimes can be regarded as a case of dissimilation, if the loss makes two consecutive similar sounds more unlike one another. Gikuyu dissimilation is restricted to the velar voiceless stop. Two voiceless velar stops do not follow one another in consecutive syllables, if they do, the first one is voiced. The word Gikuyu, the language is a good example.

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Rule (48) is part of the grammar of the speaker of Kilungu. It is also diachronic rule in that wherever the other dialects have the consecutive syllables, with all the sounds present, Kilungu speakers delete the first sound. But one thing must be added here; the two consonantal sounds must be identical or nearly so. For example rule (48) will only apply if the sound following /t/ is either /t/ or /nd/ or if after /s/ the following sound is either /s/,or /tʃ-/ which is the equivalent of the historical /sʲ-/. One of the reasons which for regarding rule (48) as a historical rule. Sometimes rule (43) fails to apply if the Bantu vowel deletion has occured. This is the case

where a speaker does not have /i/ after /n/. The result would be /ne- tindiɛ vaa/ 'I have delayed here' being realized as " ndindiɛ vaa" instead of "neindie vaa". Other examples.

(49) (i) ne-siʧɛ tʃao is realized nziʧɛ tʃao.
instead of "neiʧɛ tʃao "I look at what.

The two sounds seem to be in competition. In such circumstances or to such speakers, therefore, the change is not complete and hence the confusion. The majority of the speakers however have gone through this stage, and do not alternate the two forms. Rule (48) has completely applied and created the forms without the first alveolar sound as stated. But as the case is rule (48) will change all the remaining forms through analogical extension. The point of reference for the analogical extension will be the forms already created through the application of (48) hence paradigm pressure.

3.1.5. The change of proto-Kikamba */ɲ/ to n:

The proto-Kikamba /ɲ/ has changed into the dental /n̪/ nasal in the two dialects of Machakos. Such a change is unusual because, it constitutes a change from marked to a marked form. Universally languages have changed alveolar nasals into a palatal nasal. This is done under the influence of the front high vowels, a very common phonetic process. The Machakos dialects, though have changed the palatal nasal into a dental nasal. This is done through (50) applying to (51).

(50) C

$$\begin{bmatrix} +\text{nasal} \\ +\text{palatal} \end{bmatrix} > [+\text{dental}]$$

*ɲ > n̪

Rule (50) is a historical rule for the dialects of Machakos as /ɲ/ does not appear in any speech forms of these dialects. It would sound very unnatural to speakers here.

(51)	Kitui forms	Machakos Forms	Suggested Proto-forms	Gloss
	[ɲama]	[ɲama]	*/ɲama/	'meat'
	[ɲaɲa]	[ɲaɲa]	*/ɲaɲa/	'eight'
	[ɲomba]	[ɲomba]	*/ɲomba/	'house'
	[ɲoɲi]	[ɲoni]	*/ɲoɲi/	'bird'
	[ɲóɲi]	[ɲóní]	*/ɲóɲi/	'green vegetabl vegetables'
	[ɲoŋgo]	[ɲoŋgo]	*/ɲoŋgo/	'a pot'

The proto-nasal has been retained in the dialects of Kitui but completely changed in Machakos dialects. The question is: what motivated the sound change. As far as we can see, it is a change whose motivation we cannot explain. But yet the same sound change has been attested in other Bantu languages of East Africa.

Dr. Mould (personal communication, but c.f. also Mould 1976) has told me of existence of the same sound change in Busoga and Llogoli. We do not want to treat the sound as borrowed into the Kitui dialects because; the sound is found in many languages initially developed through the process of palatalization. Later the sound split completely from /n/ and stopped being an allophone of /n/. There is no good reason for this not to have happened in Kikamba, especially when we know Kikamba developed other sounds like /tʃ-/ and /sy-/ through the same process.

Secondly, the speakers of "standard Kikamba" live along with the speakers of related languages which have the sound. But the sound is not found in the speech of speakers here. We can only conclude that the proto-Kikamba */ɲ/ existed and was changed to /n/ in the dialects of Machakos through rule /50/.

3.1.6. The change of /ts-/ to /s/ in all dialects of Kikamba except Kitui north.

The change of /ts/ /s/ is a weakening process, it is a natural change which is widely attested in Kikamba and other languages. We have discussed many changes which were triggered by the need to weaken the sounds (cf. 2.1.0, 2.2.0, 3.1.2.) in this language, therefore our present discussion just adds to this. This is the reason why this language has quite a few stops; for example, of the plosives it has only /t/ and /k/.

The change from */ts/ to /s/ is diachronic which occured without conditioning environment. Our data below will show this.

(52)	Kitui North Forms	Other dialect Forms	Suggested Proto forms	Gloss
(i)	[mbɛtsa]	[mbɛtsa]	*/mbɛtsa/	'money'
(ii)	[tsama]	[sama]	*/tsama/	'taste'
(iii)	[katsɛ]	[kasɛ]	*/katsɛ/	Name of a place in Kitui
(iv)	[kotsimba]	[kosimba]	*/kotsimba/	'to dig'bean
(v)	[mbɔtsɔ]	[mbɔsɔ]	*/mbɔtsɔ/	'beans'
(vi)	[katsela]	[kasela]	*/katsela/	'small paths'

The distribution of the sound in the lexical items suggests

that the environmental condition that caused the change is lost or there was none. On the basis of the synchronic evidence, we suggest that the historical change was unconditioned, but we do not rule out the possibility of a conditioning environment. It is possible for the weakening to have began initial syllable, if the syllable appeared or coincided with word final. Alternatively it could have started intervocalically. If it started in one of the two suggested positions, analogy could have extended it to other word positions. Eventually, the change would affect all cases of /ts-/ in the other dialects, hence the present sound change. We want to propose weakening as the general process in the language. This general tendency is not pronounced in the Kitui north dialect which we have suggested is conservative. We have reconstructed Kitui north forms as proto-forms. Rule (53) below constitutes the diachronic rule which brought about the attested change.

(53) /ts/ > /s/

This only failed to apply in Kitui north, but one interesting thing happened in Kitui central. It seems that at one stage ts→t but later was weakened to /s/. However more research is needed before this claim can be emphatically made. We only found one case where the 'standard Kikamba' form 'soβa' bottle was realized as /toβa/. We suspected this to be the case because close related languages in the neighbourhood do not have /s/ instead they have / / as in

(54)	(i) Kikuyu		Kikamba
	(i) /ʃuβa/	'a bottle'	/soβa/
	(ii) /ʃɔmba/	'foreigners or whites'	/sɔmba/
	(iii) /ʃukari/	'sugar'	/sukali/

Although our suspicion could be wrong we believe there is some relation in the change shown.

Our point of discussion however was that the affricate /ts-/ was historically weakened to /s/ in all the dialects of Kikamba except Kitui north. We did not propose the reverse, because that would constitute strengthening. This will be hard to prove since the change is context free. In lack of conditioning factors, it would be difficult to argue for a type of change not generally attested in the language.

3.2.0. The role of analogy in Kikamba sound Change.

Analogy is a mode of reasoning based on abduction. Abduction is hypothetical inference in which the rule and the result are given and we infer the case. Abduction is an act of insight that comes to the mind in a flash. Since it is insightful, it is explanatory. This explains why the transformationalists in sixties (Kiparsky 1965, postal 1968, and King 1969) were wrong in rejecting analogy. Analogy is a mental process which is based on observation of some phenomena. Here we quote Antilla (1977:113):

"Once the mind starts to observe a uniformity or coherence among impressions, it tries to make it as perfect as possible. Repetition of any particular act produces a propensity to renew the same act. This propensity is the effect of custom or habit.

In analogy the mind observes some tendency of a particular element to behave in a certain way. In our case the element will be a sound segment. If the occurence behaviour

of the sound is frequent enough, it is taken to be the normal behaviour. At this stage an inference is drawn and a law formed. This law (formed by observing the habit of an item) will now apply without exception through generalization

We quote Antilla again to show how this works:

"Evolution is the product of habit and it is the only category that shows no exceptions and, thus here also, change is primary...Habit characterizes existence and gives it direction, it moulds chance into evolution, and spans the distance between chaos and order." Antilla (1977:113).

Therefore analogy works towards uniformity and order. It does not only affect sounds as will be discussed here, but irons out unnecessary lexical, morphological and syntactic alternations. It is a mechanism through which order is restored in language and maintained. It is therefore a creative aspect of language which cannot be left out when discussing natural sound changes in language. It is involved in almost every kind of language change, be it phonological, morphological or syntactic. In many cases it offers explanations when phonological or other language processes cannot. We consider any attempt to ignore analogy as a mechanism of language change as an attempt to reduce linguistics to a mere descriptive science. In this way it will largely lose its explanatory function and therefore fail in one of its most important objectives.

Linguistic scholars have shown that not all changes

all changes are rule-governed. This means, we cannot always give phonological motivations for all the changes we encounter in studying languages. Thus most linguists acknowledge the role of analogy as we have exemplified above.

In our study, we came across three sound changes, whose motivations, were not phonological. According to our findings, the initial motivation was morphological considerations. The speakers noticed certain regularities in certain morphological classes, then by the process of abduction it was inferred that all lexical items must behave that way. Any exception to it was regarded as a disorder in the language and accordingly ironed out. Cases of this kind are exemplified below.

3.2.1 The Generalization of /Mb-/ as the concordial class Marker for classes 10 and 8

The two classes have one thing in common - they are plural marking classes. The class markers for 9/10 are both represented as /N-/; but class 10 marks plural. There are other classes, other than 9, which take class 10 as their plural. Other derived lexical items when changed to nouns, are placed in this class (9/10). Example /ɵoka/ "be ugly or bad" /nʒoka/ 'an ugly person.' Class (9/10) has another semantic connotation, it implies maturity or a state of being grown-up especially for animals. Example:

(55)	12/13		9/10	
(i)	/ka-tolomɛ/	'a small ram'	/ndo:mɛ/	'a ram'
(ii)	/ka-salo/	'a young or small bull'	/nzao/	'a big or mature bull'
(iii)	/ka-samba/	'a young or small cock'	/nzamba/	'a big or mature cock'

The above class (9) forms are also the plurals. The initial sounds of the lexical item roots are voiced after the nasal class marker.

(56)	Class 12 Forms	Class 9/10 Forms	Gloss
(i)	/Ka-βɔsɔ/	[mbɔsɔ]	'beans'
(ii)	/Ka-βwalo/	[mbwao]	'timber'
(iii)	/Ka-βula/	[mbua]	'rain'
(iv)	/Ka-salo/	[nzao]	'bull'
(v)	/Ka-βjo/	[mbjo]	'knife'
(vi)	/Ka-soma/	[nzoma]	'club'
(vii)	/Ka-soka/	[nzoka]	'a snake'

A person looking at the above forms is likely to come up with the conclusion that /mb-/ and /nz-/ mark this class but not /N-/ as suggested by linguists. One will be even more tempted to do so when he examines the adjectives that modify them.

(57)	Nouns	Adjectives	Gloss
	mbɔsɔ	mbiŋge	'a lot of beans'
	mbui	nzau	'a white goat'
	mbwao	mbailu	'suitable timber'
	mbua	mbiŋge	'a lot of rain'
	nzao	nzio	'a black bull'
	mbjo	mbiŋge	'many knives'
	nzoma	nzio	'a black club'
	nzɔka	mbiŋge	'many snakes'

One would think the class markers are simply copied from

the noun not as /N-/ but as /mb-/. We know the root forms of the adjectives, which are either /VCV/ or /VV/. (cf. below).

(58)	Nouns	Adjectives	Gloss
(i)	Andu	a-iʃge	'many people'
(ii)	mavia	ma-iŋge	'many stones'
(iii)	kiato	tʃ-ɛɛ	'a white shoe'
(iv)	Ka- uku	ka-io	'a black book'
(v)	ŋɲmbe	n-dunɛ /-tun / (root)	'a red cow

Our examples show that the noun prefix marker is copied to the adjective. The form in (58v) shows that in cases where the adjective root has a consonant only the /N-/ class marker is copied or rather affixed to the adjective. We can then argue that the number attributes of the noun are copied to the adjective. In Bantu, these attributes are marked by the class prefix. Therefore the affixing of /mb-/ to the root of the adjective means that, a speaker has interpreted the /mb-/ as the class marker. The mental impression is that /mb-/ is the class marker and therefore it has to be copied or affixed to the root of the adjective. He however, sees that this is only true with adjective roots without an initial consonant. He further adds that, the root must have another consonant in it. In this case he draws a difference between the roots with /VV/ and those with /VV/ take /nz-/. The same is done in plural formation for nouns with the same structure and forming it from class 10. Example /ose/ river becomes /mbθse/ rivers. Other examples:

(59)

	singular		plural	gloss
(i)	/ose/	'river'	/mbose/	'rivers'
(ii)	/oke/	'beer'	/mboke/	'beers'
(iii)	/ua/	'calabash'	/nzua/	'calabashes'

There are many words which form their plurals in this way. Further investigation shows that /mb-/ before /-vc/ stems are used in words of class 11. This class used to have /l-/ in proto-Bantu as the consonant prefix class marker but Kikamba and many other Bantu languages have since lost it. For example /ose/ is reconstructed as */lose/ in Proto-Bantu. Therefore, a claim that the surfacing of /-b/ is a resurfacing of a */-b/ which had been lost and therefore /-b/ is in such words underlyingly is a wrong general claim. We shall prove the statement later on, in our discussion.

We consider the examples below as a factor which strengthened the analogizing of /mb-/ as a class marker for class 10.

(60)

	Underlying forms for adjectives	Surface forms	Gloss
(i)	/mbɔsɔ N- jia/	[mbɔsɔ mbjɛ]	'cooked beans'
(ii)	/nyumba N- aloka/	[ɲɔmba mbaloku]	'a fallen house'
(ii)	mbiso N-βeβia	[mbisu mbeβjɛ]	'a roasted pot'

The data above shows how the fricative of the adjective assimilates the nasal class marker. The appearance of /mb-/ in adjectives, which is phonologically motivated, strengethens the analogical extension of class 10 prefix (cf. 57) to the /-VCV/

adjective stems. The class marker for this class was re-interpreted in this case as /mb-/ instead of the original /N-/.

The reanalysing of the class 9/10 prefix marker as /NC-/ before adjectives with stem initial vowels, did not affect /mb-/ alone. There are examples showing that it was the case with other nasal clusters as well. We want to discuss /nz-/ which has also been copied as class 9/10 concordial marker in /VV/ stem adjectives.

3.2.2. Analogical extension as class 9/10 prefix

We shall only add, through examples, more discussions to a general process as exemplified in (3.2.1.). When discussing the development of /mb-/ as a prefix marking class 9/10 in /VCC/ stems, we have given an example involving /nz-/ (cf.57) We have also mentioned the occurences of /nz-/ before /vv/ adjective stems. We only want to exemplify and prove the case : we use two adjective /-io/ "black" /ao/ "white"

(61a)	Noun in class 9/10	Adjectives N-io "Black" (1) UR	(2) PR	Gloss
(i)	mboi	N-io	[nz-io]	"black goat"
(ii)	mboko	N-io	[nz-io]	"black rabbit"
(iii)	gete	N-io	[nz-io]	"black dog"
(iv)	mbea	N-io	[nz-io]	"a black rat"
(v)	nɔ go	N-io	[nz-io]	"a black pot"
(vi)	gale	N-io	[nz-io]	"a black car"

(61b)	Noun in class 9/10	Adjectives /N-ao/ "white"	Gloss
(i)	mbai	N-ao [nz-ao]	'a white goat'
(ii)	goko	N-ao [nz-ao]	'a white chicken'
(iii)	nomba	N-ao [nz-ao]	'a white house'
(iv)	gale	N-ao [nz-ao]	'a white car'
(v)	mboko	N-ao [nz-ao]	'a white rabbit'

Our examples (61 a and b) show that the speaker does not consider (61 a b) as the adjective forms but (61 a b 2). In these forms there is a /-z/ epenthesis which is not phonetically motivated. The question is then; what motivates the epenthesis? If it is the copying of the noun prefix, then it could have been /mbio/ for all cases in (61a) and /mb-ao/ in (61b). Then, the only possible solution is to propose an analogical re-analysis of the adjective. It has been taken to be /nz-/ noun concordial marker. This analysis stemmed from morphological consideration or analysis. The adjective stems with /-VCV/ were interpreted as having /mb-/ as a noun concordial marker and /nz-/ a marker for adjectives with /VV/ stems.

We can tehn write the two morphological rules (62i) for adjectives stems with /VCV/

(62a) $\emptyset \longrightarrow$ /-b-/ N-VCV

and (62ii) for adjective stems with /VV/

(62b) $\emptyset \longrightarrow$ /-z-/ /N-VV

Where the rule refers to the noun prefix as a concordial

marker for class 9/10. We also showed this to be true for plural formation with singular words with the same structure (cf.59).

We want to make the following claims (i) Rule (62a,b) is a historical rule which created the present (synchronic) forms of this class of adjectives. The rules offer them explanations regarding the lack of phonetic motivation for the surfacing of consonants (N+V = mb or nz). (ii) The consonants which were lost in the environment before adjective stem vowel was not necessarily the one surfacing synchronically. Karega Mutahi (1977) showed that some dialect of southern Mount Kenya have /βiro/ as adjective for "black and /ɲjɛro/ for "white." We have shown that Kikamba has /nzio/ and /nzau/ respectively for the same adjectives. It is clear therefore /-z/, and /β/ or /j/ were not the original consonants in these lexical items.

The evidence we have gathered from Kikamba examples and strengthened by Gikuyu examples, makes us doubt the strength of Hinnebusch's (1974).
He claimed that the /-b/ or /-z/ that surface in such cases represent the lost Kikamba voiced /-b/ and /-z/; that the nasal motivates their appearance. The claim made here, is that the two sounds are underlying and therefore we can write a synchronic phonological rule like

(63) $\emptyset \longrightarrow \begin{bmatrix} b, \\ z \end{bmatrix} \Big/$ N-

We have however presented evidence that /-b/ in plural

forms for singular nouns with structure VCV (cf.59) represents or is in an environment which was historically /l-/. We have also shown how class 9/10 nouns with /mb-/ prefix have /nz-/ as concord markers in adjectives with /VV/ stems. The latter normally would have either /mb-/ in the adjective noun concord or have /nz-/ as a noun prefix. We have elsewhere, argued that the noun number attribute is copied to the adjective and in Bantu it should be the copying of the noun prefix to the adjective stem. The attribute would be either the prefix class marker in case where the adjective stem had a consonant initial or the nasal cluster in cases where the adjective stems had vowel-initial. The Gikuyu examples strengthen our claim that neither /-b/ or /-z/ was necessarily the historical consonants in these cases. In the synchronic Kikamba forms, Hinnebusch's claim cannot be justified. Even the use of synchronic forms from related Thagicu languages, may not give sufficient evidence to support his claim. Perhaps the lack of a strong base to support his claim, makes him make statements like ...This was dropped in favour of... This is due to the fact that it is hard to find relics in Kikamba synchronic forms to support his claims.

We want to make the following conclusions:

There was restructuring of most of the class 9/10 lexical forms due to the analogical reinterpretation of the prefix in cases of /VCV/ and /VV/ word stems. The new forms were taken as basic and speakers are/were aware of what were historical forms. The surfacing of new consonants like /-b/ and /-z/ in

places historically occupied by other consonants is a proof of it. The wide spread or occurences of these new forms are due to analogical extension (c.f. 59) to forms which had other forms historically.

Hinnebusch (1974:161) discusses the historical development of his proposed restructured forms as follows

stage (i) Basic form -b stem - no rule

stage (ii) Basic form /-b/ stem

Rule innovation b $\longrightarrow$ Ø / V-V/

stage (iii) Basic form v-stem (historical -b-stem).

Restructuring and thus rule inversion Ø $\longrightarrow$ b / N - V.

stage (iv) Basic form : V-stem (historical *b- and *v - stems.

Generalization of the inverse rule to include all v-stems.

stage v: Basic form v-stem.

Restructuring of the 1st sg. object: -N- +b $\longrightarrow$ -Nb-

[1st sg. ob] [1st sg. ob]

Loss of the inverse rule and addition of a morphological rule.

It is true there has been restructuring in Kikamba; we have shown it (cf. 62 iii) but we differ from him in the question of the motivation. Our evidence is from the internal synchronic structure of the language. This we use to make a historical claim through comparing different synchronic forms. Hinnebusch uses some synchronic data from one dialect of Kikamba two dialects of related languages and reconstructed

proto-Bantu forms. Perhaps this contributes to his wrong conclusions but we consider ours more telling with respect to true historical development of Kikamba as a language. We make this claim because it is the one which could be proved true by evidence from the closely related languages. Hinnebusch (1974) was heavily influenced by proto-Bantu reconstructed forms.

3.2.3. The Generalization of /-l/ as the reflex of the deleted consonant in classes 12/13 and 5/6

In chapter two (2.1.) we discussed the deletion of /-l-/ and its subsequent loss. We mentioned that it is misleading to use class 12/13 as evidence for the existence of /l/ in Kikamba. It is the same case for class 5/8 which show augmentation. We therefore used lexical forms in this class along with Gikuyu equivalents to strengthen the claims. In the discussion below we prove what we argued about earlier (cf.2.1). Some of the following have been reconstructed as having /ɣ/ historically.

(64)

Reconstructed Proto-forms	Synchronic Forms	Class 12/13	Gloss
*mbale	[mbae]	[Kaβale]	'clan'
*mboli	[mboi]	[Kaβoli]	'a goat'
*ɣeɛmbɛ	[jeɛmbɛ]	[KalɛmbɛJ	'mango fruit'
*maɣɑo	[maao]	[Tulolo]	'feet'
*eɣɛɔ	[eɛɔ]	[KalɛlɔJ	'tooth'

The synchronic forms are without some historical consonants. These can be established by comparing the synchronic forms with the reconstructed forms. The two lost sounds are */l/ and */ɣ/ but in class 12/13 only /-l/ appears as the reflex of the lost consonants as the synchronic forms.

If a linguist was to reconstruct the proto-forms, the chances are that /l/ would be reconstructed. The question is, why does /l/ surface as the reflex of the lost sound. The only reasonable suggestion, would be to consider /l/ as an epenthetic consonant in these cases. The second question would be what causes the /l/ epenthesis, in other words, what motivates it?

The possibilities are that, there are many /l/s deleted in this language, and therefore somehow speakers have come to consider all cases of missing consonants to be /l/s. This may be due to the fact that /l/ loss is more recent than that of /ɣ/. The second reason is that, there are many cases of /l/ in class 12/13 as it is in 5/6. Most of the words in these classes have /l/s in them. The second is a morphological consideration, so that all lexical items in these classes were interpreted as having /l/. In this case, all the lexical items which had /V-V/ were interpreted as missing an /l/ which was immediately inserted. This was a case of analogical extension, extending /l/s to all items of /V-V/ structure regardless of what were the historical forms. Therefore this (65) morphological rule was extended to all lexical items in this class which met the SD.

(65) $\emptyset \longrightarrow [l] \;/\; V\ -V$

This general extension of rule (65) caused restructuring to lexical items in this class. There was relexicalization so that the /l/ forms became the basic and /l/ is now underlying in the lexical forms of this class. Rule (65) is a historical rule. There is no common underlying form for the /l/-less forms

and the /l/ forms of class 12/13. The words should be entered in their surface forms in the lexicon. Since the two word groups have strong semantic relation, then Vennemann's via-rules should be used to show that the two groups are related.

3.2.4. The generalization of the 1st Person negative morpheme

Karega Mutahi (1977) discusses a similar process in the dialects of southern Mount Kenya. Since these dialects are related to Kikamba, one would expect the same to be the case in Kikamba dialects. Although this turns out to be so one of the dialects has taken the process further.

The negative morpheme in Kikamba is /-ti-/. The dialect of Kilungu unlike the others uses the uninflected form of the morpheme. It has therefore retained the proto-form and has not been affected by the analogical extension which as we shall show, caused the change into the present forms.

(66)

Kilungu Forms	other dialect Forms	Gloss
Ateoka	ndɛoka	'he will not come'
matɛoka	matioka/mayiũka	'they will not come'
atesoma	ndɛsoma	'he will not read'
utekoka	ndweoka	'you will not come'
ndeoka	ndioka	'I will not come'

The process taking place in (66) can be explained in this way.

The first person morpheme is /ne-/ and the negative morpheme is /-ti-/. As discussed elsewhere (3.1.), the high vowel is

normally deleted after the alveolar nasal, so that ne- ti- becomes n- ti + verb. Due to this, we have assimilation to ndi + verb. Therefore at the surface the negative morpheme and the 1st person singular marking morpheme merge and produce /ndi-/ + verb. The merger is interpreted as the negative marker; so we have.

(67)
- ndioka - "I won't come"
- ndiema - "I won't cultivate"
- ndisoma - "I won't read"
- ndikɔma - "I won't sleep"

The /nd-/ negative marker is generalized to cover the third and second personal singular, except in Kilungu. We can conclude then that the generalized /nd-/ is taken to be the singular negative morpheme marker. The process is (i) a phonological process of assimilation of /-t/ to /n-/ after the deletion of /-e/ gives /nd-/. This is taken as the marker of the first person singular negative morpheme. It becomes a morphological rule.

ii) This is generalized to the other singular persons through analogical extension or generalization. The persons are marked by vowels; /-o-/ marks the second person and /-a-/ third person singular.

(68a) Other dialects forms

(i)	/nd-a-i-oka/	[ndɛoka]	"he won't come"
(ii)	/nd-u-i-oka	[ndeoka]	"you won't come"
(iii)	/nd-o-i-k ma/	[ndwekɔma]	"you won't sleep"
(iv)	/nd-a-i-ya	[ndɛja]	"he won't eat"

(68b) Kilungu equivalent

(i) /a-ti-i-oka/ [ati:oka] "he won't come"

(ii) /a-ti-i-oka / [oti:oka] "you won't come"

(iii) /o-ti-k ma/ [oti:kɔma] "you won't sleep"

(iv) /a-ti-i-ya/ [ati:ja] "he won't eat"

The morpheme markers are clearly shown in (68a,b). The /-i-/ marks both the present tense and also acts as a second marker of the negative morpheme. In that case therefore the negative morpheme has two markers.

In Kitui dialects, the first person singular morpheme /ni-/ has been interpreted differently. When this appears in the environment before a /-VCV/ verb stems it is realized as /ŋg-VCV/. There is no phonetic motivation in such cases. We have therefore to seek for the motivation elsewhere. Before we suggest what we consider the motivating factors, we present exemplifying data below.

(70)	Machakos dialects forms	Kitui Dialect Forms	Gloss
(i)	ne-wa-ne-oma [newanuma]	ne-wa-neuma [newaŋguma]	'you have abused me'
(ii)	ti-osɛ ku-neuma [tiosɛ kunuma]	tiosɛ ku-neuma [tiosɛku ŋguma]	'it is not good to abuse me'
(iii)	[newanemea] niwanimia	[newaŋgemia]	'have you cultivated for me?'

But 69b)

(69b)				
(i)	[newamuuma]	[newamuuma]	'have you abused him
(ii)	[newamoemia]	[newamoemia]	'have you cultivated for him'
(iii)	[ti-osɛ kumouma]	[tiosɛ kumouma]	'it is not good to abuse him'

The speaker of Kitui takes the first person singular morpheme to be /ŋg-/. Perhaps this is based on the fact that the deletion of the vowel in /ni-/ causes the nasal to be in contact with a consonant, in cases where the verb stems have consonant initially. For example /ne-wa-ne-kuna [newaŋguna]. Then the /ŋg-/ is taken to be the first person object marker. Then like the /nd-/ cases of the negative morpheme (cf. 67). Therefore /ŋg-/ has been given a morphological interpretation, the marker of first person object marker. Due to such interpretation, the first person object marker morpheme underwent restructuring and is now realized as /ŋg-/ instead of /ni-/ or /ne-/. This type of relexicalization caused by morphological reinterpretation and subsequently extended to other cases by analogy has played a big role in sound change in Kikamba (cf. 3.2.1; 2,3,4).

3.2.5. The Elimination of vowels before concordial markers of Classes.

Kitui and some Kilungu dialect speakers have a vowel before the class concordial markers. We think these are relics of what used to function as proto-Bantu determiners.

(71)	Kitui dialects Forms	Standard Kikamba Forms	Gloss
	mboi i-mbiŋge	mboi mbiŋgeki	'many goods'
	maŋga a-mɛŋge	maŋga maiŋgeki	'a lot of cassava'
	mbɛsa i-mbiŋge	mbesa mbiŋgeki	'much money'

The standard forms have elited these vowels as have many speakers of the other dialects. The vowels are now under pressure from the need to have a uniform paradigm. Majority of the

speakers of Kitui dialects seem to be opting for the standard forms. There are also very few cases with the vowels and even they do not always have the vowels. We therefore consider these vowels as in the process of getting elited from the language. Another motivation for the loss of these vowels, is the fact that they have lost their function in the language, therefore they are redundant.

CHAPTER IV

4.0.0 Summary and conclusion

4.1. Summary:

This study has looked into changes leading to losses of two sounds: (2.0); the /l-/ (2.1) and the /ɣ/ (2.2) in Kikamba. It has shown that the deletion and subsequent loss of /l/ started as a purely phonological process - a weakening process. The initial environment was between vowels. However this phonological process ran into conflict with established semantic distinctions of lexical items. It threatened to interfere with this distinction by causing lexical mergers, i.e. homophony. The language had therefore to rectify the situation by constraining the rule. Morphological information was added to the rule to the effect that its output would not result in homophony (cf.9). So what had started as a purely phonological rule had to have semantic information added to its (SD) environment. We showed that in many cases the deleted /l/ led to relexicalization of the lexical items. The speakers took the /l/-less forms as basic and therefore the deleted consonant was considered as absent underlyingly. This is then a historical sound change. We used synchronic phonological processes to prove its loss

(cf. 2.1.2-3). In all cases where the segments are deleted, the speakers did not have an /l/ underlyingly.

The appearance of /l/ in classes 12/13 was considered as an epenthesis due to analogical extension. That is all lexical items with the structure /CVV/ or /VV/ had an /l/ inserted between the vowels. The speakers considered the missing consonant to have been /l/.

Consonant loss also affected the proto-Kikamba */ɣ/. It was weakened and finally lost intervocalically in all other dialects except that of Kitui north. We also suggested that the loss of the sound in the same cases caused gliding word initially in the other dialects.

The other changes can be divided into two groups;
(1) Those triggered by phonetic factors and later, in some cases, interferred with by morphological factors.

(2) Those caused by analogy; i.e. the extending of rules to forms that were not affected by them originally.

Included in the first group are such changes as
(1) /θ/ $\longrightarrow$ z or ʒ ; ts $\longrightarrow$ s; t, n, s, $\longrightarrow$ Ø, j $\longrightarrow$ n and
l /ʃ/ (cf. 38).

In chapter (3.1.1.) we showed */θ/ changed to /-z/ in dialects spoken in Kitui after a nasal, to /ʒ/ in the same environment in the dialects spoken in Machakos. */ts/ has changed to /s/ in all dialects of Kikamba except that of Kitui north. t, n and s have changed to /Ø/ in the dialect of Kilungu,

in the environment before two or three alveolar segments. The actual environment is syllable initial before a high front vowel and followed by another syllable with similar alveolar consonant. For example

Other changes are:

The change of palatal nasal */ɲ/ to an interdental nasal /n̪/; This is a change attested only in the dialects of Machakos. Kitui dialects have preserved the proto-form */ɲ/. Then the development of /tʃ-/ from /ki-/ before another vowel, as in /kioma/ [tʃoma] "iron bar: There was restructuring so that /tʃ-/ is no longer considered to have developed from /k-/ before a high vowel. The new sound was also given a morphological function. In other dialects it is a singular marker while in Kilungu it marks both the singular and the plural. "Along with the development of /tʃ-/, /sʸ/ developed from /s-/ before a high vowel". The two cases are due to palatalization. The palatalized forms were then reinterpreted as the basic forms. /sʸ/ was taken as a marker of plurality in all dialects except in Kilungu.

We also showed how analogy has brought about quite a number of changes which were not phonetically indiced. We further showed that such analogical changes were motivated by morphological interpretation.

There have been many cases in our study pointing to the importance of meaning/form associations. Thus the speakers want to attach meaning to forms. Any phonetic alternation works towards a meaning end, in other words speakers try to give meaning or morphological functions to most phonetic alternations.

Most of our historical sound changes observed have shown that most phonetic alternations lost their alternations as a result of different morphological conditioning. Each alternation was given a different interpretation. The interpretations were different for each dialect, hence the cause of dialectal sound variations. This is an explanation for the existence of different dialects in the language. In agreement with NGP proponents, that morphological systems have a prominent position in both diachronic and synchronic processes.

4.2. Conclusion:

The discussions throughout this study, have pointed towards one conclusion; that the theory that allows morphology a greater role in both synchronic and diachronic processes has more descriptive and explanatory power.

Most of the rules we have come across were either constrained into not spreading further by morphological or semantic considerations. For instance the /l/ deletion rule was made unproductive where such applications would have resulted or created homophony. The rule was morphologized when the phonetic environment was still there. This contradicts the stand that morphologization of a rule comes about only after the phonetic environment has been obscured or lost. Hooper (1976) and Skousen (1972) have more examples to prove that, the loss of the phonetic environment is not a condition on morphologization but rather morphologization may occur even where the phonetic condition is transparent or where the phonetic

condition is not in danger of being lost. They say, the motivation for morphologization is the desire for speakers to establish one to one correspondence between sound and meaning (cf. Antilla 1977).

In discussing some of the phonological changes like /l/ deletion and its retention in classes 12/13 we pointed out that the speakers are not aware of the possibility of deriving the /l/-less lexical items from those lexical items of classes 12/13 which have /l/ from a common underlying representation. We further showed that in many cases /l/ is felt not to be present in the UR of such words. The existence of /l/ in this class is due to analogical epenthesis. We also used some phonological rules, like palatalization, glide-formation and vowel coalescence to prove that the lexical items which were effected by rule (9) have been restructured. Using TGP, we could have posited /l/ and then derive the /l/-less from a common underlying representation. This model does not allow restructuring as long as there is a related alternation with the deleted form surfacing neither had it formal mechanism for restructuring. We could therefore end up with the historical forms which could be claimed to be underlying synchronically. We have shown (3.2.3) that not all cases of /l/ in class 12/13 that not all cases of /l/ in class 12/13 reflect the historically lost consonant. Positing /l/ forms underlyingly on the basis of their occurence in this class would therefore be misleading and wrong. For this reason, then, our UR would be wrong and our claim about it would not be a correct claim of the speaker's

knowledge of his language. We have argued the NGP model will recognize relexicalization affecting these lexical items, the semantic relation between the two lexical classes or groups, and use via-rules to relate them. TGP is lacking in such devices and cannot explain this natural language situation. Therefore NGP allows restructuring to take place soon, and can show a change as soon as it happens. TGP allows it but after a long time. What this means is that reconstructed forms are often posited as underlying in the synchronic grammar. In our discussion we also showed how /tʃ-/ and /s^{y-}/ (cf. 3.1.4) underwent restructuring and were no longer regarded as forms of /ki-/ or /si-/. This was a historical sound change that added two new sounds to the language sound inventory.

In this study, we have shown that analogy has played a great role in sound change in Kikamba (cf. 3.2.1-5). The role of analogy is both a diachronic and a synchronic process is accepted in NGP but dismissed as just a case of rule simplification in TGP. It is clear therefore that TGP as a model could not have worked in our data analysis in this study. The analogical extensions were motivated by morphological functions given to the forms which were extended. Earlier we stated that TGG does not provide for a morphological level, hence its grammar simplification could have no motivation and could not take place.

Our discussions showed that in dialectal situations, it is true that a stratigraphic model works. Areas which seemed to have retained more of the proto-sounds were at the marginal points. These were areas to the border of the Kikamba speaking

communities and those of other languages. We can also say that the area of innovations was or is somewhere in Machakos district. The question of ease of communication between such centres and the bordering areas played some part. The most conservative area in terms of retention of the sounds is Kitui north. Communication is easier for Kikamba speakers in this area, with those of Kitharaka - a Meru dialect. In between the Machakos dialect (innovative) and the Kitui north (conservative) is the Kitui Central dialect. This dialect although has retained some of the proto-sounds, is not as conservative as that of Kitui north. This is because there is frequent and easy communication culturally and otherwise between these two groups. The speakers of the Kilungu dialect although very near to the central area in geographical terms, we learnt that, there used to be some social barriers between the two groups earler on. There was mistrust which sometimes precipitated into open hostility at times. Perhaps this explains why there is such a great diversity between the two dialects in terms of the sound changes, although quite close geographically.

4.3. The Hypotheses proved:

The main hypothesis was that existing dialectal sound variations are products of historical sound development(s). This implies that, at one time, the speakers of Kikamba had one common language, which is here referred to as proto-Kikamba. This proto-language, therefore had one system of sounds hence proto-sounds. We established these proto-sounds by reconstruction. Through positing such reconstructed words we were able to show

that, the synchronic dialectal variations have a common origin from which they developed differently for different reasons, hence causing different sound systems. We also proved that Kikamba phonology had a basic syllable structure of CV like other related languages; therefore the VV structures are a result of phonological weakening. This weakening has been manifested in the changes from stops to fricatives and from fricatives to /ø/ (e.g. /ɣ/ —> ø), hence the structure VV.

The result of these changes which were realized differently for different dialects, have created different grammars. We cannot therefore try to posit one underlying system of sounds for all the dialects and then derive each from this common underlying sound system. This fact is important to prove that dialects are a result of historical sound changes. Therefore all dialects are natural phenomena of language change. Dialects should then be given equal importance in any language study. People should not regard their dialects as superior or more correct than those of the other speakers. Mention must be made of the different grammars of dialects in any language study.

Another outstanding difference between the major dialects of Kikamba is that of tonology. The two major dialects of Kikamba, that of Kitui and that of Machakos in general, are markedly differentiated by their tone systems. We think there is a need to study the two tone systems, establish the differences and reconstruct the proto-tone system, then establish how the two different dialectal tone system developed.

The study of Kikamba tones by Ford (1975) did not look at these dialectal differences or variations in tones. Proto-tone reconstructions have been attempted hitherto by some scholars. Rottland (1977) attempted to reconstruct the proto-tone patterns of Yaanzi, a language of Zaire. We hope such reconstruction of the proto-Kikamba tone system will throw light to the synchronic tone systems and help explain their present patterns.

Presently, the Ministry of Social Services, is engaged in adult literacy programmes. There is a need, therefore, to draw up effective programmes of instruction to facilitate easy mastering of reading skills. The present writing systems are under review with a view to seeing how best the sound systems of each language can be represented in the orthographies. It is our hope that each Kikamba dialect's sound system will receive some attention. This should be done by representing as many dialectal sounds as is practically possible. Where this is not possible the variations should be indicated but one "representative sound" symbol used in the orthography. The same should be done for vernacular teaching systems for primary schools. What we are suggesting is new standardization based not on one single dialect as is the case of Kikamba at present. Our study could form a useful source for standardization.

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