Sound Change and the Classification

of the Dialects of Southern Mt. Kenya

A Thesis Submitted in Partial Fulfilment

for the Degree of Doctor of Philosophy in

the University of Nairobi

1 9 7 7

This Thesis is my Original Work
and has not been presented for
a Degree in any other University

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"This Thesis has been submitted for
Examination with our approval as
University Supervisors".

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	Symbol used	IPA symbol	present orthography
	CONSONANTS		
1.	b or B	B	b
2.	b	b	mb
3.	ʃ	ʃ	C
4.	d	d	nd
5.	f	f	b
6.	g	ɣ	g
7.	g	ɜ	ng
8.	h	h	h
9.	j	dz	nj
10.	k	k	k
11.	l	l	r
12.	m	m	m
13.	n	n	n
14.	ɲ	ɲ	n
15.	ŋ	ŋ	n
16.	p	p	-
17.	r	r	r
18.	s	s	-
19.	t	t	t
20.	d	ʒ	th
21.	v	v	-
22.	w	w	w
23.	i	i	y
24.	z	z	-
	VOWELS		
1.	i	i	i
2.	e	e	ī
3.	ɛ	ɛ	e
4.	ɔ	ɔ	a
5.	a	a	o
6.	o	o	ū
7.	u	u	u

CONTENTS

Abstract.

        We attempt to classify the dialects of Southern Mt.
Kenya on the basis of historical sound changes. Up to now,
all the dialects of theseregions have generally been
regarded as varieties of the Kikuyu language. There has
not been any attempt to find out the differences that
exist between these dialects. The only work that I know
of is that of Prof. Mohlig (1974) which has classified the
dialects of North Eastern Mt. Kenya.

        Prof. Mohlig's work does not deal with the dialects
of Sourthern Mt. Kenya. The only dialects of this region
that he has discussed are Ki-Embu and Ki-Mbeere. It is
true therefore to argue that there is no literature on
dialectal variation in this region.

        As an introduction chapter I reveals the nonlinguistic
factors that have influenced the language situation in the
area. It does not, therefore, raise the issues that are
discussed in the other four chapters.

        Chapter II deals with the morpholexical differences
between the dialects and the historical sound changes that
have caused them. The aim of the discussion and the examples
is to show that the dialects differ in both lexical and
morphological structures. The changes affecting various
morphemes are discussed within the Natural Generative
Grammar (N.G.G.) and its theory of sound change.

Chapter III exemplifies certain sound differences and analyses the changes that have caused them. The current phonological system of each dialect or group of dialects is traced from a common, historical, sound system. The historical sound-change rules that link the proto - and synchronic stages are discussed and formalised. Where possible, the diachronic sequence of the changes is given.

Chapter IV discusses and exemplifies synchronic, phonological rules, including various rules that fix different dialect boundaries. It is the main chapter of the study, given its title, and it is the longest.

In a summary form, chapter V concerns itself with the theory of sound change used in this study. The chapter discusses the relationship between both deep and surface and diachronic and synchronic forms. The former discussion poses the question of whether all the dialects have identical underlying forms. Arguments for or against identical underyling forms are given.

In discussing the relationship between diachronic and synchronic forms, the question of restructuring becomes crucial, in particular how to establish the point at which restructuring occured. The chapter thus discusses restructuring and the constraints that our linguistic theory needs in order to establish it.

Restructuring leads to rule formulation and rule

interpretation, rule generality and the correctness of
its predictions are also discussed. We reject any
generalisations that contradict actual sound changes.

ACKNOWLEDGEMENTS

CHAPTER ONE

People and their dialects:

1.0 Introduction.

In this chapter we shall limit our discussions to the people and the dialedts of Souther Mt. Kenya (hence S. Mt. Kenya). As an introductory chapter it will not discuss any linguistic differences between the dialects.

One of the things that we shall examine in this chapter will be the problem of a single name for the people and their languages or dialects. We shall, also examine and evaluate the reasons behind the official classification of all these people into Kikuyu, Embu and Mbeere.

Finally we shall introduce each dialect by describing its geographical location in the region. The purpose for such an introduction will be to help the reader in relating each dialect to other dialects of the region.

The conclusion will touch on pressures exerted on small dialect speakers by major dialect speakers. We shall also give figures of the distribution of speakers of these dialects outside their home districts.

1.1 Aims:

A great number of the Bantu studies that have been carried out have been confined to the classification of Bantu languages. This classification has been dominated

by Guthrie's work on Comparative Bantu (i.e. 1948, 1967
1971 etc.). Guthrie's work has not gone beyond noting and
stating the changes in each given language of his study
cf. *P > B in Embu (Guthrie 1971).

In his work Guthrie did not discuss the diachronic
order of the changes he showed. He also did not attempt to
subgroup his languages according to common sound changes of
each subgroup of his regions. The first scholar, to my knowledge,
to attempt to subgroup a given set of Bantu languages in
Hinnebusch (1973). Hinnebusch has used prefixes and sound
changes as his basis for subgrouping Kenyan Coastal languages.

Hinnebusch's inputs are the sounds and prefixes
reconstructed by Guthrie and Meinhof. His outputs are the
present day differences and similarities between the
languages of his study. Between the two he has the rules
and their order of application.

By employing this approach Hinnebusch is able to show
any common changes that occurred within a given set of
languages. He is also able to show the languages which do
not share a given change which is common elsewhere. In
this way he is able to subgroup the languages into smaller
groups.

In the present study we begin from the contemporary
sounds of the dialects of S. Mt. Kenya. From the
contemporary sounds we work backwards to the proto-language

of the region i.e. the reconstructed forms. From the
reconstructed forms we work forwards showing all the changes
that have taken place and their order of operations.
Reasons for any orders are given for each ordered pair.

From the above paragraph it is obvious that we have
not worked from one end like Guthrie or Hinnebusch.
Guthrie worked from top to bottom and Hinnebusch worked
from bottom to top. The two scholars had each his reason
for his unidirectional approach.

Our reasons for working from top to bottom and vice
versa are that we are interested in reconstructing an
intermediate stage between the present stage and Common
Bantu. We are also interested in subgrouping a set of
dialects that are closely related.

The aims of the three studies compared above are not
identical. Guthrie was interested in reconstructing Common
Bantu. Hinnebusch was interested in subgrouping a set of
languages by using common Bantu forms. Our aims are to
reconstruct an intermediate stage between common Bantu and
the present forms and then subgroup dialects of that
substage that we reconstruct. It is true then to claim
that different aims have necessitated different approaches.

In this study we compare different dialectal   forms
and changes in order to establish the distance between
given sets of dialects. Note, for example, that the four

eastern dialects Ki-Embu, Ki-Mbeere, Ki-Gichugu and Ki-Ndia, have merged the distinction between *P and *B. The three western dialects of Ki-Mathira, Northern and Sourthern dialects have kept this distinction intact. Such evidence as this helps us to subgroup not only languages but dialects also. The possibility of this subgrouping was denied by Guthrie (ef. 3.1).

By reconstructing an intermediate stage between Common Bantu and the present forms we have avoided taking sides with either Guthrie or Meinhof. Guthrie reconstructed voiced stops i.e */b d g/ while Meinhof had continuants i.e. */B l g/. For us there is no problem of choice (cf. 3.1).

The reconstructed forms and changes may be challenged by those who advocated abstract[1] phonology. For such scholars some of our diachronic changes may be claimed to be in the synchronic grammars of the speakers of these dialects. That may be true in other models of sound change but it cannot be the case in the model used in this study. In our model only the forms that do not violate the, 'Strong Naturalness Condition,' and the, 'No Ordering Condition, can be posited as synchronic forms (cf. 4.1).

In conclusion it should be pointed out that the only sounds that have been reconstructed are those whose reflexies are attested in the region. Any sound whose reflexies are not attested in the region cannot be

reconstructed as a part of the proto-S. Mt. Kenya sound
structure.

1.2.1 <u>The People</u>

According to 1969 census, there are 2,368,848 native
speakers of Southern Mt. Kenya dialects. The same records
divide these people into three ethnic groups. These are as
shown below:-

    1. (a) Kikuyu   2,201,632

       (b) Embu   117,969

       (c) Mbeere   49,247

Of the above, 1,763,047 live in their home districts
(cf. map 1). This figure is broken down as follows:-

    2. (a) Kikuyu   1,607,170

       (b) Embu   109,174

       (c) Mbeere   46,703

According to the above figures Embu and Mbeere are less
mobile than Kikuyu. Note, for example, that 594,462 Kikuyu
live outside their home districts i.e. outside Central
Province. This is about a quarter of the Kikuyu population.
For Embu only 8,795 live outside their homedistrict. This
figure is less than ten percent of Embu population. The
figure for Mbeere is 2,544. These are the only people
registered outside their home district. This is less than
five per cent of Mbeere population.

The figures given above have important linguistic

implications. Note that if only three dialects existed
Embu and Mbeere would be linguistically dominated by the
majority around them. We shall come back to linguistic
dominance later.

1.2.2 Other Divisions

As stated above the official records have recognized
only three ethnic divisions. To our knowledge the three
divisions are not disputed by any group. The official
classification is rather arbitrary in that linguistic
differences between Ki-Embu and Ki-Mbeere are less marked
than those between Ki-Gichugu and Ki-Ndia on one side and
Ki-Mathira, Northern and Southern dialects on the other
(cf. chapter 2, 3, 4 and 5). In fact there are greater
differences between the latter groups than between the
former.

Our opinion is that the division between Embu and
Mbeere is more historical or political than linguistic.
Linguistically there is no justification for this division.
As will be seen in chapter III these two dialects have
identical sounds. The only differences that we shall see
will be on phonological rules and in lexical items.

This division into Mbeere and Embu tribes, as
indicated in 1969 census, must have been based on either
historical or political reasons. There may have been some
disagreements in the history of these people that made them

ask for separate names. An alternative to this may be
some inherent insecurity of Mbeere people which makes them
fear their northern neighbours. Whatever the reasons are,
for the division, they cannot be linguistic.

The disagreements between Embu and Mbeere seem to have
been less serious than the disagreements between the two
and the Kikuyu. This is reflected by their choice to be in
Eastern Province other than in Central Province. Again the
two agreed to be in one district i.e. Embu. It may be of
interest to note that at one stage of our history Gichugu
and Ndia were in Embu district. The reasons for the
separation into Embu and Kirinyaga districts can only be
found in a historical research.

Linguistically there would be more justification for
a division between Gichugu-Ndia group and the western
dialects of Mathira, Northern and the Southern dialects. The
linguistic differences are shown in the four following
chapters of this study. Since these changes will come in
later chapters we need not deal with them here.

The linguistic differences between Gichugu-Ndia group
and the western group are now being used for economic
reasons. The former resent what they see as economic
encroachmentcoming in form of land acquisition. People
from the western groups are ready to buy land at prices
which the Gichugu-Ndia people regard as being too high for
them to afford. They therefore begin to see the new buyers

as outsiders coming into their home district. These
attitudes enhance linguistic differences.

The divisions between Gichugu and Ndia have been
aggravated by the political divisions of Kirinyaga district.
Administratively Ndia is a single division while Gichugu is
another. The third division of Kirinyaga is the Mwea which
is of mixed people (cf. 1.3.1). The division between
Gichugu and Ndia is like that of Embu and Mbeere. The two
have identical sound structure but differ in phonological
rules.

The difference between these two groups and Embu-Mbeere
group is that none of them is recognised as a different
ethnic group. They both belong to the Kikuyuggroup shown
in 1.2. They however feel that they are different from
what they regard as 'outsiders' in their district.

An example of this feeling is shown in language use.
I remember one day that my informants and I walked through
somebody's home. My informant shouted greetings to the
family thus, 'Morjĝga ' 'are you fine?'. The answer from
the lady of the family was, 'Is that you, Charles, speaking
like a Mokabete? When I asked the reason for this my
informant said that his Ki-Gichugu pronounciation should
have been 'Mòrjéga'.

The lady's question shows two different things. These
are the fact that Gichugu people feel that they are

linguistically different and that for them everybody who
speaks a dialect west of Ndia is a Mokabete (a person from
Kabete). For them there is no distinction between Northern
and Sourthern or Mathira people. They all speak Ki-Kabete.
The lady did not know that the Kabete area would have
(morj ga).

Other division that one finds in literature are Kabete,
Metumi and Gaki (cf. Muriuki 1974). As is evident from
our later discussions these names do not have any linguistic
significance. In the above literatures Kabete stands for
Kiambu, Metumi for Murang'a and Gaki for Nyeri. None of
these terms has any linguistic backing. Even historically
these names have no role to play.

People in northern Kiambu i.e. Gatundu denied that they
belonged to Kabete. For them Kabete is the area near
Nairobi especially between Nairobi and Limuru. For most
Murang'a people Metumi was a strange name, they had never
heard of it. Nyeri people claimed that Gaki was a specific
place and not a name for the whole district. For them
Gaki was the area around Muthinga Market.

In conclusion we should point out that no such divisions,
as the above, existed before colonialism. They must therefore
be seen as the creation of colonial administration. Any
one trying to apply these divisions linguistically is
bound to fail.

1.3.1. <u>The Region and the Dialects.</u>

Our region of study lies between Thuci river, to the East of Mt. Kenya, and the Aberdare Range (Nyandarua Mountains) to the West of Mt. Kenya. From Mt. Kenya the region stretches southwards to the city of Nairobi (cf. map 1)

This region is in two administrative Provinces. These are Central and Eastern Provinces of Kenya. The districts of Kiringunga, Nyeri, Muranga and Kiambu are in Central Province while Embu district is in Eastern Province. Most of this region, lies in Central Province.

As will be noticed from our maps of the region (cf maps 1 & 2) Nyandarua district is left out of the dialectal considerations. The reason for this is that this district does not have any dialect boundaries. It is a mixed area of all dialects just like Mwea division of Kirinyaga district.

1.3.2. <u>The Dialects:</u>

As shown in map 2 our region of study is divided into seven dialects. These are:-

3.   1.   Ki - Embu

        2.   Ki - Mbeere

        3.   Ki - Gichugu

        4.   Ki - Ndia

1.1.3   11 - 5.   Ki - Mathira

6.   Northern dialect.

7.   Southern dialect.

The reasons for this division will be discussed

in chapters II, III, IV, and V. On linguistic evidences

the area can be divided into two regions or groups of

dialects. The first group of dialects will be called

eastern dialects and the second one will be western

dialects. Eastern dialects will be Ki-Embu, Ki-Mbeere,

Ki-Gichungu and Ki-Ndia. The remaining three dialects

of Ki-Mathira, Northern and Sourthern dialects will make

the western dialects.

These two broad groups are classified by certain

sound changes and phonological rules. Note for example

that the four eastern dialects have lost *P, *B distinction.

The western dialects have reduced the passive to $\supset$ from *wa.

These western dialects have also developed consonantal

cluster reduction (cf. 4.2.1.) Such features as these

have been used in grouping the dialects into two subgroups.

Since our main concern at this stage is to introduce

each dialect we shall suspend dialect differences for now.

In order to be able to introduce each dialect and to

locate it geographically we shall deal with each dialect

separately. The order of our discussions shall be as shown

in 3, above.

1.3.3   **Ki - Embu.**

          This is the only dialect that Guthrie (1971) seems
to have recognised as different from Kikuyu. His example,
however, shows that he was talking about Ki-Gichungu or
Ki-Ndia and not Ki -Embu. He says on page 46, 'E 52.
'Embo (Kenya). Similar to E. 51, but °P $>$ B. As shown
in chapter III this change occurred in Ki-Gichungu and
in Ki-Ndia but not in Ki-Embu.

          This dialect lies between four rivers. To the north is
River Thuci, to the east River Tana, to the South River Ena
and to the west is River Rupingazi. This area forms
Runyenjes division of Embu district (formerly Embu division).

          According to the 1969 population census this dialect
has 117, 969 native speakers. Out of these 109, 174 live in
Embu district. The rest are scatered all over Kenya.

1.3.4.   **Ki - Mbeere.**

          No linguistic book has, to our knowledge, mentioned
the existence of Ki - Mbeere. As already stated in 1.2.
Mbeere are recognized as separate from both Kikuyu and
Embu. Their area lies between three rivers. These are Tana,
which lies east and south of this region, Rupingazi, which
lies to the west and Ena which separates Mbeere from Embu.
Administratively this area is divided into two divisions
of Gacoka (west) and Siakago (eastern section).

According to the figures of 1969 population census this dialect has 49, 247 native speakers. Out of these 46,703 live in Embu district. The rest live in other areas of Kenya.

1.3.5. Ki - Gichungu.

This dialect lies between two rivers. These are Rupingazi and Thiba. The first separates Ki-Gichugu from Ki-Embu and the second separates it from Ki-Ndia. The actual boundary between Ki-Gichugu and Ki-Ndia runs along Rutui (a tributary of Thiba). To the north is Mr. Kenya.

Records show that by 1969 Gichugu division, which forms the core of Ki-Gichugu speakers had 62,664. Some speakers of this dialect are also found in Mwea division of Kirinyaga district. This, latter division, is an area of mixed dialects. People from all areas of central Kenya are found here.

Assuming that a good number of Mwea residents do speak this dialect we can give it a total of 80,000 speakers at most. Note that Mwea has 58,262 people. About a half of these people come from outside Kirinyaga district,

Speakers of this dialect have some minor internal variations. This is a claim made by the people themselves. Most conspiceus variation is between Ngariama and the rest

of Gichugu people. The best example of the differences
between Ngariama and their neighbours is the surfacing
of the locative suffix as - ni instead of - ne that is
found in all the dialects west of Ki-Embu. The differences
between Ngariama (location) and the rest of Gichugu were not
serious enough to warrant a separate dialect.

1.3.6. Ki - Ndia.

Ki - Ndia is spoken in Ndia division of Kirinyaga, district.
Speakers of this dialect live between rivers Thiba to the
east, Tana to the south and Ragati (mitheri) to the west.
On the northern side is Mt. Kenya.

In 1969 this division of Kirinyaga had 93,406 people.
A small fraction of these speak Ki - Mathira. We could
say that speakers of Ki-Ndia in Ndia division may be as
many as 80,000 people. To this figure we should add
another fraction of those who live in Mwea division. The
total number of speakers of this dialect may be nearly
100,000.

1.3.7. Ki - Mathira.

This dialect is, mainly, in Mathira division of
Nyeri district. It is to be found west of Ragati River
and between Mt. Kenya and Tana River. The native speakers
of this dialect are found around Karatina town.

The present day dwellers of Mathira division
include a large number of Northern dialect speakers. The
number of speakers of the northern dialect in Mathira
is hard to establish because there are no records showing
who speaks what dialect. A conservative estimate would
put the number of Ki - Mathira speakers to about 70,000
people out of over 94,000 residents of Mathira division.

1.3.8. Northern dialect.

This dialect is spoken in both Nyeri and Muranga.
It's area lies between Chania River to the north, and
N. Mathioya River, to the south. On the eastern side
we have Ki - Mathira and Ki - Ndia dialects and on the
western side is Aberdare Range.

In population this is the second largest dialects.
It's speakers in this region are about 400,000 people.
It is second to the Southern dialect.

1.3.9. Southern dialect.

This dialect lies between N. Mathioya River and the
City of Nairobi. On the eastern side of this dialect
there are the former settled areas of Makuyu and Thika
regions. This region (settled area) is of mixed population.
To the west of this dialect is the Aberdare Range.

Speakers of this dialect are over three quarters of
a million. It is therefore the dominant dialect of our

region of study. Apart from being dominant in population
it also used on the Voice of Ke..ya (VOK) vernacular
service for broadcasts to the people of S. Mt. Kenya.

1.4.1. Conclusion.

In this chapter we have seen that five of our seven
dialects are spoken by minorities. None of them has
more than 100,000 speakers. We have also seen that none
of the minority dialects is used in broadcasting. These
and other factors that we shall discuss here reveal
that minority dialects are at a disadvantage.

The disadvantages we talk of include the fact that
none of the five small dialects has an orthography. All
the books are written in the two major dialects. Of these
two the Southern's sound structure is used but the
Northern's morphological structure is used. Note for
example that instead of writing £:ᵈie we have aredie
'He will go (today). The first comes from southern
dialect while the second is from Northern dialect.
The second form is used in books.

The written word has done a great deal of harm to
the small dialects. This is especially true of the bible
translations. In all the region of our study all the
books are written in the two major dialects. This means
that the language of the bible is that of the two dialect.

Everywhere, including some parts of Meru, these two
dialects have been taken as the religious dialects. The
readings, the singing and even preaching (at times) are
conducted in some variety of these two dialects. Speakers
of small dialects have therefore accepted these dialects
as their religious language.

Another thing that has helped the spreading of the
major dialects is the teaching of mother tongues in
lower primary classes. In all the areas of our study the
teaching of mother tongue means the teaching of the two
western dialects. All young language learners have to
learn what is popularly known as 'Kikuyu'. The learning
of 'Kikuyu' takes place in schools while local dialects
are learned at home.

As a result of learning the written language in
schools all small dialect speakers have acquired two
dialects. These are their local dialect and the two major
dialects. They speak some form of 'Kikuyu'. Those who
speak the written dialects, however, claim not to
understand the small dialects.

From what we have said about these dialects, one sees
that a lot of pressure is exerted on minority dialect speakers
by the major dialect speaking people. Note that the major
dialects are the basis of the standard language, are the
basis of broadcasts, are dominant in numbers etc. The
question of numbers is especially crucial to those living
outside their home districts. Before discussing the role

of numbers in language use. Let us look at the following
figures i.e. **4.**

The 1969 census revealed the following figures of
Kikuyu, Embu and Mbeere.

4.

Group	Coast	N. Eastern	Nyanza	Nairobi	Nakuru district
Kikuyu	19,462	699	5,933	191,367	169,363
Embu	842	31	83	3,223	303
Mbeere	116	8	15	259	19

Figures given in 4 have serious linguistic
implications. The implications are that small groups are
always small hence outnumbered everywhere. Socially the
speakers of small dialects are always pressured by the
majority to speak 'Kikuyu'. Even the other small dialects
i.e. Ki-Gichugu, Ki-Ndia and Ki-Mathira have the same
tupe of relationship to the two major dialects.
They are always represented by minorities.

Pressure on the small dialect speakers is most serious
in institutions of learning. These are the places where minority
dialect speakers are often asked about their relationship
to major dialect speakers. One of my informants who is
a final year student at the University of Nairobi tells me
of her being asked if she was a true Kikuyu. The question
came from speakers of western dialects. This student, who
speaks Ki - Ndia, did not know what to say.

Sometimes these minority dialect speakers are insulted by their peers. I talked to some students from Kamwenje Teachers' College who told me that they referred to Ki-Ndia and Ki-Gichugu speakers as mekamo 'udders,' which is a way of saying that they cannot pass for either 'Kikuyu' or 'Embu.'[2]

Footnotes to Chapter 1

1.   As used here the word 'Kikuyu' is limited to speakers
     of western dialects. 'Embu' combines both Embu and
     Mbeere into one group. These meanings are limited
     to this chapter.

2.   For those students both Embu and Mbeere are called
     'Embu'.

CHAPTER II

MORPHOLEXICAL DIFFERENCES.

2.0.   If our linguistic theory is to enable us to write
grammars that are explanatorily adequate it must have
enough constraints. These constraints will enable us
to write rules whose motivations are easy to see. In order
to show the motivations of each and every rule that we
write we have to divide our grammar into different
components. The   reasons for the divisions are easy
to see especially when one compares a number of rules.
A comparison between a syntactic and a phonological rule
shows that each of these rules has its own motivations.
In order to show the different motivations of different
rules we divide our grammar into the following components:-

    1. Phonological component.
    2. Morphological component.
    3. Syntactic component.
    4. Semantic component.

        These components will only be possible in a grammar
like N.G.G. which separates phonological from morphological
rules. These types of divisions are exemplified in the
works of Vennemann and Hooper given in the bibliography.
For the division between phonological and morphological
components see Hooper (1973).

In some generative schools the above components are
not distinguished. In the American Standard Theory i.e.
Transformational Generative Grammar, as exemplified by
Chomsky and Halle (1968), there is no division between
morphological and phonological components. The two
components are grouped together in one component which
this grammar treats as phonological. For the Transformational
Generative Grammar (hence T.G.G.) the above four components
will be reduced to three.

In N.G. G. the four components work in conjuction
with each other. One component fills certain information
on which the next component acts eg. the phonological
component will not play its role in generating surface
structures unless all other components have filled in
the necessary information. These components are therefore
separate but work together.

This chapter will discuss the morphological differences
that exist between the dialects of our study. We shall
limit our discussions to that level of differences unless
it is necessary to explain a given change by using
phonological evidence. This may be necessary where
morphological differences may have been started by
phonological rules.

2.1. Lexical differences

Certain lexical differences play an important role
in fixing dialect boundaries. One can be easily detected

as a stranger by using lexical items his/her hearers

consider to belong to another dialect.

In order to exemplify what is meant by lexical

differences and to show why it may, at times, be embarrasing

to use a given word we have the examples in 1. These

examples came from list of lexical items that were tested

in all the dialects. The words are given in appendix 3.

These words were chosen because they showed the most

serious differences.

For a sample of lexical differences we have the folowing

examples:-

1.	Embu	Mboere	Gichugu	Ndia	Mathira	N.d	S.d.	Gloss
1	ɓoku	eː	eː	eː	eː/oru	oru	oru	bad
2	ɲʈara	mɔːkɔ	ɲʲara	mɔkɔ	mɔkɔ/ ɲʈara	mɔkɔ ɲʈara	mɔkɔ	arms
3	evu	evu	nda	nda	nda	nda	nda	abdomen
4	modita	moɓude	motsude	motiɲɔʊ	motiɲɔʊ	motiɲɔʊ	motáɲɔʊ	tail
5	moɓude	modita	modita	modita	moɓude	moɓude	moɓude	penis
6	ʃitwa	gwatwa komɛrwa	ʃitwa	ɲitwʊ	ɲiːtwɔ	ɲitwɔ	gwatwɔ	be raped
7	gwata	gwata	gwata	gwata	gwata	gwata	ɲita	hold.
8	erwa	manoa	manoa	manɛa	manɛa	magekea		dug out lumps of grass
9	gera	gera	gera	gera	gera	gera	gera	go far
10	eɓera	eɓera	gera	gera	gera	gera	iʲera	come for
11	ɲaria/ viɲora	viɲora	kudoka	tɛɲɛra	tɛɲɛra	tɛɲɛra/ laɲoka	ɛɲɛra	run
12	ndaːre	ndaːre	ndeine	ɓeine	deine	dein(i)e	deinʊ	inside
13	ndoro	kaɲɛɲɛ	mberebere	mɓotswa/ moiribiri firi	mbiri firi	firifiri	wiribiri	pepper.

As stated earlier these words come from a list of fifty
words that were selected from a total of six hundred words.
No percentages are used for examples in 1 because the
number of items used for the lexical test is too small
to be the basis of any meaningful percentages. As these
items show the dialects are very closely related.

The above words are not in any way unusual. They
are the words that one finds in everyday usage. It is
therefore not surprising that one could easily be heard
using some of them even when people of different age sets
may be present. The most unusual word for most people of
this region is no. 6. This word means 'rape' in most
parts of S. dialect. In the rest of the region the word
means 'take hold of'.

When a speaker of any other dialects says gwata mwana
'take hold of the child' people of S. dialect appear most
embarrased. To them that is naughty if noft stupid. They
are quick to ask one where he/she comes from. Usually
they do not explain why they ask that, they simply
keep quiet. If the audience is a mixed one, i.e. parents
and children, the word is highly resented.

The most embarrasing pair of words is 4 and 5. Note
that the word for tail in Mbeere is the word for penis in
Embu. The same relationship exist between the Gichugu -
Ndia group and the western dialects. One finds himself
embarrased when he asks people what they call, say a tail,

in their local dialect just to be met by hostility and
refusal to answer any other questions from him. The
same happens when one says, 'the tail is x in y dialect;
What do you call it here?

I found myself in such a situation when I asked my
Embu informant to tell me what she would call a tail. She
seemed not to remember so I began to give her the names
given by other informants. When I mentioned moßude she became
so embarrassed that I was forced to skip the word. In
Gichugu I asked an old woman to tell me what they call a tail.
Her answer was that she was tired and that I had too many
questions. When I realised that she was avoiding the answer
I asked her whether she would answer other questions if
I skipped that one. She replied that she was willing to
answer other questions. My informant from Ndia (an old
man aged over 60 years) replied that the word for tail,
'mixes with male private part in Kikuyu' thus he was not
willing to say it.

The above discussion is a reflection of embarrasments
caused by dialectal differences which may have resulted
from semantic shifts. Even where words are not embarrasing,
people are quick to point out that one is of this of that
dialect because of his vocabulary. One such a case is
the use of the word njara in S. dialect. To them
anybody who says njara must be from Nyeri.

Such quick conclusions and statements such as 'You are
from Nyeri.' correspond to the Americans' "You have an
accent." Nobody seems to realise that he too has an
accent depending on who is making the judgement. To
Gichugu - Ndia speakers everybody who does not speak the
two dialects or Ki-Embu and Ki-Mbeere is **Mokabete** i.e.
from Kabete which means that he is from the western dialects.
To Embu - Mbeere speakers anybody who does not speak any
one of these two dialects and who also does not speak
Gichugu is **Mogikuu** i.e. Mkikuyu. To the western dialects'
speakers everybody else is either from Mathira or Embu.
To them Gichugu, Ndia and Mbeere do not count as different
dialects.

All the above names are different ways of saying,
'You have an accent or you are different from us'. Of
course these statements are not based on one component of
grammar. They are based on all components and features of
linguistic variation. I remember asking one Kiambu
informant what he considered to be typical Nyeri dialect.
He answered by pronouncing words with (t) and (d) e.g. (mòté)
'tree' (Mò:ndó') 'person' etc. The way he pronounced these
words was very much like the Northern dialect. His point
was that these sounds are produced at retroflex, i.e. in
Northern dialect, but with more of alveolar articulation
in S. dialect. For this informant the point of articulation
was more crucial than lexical differences.

2.2.1. Morphological differences.

In this section we shall deal with the differences
that exist between the dialects in as far as morphemes
are concerned. The word morpheme has been defined in many
ways. Traditionally it was used to mean the smallest unit
of meaning. It has also been called a unit of distribution
and some other people would use morph instead of morpheme.
We do not feel that a definition is necessary for our
purposes. We shall not therefore join the list of those
who have defined it.

The reasons for the use of the term morpheme becomes
obvious when we start exemplifying and discussing units
of meaning. Whether one calls them morphs or morphemes is
not necessary. What is important is the fact that some of
these units are different in different dialects.

In 3.1. and 4.1.2. we have stated that Gichugu and
Ndia are very similar in a number of respects. These
include sound structure. In this section we shall show the
different morphological structures that exist between
these two similar dialects. This is therefore one of
the most important sections in establishing the divisions
between these two neighbouring dialects. Other section
include 4.1.2. which shows some differences in phonological
rules.

2.2.1.2. Positive Tenses:

In this section we shall deal with negative marking tenses only. The reason for doing this is that certain morphemes, e.g. those marking persons, have different allomorphs depending on whether we use negative or positive tenses (cf. examples in 2, 4 and 9). In order to give a proper coverage of these allomorphs it is necessary to consider the tenses separately.

In S. Mt. Kenya one finds many morphemes that mark tenses. In this section our discussions will be, mainly, focused on those tense morphemes that help us in fixing dialect boundaries. A few tense marking morphemes will be discussed in order to show that these dialects are in one group i.e. the whole region belongs to one linguistic group. There will be some morphemes that will be cited because they have extended their domain in some dialects but not in all.

Among the tense morphemes that have grouped whole of S. Mt. Kenya into one linguistic region are:- (1) the progressive tense - ra - (ii) the past participle -a- (iii) the immediate future -ko- and the distant future -ka-. All these tense morphemes are the same in all the dialects. To exemplify this we have the following examples:-

2.

	Embu	Mbeere	Gichugu
(a)	ne ná:rjà	né na:rjà	nè ndà:rjà
	ne wá:rjà	nè wa·rjá	nè wà:rjá
	nèwàrjà	néwàrjà	njárjà
(b)	néneràrjà	néneràrjà	nénderàrjà
	njóràrjà	nó:ràrjà	njóràrjà
	njàràrjà	nɔ̀:ràrjà	njáràrjà
(c)	néngòrjà	néngòrjá	néngòrjà
	nó:kòrjà	nó:kòrjà	njókòrjà
	nò:kòrjà	nó:kòrjà	njàkòrjà
(d)	ne:ŋgárjà	ne:ŋgàrjà	néngà:rjà
	nò:kárjà	nò:ka:rjà	njòka:rjà
	nò:kàrjà	nò:kàrjà	njàka:rjà

Ndia	W. dialects	Gloss
nè ndàːrjà	nè ndárjà	I have eaten
né wàːrjà	né wáːrjà	You have eaven
njàrjà	njàrjàː	He has eaten
nendérárjà	nendérárjá	I am eating.
njórarjà	njórárjà	You are eating.
njárárjà	njárarja	He is eating
neiŋgorjà	néːŋgorjà	I will eat (now)
njokórjá	njokorjá	You will eat (now)
njakorjá	njakorjà	He will eat (now)
nengárja	neŋgàːrja	I will eat (now)
njokárja	njokaːrja	You will eat (now)
njákáːya	njakárja	He will eat (now)

The tense marker in (a) is -a-,. The first (ne) is a separate morpheme which has different syntactic functions which are not relevant to our study. The n- or nd- that follows (ne) is a marker for fi.st person singular.

In (b) tense is marked by -ra- while in (c) tense is marked by -ko- which changes to (go) after n-. In (d) the tense is marked by -ka- which changes to (ga) after n-.

Examples in 2 show that the four tenses are marked by the same morphemes in all the dialects. There are, however, changes in both tone and the surface realisations of the personal pronoun   For further information on the surface differences see 2.2.3. and 4.2.4.

Among the positive tenses that show surface differences are the (unmarked) past tense -irɛ, The mid future -re- and the verb to be -re-. The term unmarked is used here means that -irɛ is the most general past tense marker. When -re occurs as the only tense marker it is suffixed to the verb-root. In such cases this morpheme stands for past today e.g. akɔm-irɛ haha 'he slept here (before yesterday)

This unmarked past tense morpheme surfaces as -erɛ in Embu, Mbeere and Gichugu if the verb-root ends in /e/, e.g. 3a and 3b.

3a	Embu	Mbeere	Gichugu	Ndia	Gloss
	néndê:rέ	nénde:rέ	néndé:rὲ	néndeîrὲ	I ate (today)
	nô:ré:rὲ	no:ré:rὲ	njoré:rέ	njoreîrέ	You ate (")
	nô:ré:rέ	no:ré:rὲ	njáré:ré	njareîrὲ	He ate (")
3b	no:kamirέ	no:kamirὲ	njákámirὲ	njákamirὲ	He milked (today)

4.	Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
(i)	ŋga:rja	ŋga:rja	ŋga:rja	ŋga:rja	nde:rja	'I will eat (today)
(ii)	oka:rja	oka:rja	okárja	oka:rja	orerja	'You will eat'
(iii)	aka:rja	aka:rja	aka:rja	aka:rja	arerja	'He will eat.

Surface forms in (i) come from /n-ka/ and /n-re/ respectively

The above differences should be accounted for by
the phonological rules. The three eastern dialects
have a marger of /e/ and /i/ into e: . We have given
this change here because it helps to separate Ndia from
Gichugu.

2.2.1.3. Mid future tense

In S. Mt. Kenya this tense is marked by -re-. The
eastern dialects including Ndia do not have this tense
in positive structures. In negative structures this tense
surfaces in Ndia and in western dialects (cf 2.2.2.).

For the eastern dialects this tense has been replaced
by the unmarked (most general) future tense marker -ka-
The differences between the two dialect groups are as
shown in 4.

From examples in 4 it is clear that the mid future
tense -re- has disappeared from the eastern dialects.
Its disappearance has reduced the future tense morphemes
from three to two i.e. from -ko-, -re- and -ka- to -ko-
and -ka-. This change need not be derived by a rule.
It should be assumed that these eastern dialects do not
have this (-re-) tense in their underlying representations.

The western dialects have kept this tense morpheme
unchanged. If our grammars are to reflect the intuitions
of native speakers of the languages or dialects for which

they are written such morphological differences must be
revealed. This statement raises the question of whether
or not the dialects have the same underlying representations.
This question is answered in chapter five of this study.

2.2.1.4. The Verb 'to be'

The morpheme that marks the verb to be is -re-.
This morpheme has been reduced to -e- in a number of
dialects. Only Mathira and Northern dialect have not
reduced this morpheme. For the purposes of exemplification
we have examples in 5.

5.

Embu	Mbeere	Gichugu-Ndia	Mathira-N.	S. dialect	Gloss
aevo	ɛːvɔ	ɛːBɔ	arehɔ	ɛːhɔ	'He is there'
aena	ɛːna	ɛːna	arena	ɛːna	'He has'
eːna	eːna	eːna	erena	eːna	'It has (9)'

Note that in Embu, Mbeere, Gichugu, Ndia and Southern
dialect there is no liquid before -e- Except in Embu
a combination of /-ae-/ has collapsed into $[\varepsilon]$. This
is not relevant to our present discussion. The change that
has occurred in the five dialects can be accounted for by
rule 6.

6. In Embu, Mbeere, Gichugu, Ndia and S. dialect

   -re > e.

This change can also be accounted for by a phonological rule
(cf. 4.3.2.4).

When the above change is accounted for on phonological
grounds certain problemes arise. Note that in 4.3.2.4.
this reduction is treated a liquid deletion. This liquid
deletion has not applied to -re- class 5. prefix. The
only dialect in which liquid deletion has applied to class
5 prefix Mbeere (cf. 2.2.4). For the Sourthern dialect,
for which liquid deletion was formulated, the liquid is
deleted when the root begins a consonant e.g. ___inɛnɛ___
'big (cf. 5) but rjɛga 'good (class 5)'.

The reasons for rejecting rule 6 as a phonological
rule are revealed by the list of class prefixes given in
2.2.4. together with the above arguments. These leave us
with only one alternative i.e. morphological reduction. By
morphological reduction we mean that what is reduced is -re-
verb to be but not every occurence of -re-. In order to
limit this rule to the morphlogical level of our grammar
the morphological information of (+ verb to be) must be
included in the rule. This means that only one morpheme
is affected and no other -re-.

If the reduction was a phonological rule with phonetic
motivations all liquids before /e/ would be reduced.
Failure to have such a general rule shows that this is
not a phonological rule.

It should, also, be pointed out that this morpheme has
a number of different surface meanings; Apart from
being the verb 'to be', it can also mean , at, with or in
possession of. The implied meaning will depend on the
context in which it is used.

2.2.1.5. Negative Tenses

In negative structures Gichugu is seen as the odd
dialect in the whole region. This dialect has the largest
number of divergencies from any other dialect. It has
the minimum number of negative tense markers in this
region. In the examples given in 7 -ti-/te- stands for
'not' i.e. negative. The gloss given is the tense
negated by -ti-/te-.

	Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
1.	ti-ra	ti-ra	te-ra	te-ra	ti-ra	progressive
2.	ti-na	ti-na	te-ra	te-na	ti-na	past participle
3.	ti-na	ti-na	te-na	te-na	ti-na	past today
4.	ti-na	ti-na	te-na	te-na	ti-na	past yesterday
5.	ti-a-irɛ	ti-a-irɛ	te-a-irɛ	ti-a-irɛ	ti-i-irɛ	past distant
6.	ti-a-na	ti-a-na	te-a-na	te-a-na	ti-a-na	past participle
7.	ti-ko	ti-ko	te-ko	te-ko	ti-ko	imm. future
8.	ti-ka	ti-ka	-te-	te-re	ti-re	future today
9.	ti-ke	ti-ka	te-ka	te-ka	ti-ka	future (distant)

From these tenses it is clear that even though Gichugu
and Ndia have identical sound structures the same is

not true of their morphological structures. These two
dialects have ' te ' while all other dialects have -ti-.

The change from °ti to -te- in Gichugu and Ndia is
not due to a general rule of vowel lowering. The
existence of a general lowering rule is dismissed by
such words as elima 'hole' < • °re-rima. The
lowering must have affected a number of morphemes only.
To generate this -te- from °ti we have rule 8.

8.   In Gichugu and Ndia °ti > te.
Rule 8 is not a phonological rule, it is a diachronic
morphological change.

To exemplify the surfacing of all the morphemes
shown in 7 and to do it adequately would take a lot of
space and require many examples. We feel that this is
not necessary simply because no single structure will
pass through all the above tenses and dialects without
undergoing some changes. We have therefore chosen to
pick out one structure and run it through all the tenses.
The structure will not surface with the negative tenses
as shown in 7 but will reveal the necessary dialectal
differences. One of the changes from the underlying
representation is the voicing of /t/ into [d] after n-
For this reason /n-ti-/ will surface as [ndi]. This
and other changes that may be noticed will be revealed
in 7.

9. | **Embu** | **Mbeere** | **Gichugu** |
|---|---|---|
| ndiraːrja | ndiraːrja | nderaːrja |
| ndinarja | udinarja | nderarja |
| adinarja | ndinarja | nderarja |
| ndinarja | ndinarja | ndérarja |
| ndjarja | ndjanarja | ndjarja |
| | | |
| ndikorja | ndikorja | ndekorja |
| teːndja | | |
| ndikâːrja | ndiːrja | ndeːrja |
| teːndja | | |
| ndikaːrja | ndikarja | udekaːrja |

₅₇

Ndis	w. dialects	Gloss
ndoraːrjá	ndiraːrja	'I am not eating'
ndenarjá	ndinarja	'I have not eaten'
ndenarja	ndinarja	I did not eat'(T)
ndenarja	ndinarja	I did not eat'(yₐ)
ndjanarja	ndjareir	'I did not eat'(I a)
	ndjanarja	'I never ate.'
ndekorja	ndikorja	'I will not eat'(N)
ndorerja	ndirerja	' I will not eat'(T)
ndekaːrja	ndikaːrja	'I will not eat'

As stated earlier Gichugu has reduced its negative
tense morphemes. For the past tense structures this
dialect has generalized the use of -te-ra- in nearly all the
structures. The only past tense morpheme that has not
been replaced by -te-ra- is the distant past i.e. past
beyond yesterday, which is retained as -te-a. Some
informants said they would use -te-na for past (limited)
tense e.g. [ndaːnarja] 'He did not eat (during that
period). This, could also mean, 'He has never eaten.
For the surfacing of -nd- instead of °a-te, which is the
expected form see 4.2.4. and 2.2.2.

According to the above structures Ndia is closer to
the western dialects than to Gichugu. These tense
morphemes reveal a clear division between Gichugu and
Ndia dialects. Tone too plays an important role in
distinguishing these two dialects from each other. In
general Ndia tones do not agree with either those of
Gichugu or the western dialects. This may be due to the
fact that Ndia lies between the two main dialect groups
i.e. eastern and western.

In conclusion it should be noted that even though
the two dialects of Gichugu and Ndia have identical
sound structures they differ in their morphological
structures; For Gichugu there is a tendency to generalize
one tense combination for all past tense structures.
Ndia does not have this tendency. A similar difference

was shown to exist in the lexicon (cf. 2.1.). These were
some of the reasons for the separation of Gichugu and
Ndia as different dialects. To group these two dialects
together would have necessitated the positing of a
number of abstract representations. Since our theory
aims at reducing abstraction in the underlying representations
the grouping of these two dialects as separate is justified.

2.2.2. <u>Personal Pronouns</u>

When talking about personal pronouns one must
distinguish between bound and independent allomorphs.
The distinction is necessary because they do not behave
the same. Bound allomorphs behave like class prefixes
in that their surface realization depends on the structure
of the root. Apart from that the morpheme marking
the person will depend on what type of a root is used.
If the root is an adjective we have one type of marker and
when the root is a verb we have another. All these
will become clear when we exemplify them.

Before we exemplify any of these morphemes and
allomorphs we should point out that any table of morphemes
and allomorphs that will be given will not be able to
reveal all surface forms. Some of the surface forms can
only be generated diachronically. Such diachronic
forms will be shown and their origins discussed.

With the above comments in mind we are now in a
position to exemplify the dialectal differences that
exist in these morphemes. The following is what is to
be expected as independent personal pronouns of S. Mt.
Kenya dialects. These have no different surface forms:-

As stated above   these morphemes are realized as
shown when they occur in isolation. In bound structures
some of the above persons are marked by slightly
different allomorphs. In their most general forms the
bound allomorphs can be summarised as follows (in verbal
structures):- (see 11)

When prefixed to the adjectives the first person
sg. surfaces as ne- in Embu and Mbeere but as nde- in
all other dialects. All other pronouns are prefixed to
-re- 'verb to be' in such positions.[1]   This means that
the first person plural will surface as -toe- in Mbeere
and S. dialect and -to-re- in all other dialects. The -re-
is the verb to be.

Let us now go back to our independent morphemes in
10 and consider their historical development. From the
present dialectal   forms we can reconstruct the following
as the proto roots of personal pronouns in S. Mt. Kenya.=

10. Person:		Embu	Mbeere	Gichugu
1st person	sg.	njé	rjé'	nĩó
"	" pl.	twé	dwé	twi:o/du:o
2nd person	sg.	wέ	wέː	wέó
"	" pl.	mué	mué	mwi:o
3rd person	sg.	kέ (wὲ)	wέɛ	wέ
"	" pl.	ɔ́	ɔ́	mɔ́

11. Person		Embu	Mbeere	Gichugu
1st person	sg.	ne/a	ne/n	n
"	"	to	to	to
2nd person	sg.	o	o	o
"	" pl.	mo	mo	mo
3rd person	sg.	a	a	a
"	" pl.	ma	ma	ma

Ndia	Mathira	w. dialects	Gloss
nɛɔ	njɛ/niɪɔ	njɛ	I
idue	idue	idue	us
wɛ:	wɛɛ/wɛɔ	wɛɛ	you
ɪɲwe	iɲue	iɲue	you
wɛ	wɛ:	wɛ:	him
nɔ	nɔ	ɔ	them

Ndia	w. dialects	Gloss
n	n	I.....
to	to	we....
o	o	you...
mo	mo	you...
a	a	he....
ma	ma	they..

12.
1st person sg.	* ní
" " pl.	* tu
2nd person sg.	* wɛ́
" " pl.	* mu
3rd person sg.	* wɛ̃
" " pl.	* ba

From these proto - forms the independent morphemes
were generated by adding the reflexive morpheme -e- to
the root thus getting /nis/, (tue/, */wɛe/ /mue/,
*/wɛe/ */Bae/ respectively. For the second person
singular and the third person singular the only distinction
seems to have been tone. There seems to have been a
problem of distinction between these two thus lengthening
being used to show the difference. Even that did not solve
the problem. What seems to have been used as a distinguishing
factor is vowel collapsing and loss of -e-. Some dialects
lost this -e- while others collapsed - ɛ- and -e- into
-ɛ:-, in one number and not the other.

The Gichugu dialect seems to have deviated from the rest
by using -o- as a suffix to personal pronouns. This -o-
is likely to have come from the relative -e-. This -o-
relative is found in classes 1, 3, 14 etc. Note that
Gichugu solved the problem of distinguishing second person
singular from third person singular by adding this -o-
to the second person but not to the third. To us this
should be a trigger to show that speakers had some difficulty
in distinguishing these two from each other.

For the third person plural we have a problem in that we have -ɔ- and not -ɔe- as the above discussion indicates. The most plausible analysis would be that [ɔ́] comes from °Bɔe. This is not a strange proposition especially when we consider that °pa changes to °pɔ > Vɔ in the same region. For further discussion and exemplifications of this vɔ see 2.2.4. According to this proposition [ɔ́] comes from °Bɔ relative and not from °Bae.

The other point that we ought to consider is why this [ɔ́] should surface as [mɔ́] in Gichugu, Ndia and Mathira This is dealt with in 2.2.4. under class prefixes. The surfacing of this nasal is analogical (cf. 2.2.4.).

In concluding this section let us consider why °tu changed to -du - in Mbeere Ndia and western dialects. We shall, also, consider the change of mu to nu in the same dialects. As indicated in chapter 3 we have certain°ts that changed to /d/ (cf. 3.1). These were mainly in roots that were prefixed with °n of classes 9/10 or 1st person singular. We are inclined to think that the change from °tu to du was either under the same influence of °n or on analogy to the change of some °/t/s to /d/.

The change from °mu to nu in a very strange one. If we assume, that this was a case of palatalization we shall have a crazy rule that palatalizes /m/ before [u]. This type of palatalization is disqualified by the fact that the dialects that palatalized °/n/ before [u] are the ones

with which we get /mu/ today. The dialects that did not palatalize °/n/ before [u] are the ones with this ∫u < °mu. Note that in eastern dialects °kanua 'mouth' has changed to kapwa while western dialects have kanua.

The facts given above lead to the conclusion that the change from °mu to /nu/ cannot be explained in a clear sound change. Whatever might have caused the change it it not likely to be a phonological change. It may have been some type of borrowing. Even this is not explained.

The most likely source of this change is Ndia where both nwa 'drink' and kapwa 'mouth' are found. This dialect may have had a rule of palatalization that was wrongly generalized to °mu and which was later borrowed by other dialects. As stated above only Ndia has both nwa and kapwa while other dialects in the west have kanua for 'mouth' and nwa 'drink'. Despite this we cannot conclusively claim that the change from °mu to nu began in Ndia.

Note that this change reveals that not all changes will be phonologically natural. Even though   most sound changes are caused by phonologically natural rules we should not fail to see the unnatural ones. Some changes like the above may be (totally) phonetically unmotivated.

Having discussed the changes affecting independent morphemes let us now turn to the bound allomorphs. As

we stated at the beginning of this section the surfacing
of bound allomorphs depends on the initial sound of the
verb root. To give an example of the different surface
forms we have the following realizations for the first
person singular:-

13. | Embu | Mbeere | the rest | initial sounds |
|------|--------|----------|----------------|
| n | n | n | alveolars (cons.) |
| m | m | m | labials |
| ɱ | - | - | labialdental. |
| ɲ | ɲ | ɲ | palatals |
| ŋ | ŋ | ŋ | velars |

The above forms are synchronic and are discussed
under phonological rules (cf. 4 4.1.4.). The reasons
for discussing the above changes under morphology will
become clear when we exemplify them in actual words.
Before we exemplify these forms we should point out that
there are many instances of rule morphologization. The
morphologized forms are those generating [m] for the
first person singular even when no bilabial sound is
available.

In cases where [m] cannot be generated from an underlying
labial environment we consider its generation as being
morphological in synchronic grammar i.e. it is diachronic.
The following structures will help to reveal the different
types of morphologization that have occured in the dialects
of this study:-

14.

	Underlying	Baba
(i)	n-iga	m̀bìgέ
(ii)	n-ara	m̀bàrέ
(iii)	n-mga	m̀bùgέ
(iv)	n- na	n̄ nìa
(v)	n-ina	nìnέ
(vi)	n-aneka	nànèkὲ
(vii)	n-ɛnda	nὲːndà
(viii)	n-oŋga	nòːŋgè
(ix)	n-iŋgera	nìːŋgèrέ
(x)	n-uma	ɲ̀ùmέ
(xi)	n-roma	nòmέ
(xii)	n-goroka	ŋgòrokὲ
(xiii)	n-raŋga	nàːŋgέ
(xiv)	n-tara	ǹdàrέ
(xv)	n-raːta	ɲ̀ɟvàːtέ

Mbeere	the rest (Ndia)	Gloss
mbigɛ́	nɟigɛ́	'May I keep'
mbarɔ́	nɟar	'May I make bed'
mbugɛ́	nɟugɛ́	' " I say'
mɔ́nia	nɔ́nia	'show me'
minɛ́	ɲinɛ́	'May I sing'
manekɛ́	panekɛ́	'May I spread
mɛːnda	pɛːnda	'Love me'
poːŋɛ́	poːŋɛ́	'May I collect'
ɲiŋgerɛ́	ɲiŋgerɛ́	'May I enter'
ɲuːnɛ́	ɲunɛ́	'May I et out'
nomɛ́	nomɛ́	'May I bite
ŋgorokɛ́	ngorokɛ́	'May I fly'
naːŋgɛ́	naːŋgɛ́	'May I sleep on'
ndarɛ́	ndarɛ	'May I count'
mbaːtɛ́		'May I sweep'

Looking at the differences between the dialects and the differences between the underlying representations and the surface forms certain changes become very clear. It is obvious that the above roots had different initial sounds from those that are there today. This is true of most of the roots from (i) to (x). These roots had a labial consonant as the initial sound which was later lost.

After the loss of the initial consonants the verbs were retained as if the bilabial consonant was not lost. For the generation of the surface forms the verb were marked as *B roots. The generation of surface forms was based on a class of morphemes and not the initial sound. These are therefore morphologically generated forms and not phonological. Their being morphologically generated justifies our discussing them under morphology.

For dialectal variation note that the dialects west of Embu have generalized all the vowel initial roots as if they had a palatal consonant in their initial positions. This means that after the loss of the labial consonant the roots were reanalysed and classified in the palatal class of roots. Evidence for there having been rule morphologisation is not hard to get. In the dialects west of Embu we have examples such as mbigwerɔ/mbugwerɔ 'hearing organ'. This comes from */n- Bigw-ero/.

Since the root is igwe 'hear' the only justification for
having mb- is through some diachronic °B. The surfacing
of mb- from °n-B is, today, a rare phenomenon in western
dialects.

The above two dialect groups i.e. the mb- group and the
nj- group have each morphologized the derivation of the
first person singular marker but in different ways.
Underlyingly the nj- group has no palatal from which this
[ɟ] comes   and the mb- group has no underlying bilabial
sound from which this [b] comes from. The difference
between the two groups is that the eastern group i.e.
mb- group generates the surface forms from °B roots while
the western group i.e. nj- group has analogically levelled
all vowel initial roots as /e/ roots. For the eastern
group the old °B roots have been retained even after the
loss of °B. The same is not true of the western group.

The purpose of the above discussion has been to show
that we cannot, always, generate surface forms by phonological
rules. The only things that phonological rules would
generate are the different realizations of /n/. Note that
this morphologization of phonological rules is one of
the ways in which natural rules get denaturalized.

The second person plural morpheme has a very
interesting dialectal variation. This morpheme is -mo-
in the prefix positions of verbs. In most parts of

S. Mt. Kenya this is, also, the objective marker of the same person and number. We use most because in some parts of Muranga the objective marker is not -mo- but -me-. The following examples show this -me- objective .

15. Rɛkɛ a-me-tɛidiɛ   'Let him help you (pl.)'

    Okai nde-me-hɛ ɓai   'Come! let me give you (pl) tea.

    Ara-me-etiŋmorarɛga   'He called you (pl) but you refused.

In all other areas of this region the above -me- would be replaced by -mo-.

One interesting thing about this -me- is that in some areas only women and children use it. This is especially true of Mugoiri location where even my women informants agreed with this claim. In all other areas including Njumbi and the area south of Sagana town this -me- objective is used by all speakers.

The source of this -me- objective cannot have been sporadic. It cannot also be an isolated innovation. These two things are ruled out by the vastness of the area in which this -me- is used. The area spreads in the whole of Murang'a from North to south and from west to east. It must have been a feature of a vast number of speakers.

The fact that there are indications that this type of feature covered the whole of Murang'a leads to two possible

origins. The first origin may be from some earlier people
who occupied the area before the present occupants.
The second origin may be a variety of language or dialect
brought by some new arrivals into the area. Of these
two the first seems to be more attractive. Note that if
this feature came from the same source with other dialects
it would have been detected outside Murang'a, but it has
not.

There is another plural marker for the second person.
This is the suffix ni. This morpheme has been reduced
to -i in all the dialects west of Gichugu. The following
comparison reveals the reduction:-

16.

Gichugu	Ndia	Gloss
Okani	okai	you (pl) come.
ugani	ugai	" " say
rjani	rjai	" " eat
kɔmani	kɔmai	" " sleep

These examples show yet another distinguishing factor
between Gichugu and Ndia. In discussing this reduction
under morphology we imply that it is not phonologically
motivated. We have other occurences of (ni) that are
not reduced e.g. mogeni 'visitor'. To generate this
reduction without reducing other types of /ni/ we have
rule 17.

17.   ni $\underset{[\text{suffix}]}{\geq}$ i

Rule 17 will only reduce suffix /ni/ and not any
other. Since [ni] of mogeni is not a suffix it
will not be subject to rule 17.

In conclusion let us go back to the 3rd person plural
marker. At the beginning of this section we claimed that the
plural marker in the proto language was °Ba. Without
further discussions or exemplification there is a likelihood
of getting some objections. Some might wonder how we got
this °B that is never realised in the present day surface
forms. For those who may want to disagree with us we
hope that the following example from Mbeere will de:-

18.   ando   mɛ: ŋge   'other people.'

To us the above structure comes from °/ando Ba+e ŋge/.
For some reason this °Ba got an /n/ prefixed to it thus
deleting °B through the Ganda law. Note that Mbeere does
not have °mɔ for this number which we saw to be present
in Gichugu, Ndia and Mathira.

Further evidence for there having been °B in this
class is to be found in the comparison between -Vɔ and - ɔ-
in Embu. Vɔ stands as the relative for place while ɔ
stands for the relative people. Considering what we said
about °B deletion it is obvious that the presence of °B
is unquestioned (cf. 3.1., 3.1.2.)

2.2.3. Demonstratives

In this section we shall deal with the present day
demonstratives of S. Mt. Kenya (see 19). Our main
concern will be to find out their origins and the sound
changes that have affected them. By origins we mean the
proto forms of the present day demonstratives. For a
list of the three demonstratives see the attached
examples (19). The examples given in 19 deal with nouns
classes exemplified in this section.

To begin with let us look at the $\cdot$-nɔ suffix. This
demonstrative is found in other $B_a$ntu languages as well.
It occurs in some old forms Kiswahili dialects e.g.
huyuno 'this (cl. 1), hikino 'this (class 7).' In S. Mt.
Kenya this suffix has been lost in many classes. The only
classes that have maintained this suffix without dialectal
differences are classes 4 and 9. In many other classes
this suffix is lost. The dialects that have retained it
in a few classes will be shown later.

For classes 4 and 9 we have the following examples:-

19.   (i)   mete   enɔ   these trees (cl. 4)

       (ii)   meːre   enɔ   these bodies (cl. 4)

       (iii)   ɲoːmba   enɔ   this house (cl. 9)

       (iv)   ŋɔːmbɛ   enɔ   this cow (cl. 9)

The demonstratives

(i) near the speaker

Class	Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
4	enɔ	enɔ	enɔ	enɔ	enɔ	these
8	inɔ	inɔ	itsi	itsi	iʃi	these
9	enɔ	enɔ	enɔ	enɔ	enɔ	this
10	inɔ	inɔ	itsi	itsi	iʃi	these

(ii) near hearer

Class	Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
4	ejɔ	ejɔ	ejɔ	ejɔ	ejɔ	those
8	iʃi	iʃi	itsi	itsi	iʃi	those
9	ejɔ	ejɔ	ejɔ	ejɔ	ejɔ	that
10	iʃiɔ	iʃiɔ	itsiɔ	itsiɔ	iʃiɔ	those

(iii) away from both speaker and hearer

Class	Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
4	elea	erea	elea	elea	erea	those
8	ilia	iria	ilia	ilia	iria	those
9	elea	erea	elea	elea	erea	that
10	ilia	iria	ilia	ilia	iria	those.

Those examples will have the same sound structures in all the dialects of S. Mt. Kenya. The only difference to be experienced will be in tone patterns eg. Eastern dialects have <u>enɔ</u> while western dialects have <u>enɔ</u> for both 'these' and 'this'.

Embu and Mbeere have two other classes that take the suffix nɔ. These are classes 8 and 10. For these

two classes we have these examples:

20.	ite	inɔ	these	chairs	(cl. 8)
	indɔ	inɔ	these	things	(cl. 8)
	ɲɔːmba	inɔ	these	houses	(cl. 10)
	ɲama	inɔ	these	meat	(cl. 10)
	ŋɔːmbɛ	inɔ	these	cows	(cl. 10)

In other dialects the demonstratives will be either
itsi or iɟi. The first occurs in Gichugu and Ndia and
the second occurs in western dialects. In other words
these other dialects do not use -nɔ suffix in classes 8
and 10.

For Embu and Mbeere the difference between classes
is marked by the prefix. For classes 4 and 9 the prefix
is [e] but for classes 8 and 10 it is [i]. Note that
both class 4 and classes 8 and 10 are plural classes thus
[i] cannot be interpreted as a plural marker. The same
is true of [e].

The differences between the above dialect groups
ie. Embu and Mbeere in one group while the other dialects
stand together are not limited to classes 8 and 10. Other
classes reveal similar differences e.g. class 5. For
this class see examples in 21.

		Embu-Mbeere	The rest	Gloss	
21.	(Madiga)	mama	maja	'these (stores)	cl. 5
	(Magona)	mama	maja	'these (monkeys)	cl. 5
	(Maru)	mama	maja	'these (knees)	cl. 5

Having looked at examples in 20 and those of 21 we can now go back to the question of sound changes that resulted into the present demonstratives. It is obvious from these examples that at one stage these dialects had two types of demonstratives. The first one was °nɔ suffix that was used for all or for most of the classes. The second one was the duplication of the class prefix. The duplicated class prefix functioned as a demonstrative. In Embu and Mbeere the first demonstrative is still important while in other dialects the duplicated prefix has gained prominence.

After the development of the duplicated prefix as an important demonstrative, certain sound changes took place which led to the present day forms. We shall come to these changes shortly. After analyzing the existing demonstratives and class prefixes we can reconstruct the following as the proto-prefixes:-

22.

Class	Prefix
1	mo
2	Be
3	mo
4	ɛe
5	re
6	ma
7	ke
8	Bi

Class	Prefix
9	ni
10	ni
11	vo
12	to
13	ka
14	Bo
15	ko
16	Pa
17	ko

Of these classes 1, 2, 4, 9 and 10 prefixes are not used as demonstratives in any of the dialects. Of the remaining 13 prefixes 4 have undergone changes. These are for classes 2, 8, 14 and 16. The changes affecting these classes have resulted in the above dialectal variations (cf. examples 20 and 21).

The changes affecting classes 2 and 14 are identical. These can be stated in the following manner:-

23. **Underlying**   **Reduplication**   **Gloss**

*Ba $>$ BaBa $>$ aja   these cl. 2.

*Bo $>$ BoBo $>$ ojo   this   cl. 14.

The above changes show the loss of a voiced bilabial fricative and the gliding of the same fricative in the intervocatic positions. The *B loss is discussed in 3.1. and 3.2.2. The gliding needs a few comments.

It is not necessary to have had gliding taking place
in all intervocalis positions. It might have happened
between two low vowels i.e. a-a. It may also have happened
between two identical nonfront vowels only. Whatever the
environments the change from °B to /j/ is a crazy rule.
It is one of those rules that are attested in languages
but which are unnatural.

After the gliding of °B between /a/s and the loss of
the same sound in all non-nasal environments (cf. 3.2.2)
we could get glide insertion between certain vowels. This
may have taken place in the same environment that had lost
a consonant. The claim we are making should not be seen as
if it is a strange and an ad hoc change. Note that in
Embu we do not have this [j]between two /o/s e.g. for the
western dialects' gekojo. ojo etc Embu has gekoo, oo
for 'Kikuyu' and 'this class 1.' The change of °B into
/j/ between /a/s could, later, be generalized on analogy to class
2 structure ie. BaBa > aja and BoBo > oo > ojo on analogy to aja.

Note that the presence of j in class 6 demonstrative
must have been generated analogically. As exemplified in
19 ma- was reduplicated into mama 'these (class 6).' The
dialects west of Embu changed °Mama to 'maja' 'these class
6.' In these innovative dialects -ja was interpreted as the
root for demonstratives while ma- was interpreted as a class
marker. For Embu and Mbeere the whole form i.e. mama
was a single morpheme.

In the above discussions we have claimed the historical reduplication of class prefixes in order to form demonstratives. Now we turn to the discussion on how ići 'these (classes 8 and 10), came into being. According to the table in · class 8 had °ḍi as its prefix. This prefix was reduplicated into °BiBi. After this the normal changes affecting °B operated (3.2.2). There was, however, another change that seems to have occured and interrupted the changes affecting °B. This change is as follows:-

24. °B > ts /-ia

Rule 24 generated the following structures:-

24.	Proto-forms	attested forms	Gloss
	°Bi-ara	ćiara	bear (child)
	°Bi-ana	ćiana	children (cl. 8)
	°Bi-aku	ćiaku	yours (cl. 8)
	Bi-ake	ćiake	his (cl. 8)

Rule 24 must have operated before °/B/s dropped out in all non-nasal environments. If °B less had taken place before rule 24 we would not have gotten the examples in 25. What happened is that after rule 24 °B loss took place and deleted all the °/B/s that did not alternate with rules-.

After °B loss the class 8 prefix became [ii] 'these (cl. 8)'. This demonstrative is found up to today especially in old people. In such people's speech one hears iḍaka ii 'these bushes (cl. 8).' What seems to have happened is that class 8 demonstrative developed a

number of surface forms. These were si- for the class
prefix mainly in nouns and in possessives, i- as a prefix
on adjectives e.g. ite inênê 'big chairs,' and finally
ii as the demonstrative for the same class. All these
varieties are to be found in this region.

The speakers of these dialects have followed a trend
of minimising these surface forms. The form that is
winning over others is -tsi- or -si- depending on the
dialect. This is interpreted as the root for the demonstrative
and is then prefixed with i- to make itsi or iši . For
Embu and Mbeere -inɔ- is used as a demonstrative for this
class and also for class 10. They do however use ši- in
the possessives e.g.

26. Mbori inɔ ne šiao 'Whose goats are these?'

    ŋɔ:mbê inɔ ne šiakwa 'These cows are mine'.

The western dialects will always replace in with isi-
but everything else is the same. Here we see a case of
paradigmatic regularization taking place at different rates
in different dialects.

From the above discussions and examples we note that
the reduction of allomorphy within the (demonstrative)
paradigm is a major force to be reckoned within language
change. This force has led to the unnatural rule at °B >

ts or š (rule 24). This rule is motivated by the force
of paradigmatic regularity. It is not a regular sound

change that one finds in many languages.

To conclude the discussion of the historical development
of the demonstratives, let us consider the changes affecting
class 16 demonstratives. Examples in 22 show that this
class had *Pa as its prefix at the proto-language stage.
This prefix was reduplicated to *papa to form the
demonstrative. Through a process of changes that we called
P-lenition (cf. 3.2.2) this form has become ava in Embu and
Mbeere, aBa in Gichugu and Ndia but haha in western
dialects.

The reduction from *papa to ava and aBa, through
p-lenition, operated differently in different dialects
(cf. 3.2.2). In the four eastern dialects the process of
p-lenition deleted initial */p/s after they had weakened.
This stage (of deletion) did not occur in western dialects.
Instead of this stage the western dialects changed the
bilabial sound into a glide hence /h/.

2.2.4 **Noun classification and class marking.**

In 2.2.3 we touched on the proto-class prefixes. We
also discussed how proto-class prefixes were reduplicated
and changed in the process of the creation of the present
day demonstratives. In this section we shall deal with the
classification of nouns and the present day class markers.

In most classes nouns are classified on the basis
of the concord (i.e. what is assumed to be the concord).

If a new noun is borrowed from other languages it may go
to different classes in different dialects. The general
tendency, however, is to place all nouns without class prefixes
in classes 9/10 unless they denote human beings. This
placing is only a tendency and not a general rule. If it
was a general rule all dialects would put such nouns in
the same classes but this does not happen.

At times, a new noun is classified in a given class
due to the influence of what is already existing in the
dialects. A good example of such a noun is Burana 'pull-
over', (borrowed from English(Flannel) through Kiswahili
'fulana). This noun is placed in classes 9/10 in most
dialects but in Southern dialect it is in classes 14/6.

The reasons for classifying Burana in classes 14/6
is due to other nouns that begin with the same sound and are
in the same classes. Such nouns include Bororí 'country'.
We also have Bundi 'tailor' which is in classes 1/6 due to the
fact that it denotes human beings. Note that Bundi is also,
a borrowed noun i.e. from fundi (Kiswahili).

In other dialects this noun is placed in classes 9/10
on the basis of the tendency that puts all nouns without
class prefixes in these two classes. These two different
placings mean that the above noun has different class
markers in different dialects e.g. Burana Mwiza 'good
pull-over', (in Southern dialect). In other dialects the

structure would be 'Burana njɛga' or ᴀᴠurana mbɛga'
depending on the dialects. In this case the class prefixes
are ᴍo- for Southern dialect and n- for others (with other
changes n> mb ; n > nʄ due to analogical levelling).

Before we discuss other changes that affect prefixes
let us look at the prefixes that exist in our region of
study. In the following table some classes have two surface
forms. The first one occurs in verb initial positions while
the second one occurs in adjective initial positions (i.e.
primary and secondary pronouns).

According to table 27 certain changes have taken place.
The first of these is in class 2. In this class the verbs
are prefixed with ma- in all the dialects. The same class
has a- as its marker in the prefix positions of adjectives
except in Gichugu, Ndia and Mathira where ᴍe- is the
generalized class marker. For these three dialects
structures such as ando ᴍaMurang'a 'people of Murang'a',
are the norm while all other dialects would say, ando a
Murang'a. Speakers of the three dialects would also say,
aja nem 'these are the ones;' while others would say,
aja neꞵ .

When Gichugu, Ndia and Mathira people produce these
forms outside their own areas they are immediately detected
as strangers. The interesting thing about this ma-
generalization is that it is seen as a Nyeri thing especially
by people from the Southern and some parts of Northern

27.	Proto form	Embu	Mbeere
1	mo	a/mo	a/mo
2	Ba	ma/a	ma/a
3	mo	o/mo	o/mo
4	me	e/me	e/me
5	re	re	e
6	ma	ma	ma
7	ke	ke	ke
8	Bi	i/i(nd	n
9	n(i)	n	n
10	n(i)	n	n
11	ro	ro	ro
12	ka	ka	ka
13	to	to	to
14	Bo	mo	mo
15	ko(inf)	ko	ko
16	pa	va	va
17	ko(pl.)	ko	ko
18	ko(in.)	ko	ko

Gichugu	Ndia	Mathira	W. dialects
a/mo	a/mo	a/mo	a/mo
ma/ma	ma/ma	ma/ma	ma/a
o/mo	o/mo	o/mo	e/mo
e/me	e/me	e/me	e/me
re	re	re	re
ma	ma	ma	ma
ke	ke	ke	ke
i/n	i/n	i/n	i/n
n	n	n	n
n	n	n	n
ro	ro	ro	ro
ka	ka	ka	ka
to	to	to	to
mo	mo	mo	mo
ko	ko	ko	ko
Ba	Ba	ha	ha
ko	ko	ko	ko
ko	ko	ko	ko

dialects. People are often asked whether they come from
Nyeri but those who produce this type of structure know
that it is a Mathira (thing) feature.

Other classes that show certain variations are class
1, 3, 4 and 8. These are the classes that have one form
for verbs and another for adjectives. Of all these
classes only class 8 can generate the present day vowel
through sound change i.e. i- $<$ *Bi. The loss of *B in
such positions is accounted for through normal sound
change (cf. 3.2.1). In other classes, except class 2,
the vowel initial positions cannot be generated through a
clear sound change.

The vowels found in initial positions of verbs in
classes 1, 3 and 4 are likely to have come through
certain unclear analogical levellings. Note that for all
these classes we would need a rule that deleted *m in
verb initial positions and not anywhere else. Such a rule
would be ad hoc and unmotivated. We therefore reject any
ad hoc rule that deletes *m in verb initial positions.

There is an important and interesting variation that
is revealed by a comparison of dialectal forms of class
markers. A part from the differences in prefixal forms
we find some form of double markers in one structure. The
second marker seems to be inserted in the root. To
illustrate this we have examples in 28.

28.

Underlying	Mbeere	Gichugu
(n-ge) *ɔ-ɔ-n-dɛ	jɔndɛ	jɔndɛ
*ɓu-n-c-ndɛ	guɔndɛ / vɔndɛ	vɔndɛ
*tsi-ɔ-n-dɛ	ßiɔndɛ	tsiɔ:ndɛ
*a- -nd	jɔ:ndɛ	ßɔ:ndɛ

S. dialect	Gloss
ʃɔ: ʤ	'all (class 9)'
wɔ: ʤc	'all (class 14)'
ɓiɔ:ʤɛ	'all (class 10)'
ɔ: ʤɛ	'all (class 7)'.

meant that the [n] prefix could be placed either before
ɔ or between ɔ and tɛ.   One dialect or a group of
dialects may have inserted the prefix in the latter
position thus resulting into the present day root. At
the present time [n] in this root is not separable from
the rest of the root.

The [*n] must have been lost in the western dialects
at an early time. If this *n was not lost the western
surface forms should have been identical to Gichugu. Note
that in western S. Mt. Kenya /nt/ change to [nd]. At the
time this rule was introduced /nt/ had already changed to
vːɟ . The lengthening of the vowel before /ɟ/ suggests
that a nasal was lost and that its place is retained by
vowel length (cf. 5).

For class 14 prefix Mbeere uses ko or o. The surfacing
of /ko/ as go is due to Dahl's law. This appearing of
ko in class 14 shows that there has been an expansion of class
17 prefix. This ko refers 'to place' and also 'in a place.'
It is not strange therefore that class 14 should have ko
prefix.

If what is being talked of is in reference to a place
e.g. Borori 'country' then ko prefix would be appropriate.
Note that Borori will take ko prefix but oru 'badness'
will take o prefix. This reveals that these prefixes are
used for their appropriate semantic meaning. It seems
that ko is used to refer to places while abstract nouns

use o.

The claim that class 14 has been split into two is not limited to Mbeere. My grand-parents, who speak the Northern dialect, use ko for nouns like Borori and any other place nouns but use o as a class prefix for all class 14 nouns in demonstrative e.g. Borori ojó 'this country' but Bororiine gwɔɔdɛ 'in the whole land'.

The o of ojo 'this' is derived from *Bo prefix through other sound changes while ko of gwɔɔdɛ 'all (place)', cannot be generated by rule. These two examples among others prove the expansion of the domain of ko-.

The other dialects have o- for both demonstratives and adjectives e.g. [Borori ojo wɔ:dɛ] 'all this land (in the whole land)'.

2.2.4.1 Class prefix reduction.

Class prefix reductions have occured in class 2, 5, 8, 14 and 16. The reductions have occured differently in different classes and dialects. For class 2, 8 and 14 the reduction occured and spread to all the dialects. For class 8 only Embu has retained [i] < *Bi, other dialects have lost both *B and *i except for demonstratives (cf. 2.2.3). Embu say ite in a while others say ite nɛnɛ 'big chairs', < */Bite BinɛnɛC /.

The reduction of class 5 prefix is generalized in Mbeere only e.g.:-

29.
Embu	Mbeere	Gichugu	Ndia	W. dialects	Gloss
reːŋge	eːŋge	riːŋge	reiŋge	reiŋge	'much(cl.5)'
reːŋge	eːŋge	reːŋge	reːŋge	reːŋge	'another(cl.5)'
rɛnɛnɛ	ɛnɛnɛ	ɛnɛnɛ	inɛnɛ	inɛnɛ	'big(cl. 5)'.

According to my Mbeere informant /re/ has been reduced
to e in all environments. In all other dialects we have
some surface forms with /re/. The re- reduction in
Mbeere needs a rule like 30.

30. °re > e.

In other dialects the prefix °re is reduced to [e]
if the root begins with a consonant otherwise it remains
as re . Embu is not subject to any re reduction because
re surfaces in all environments. For these (reducing
dialects a rule like 31 is required:-

31. re → e /#- c .

Rule 31 accounts for the data but its phonological
motivation is questionable. To suggest that we have a
phonological rule that deletes [r] in the above environment
would be rather suspicious. It seems that the two allomorphs
have been morphologized such that [re] is a prefix of vowel
initial roots and [e] of consonant initial roots. These
resulted from the change from re to e then to re i.e.

32. °/re/ > /e/ > re /-v.

Rule 32 is more phonologically motivated than 31.
This latter rule achieves CVCV structure while ṇ works
against it.

The changes affecting classes 2, 8, 14 and 15 are
accounted for in sound changes (cf. 3.2.1). The rest of the
prefix need no discussions.

In conclusion we have to stress that there are other
cases of morphologisation. A part from the classifying of
roots into *B roots etc., even when no such sound exists
today (cf. 3.2.2), we have other cases that show morphole-
gisation. One such case is the derivation of such words
as:-

33. | Underlying | surface | proto form | Gloss |
| --- | --- | --- | --- |
| n-iro | mbirɔ | n-*Biro | 'black sheep' |
| n-igwe- | mbigwerɔ | n-ABigwer-ɔ | 'hearing point (ear) |
| n- ni | mɔni | n-*Bɔni | 'pupil of eye' |

In the above discussions we noted that mb- is
generated by a morphological rule. This rule is productive
in Ki-Embu[2] but not in any other dialects. In other
dialects forms in 33 must be generated by a historically
morphologised rule. This rule affects a small set of
morphemes.

The difference between the dialects are as a result
of this historical morphologized. Note that unlike in Ki-
Embu other dialects have no rule generating mb- ⟨·/n-B/.

dialects m is no

In these (other) longer separable from ɔni. This means
that the singular of mɔni[3] 'pupils' is Kɛm ɔni
and not *Kɛɔni. The historical *n has been absorbed into
the root.

The present root mɔni was generated from */n-
Bɔni/ through Ganda law. This rule is still operating in
these dialects e.g. gan- 'tell a tale' changes to ŋanɔ
'stories'⟨/n-gan-ɔ /. The singualr for this is 'roganɔ
'story' or Kaganɔ 'a short story'. Unlike mɔni the root
for this morpheme has been retained as gan-.

In synchronic grammars Ganda law affects /r/ and /ɡ/
only. For other sounds this rule is not operative. As
far as *B roots are concerned the rule is dormant but its
effects can still be seen. Note for example, that the
verb for 'see' mɔni. To mɔni we can add other prefixes e.g.
imɔni 'big pupils'.

It is obvious from the above examples that restructuring
has taken place in some of the roots. In such cases no
amount of abstraction can be used to generate the synchronic
forms from the proto-roots. Any such abstractions cannot
be said to be a part of the synchronic grammars of these
dialects.

2.2.5 Morphological Metathesis.

Metathesis is a common concept in many linguistic
literatures e.g. Chomsky and Halle (1968) Schane (1973)

etc. All the available literature concentrates on phono-
logical metathesis. Nobody, to my knowledge, has discussed
any form of metathesis that is conditioned by the
morphological status of the sounds involved.

In this section we shall discuss some metathesis that
is motivated by the morphological status of a given sound.
Before getting into the discussions let it be clear that
the distinction between phonological and morphological
metathesis is that the former should have no exception
while the latter has some exceptions. In a phonological
metathesis a given sequence of sounds is interchanged in
all cases. In a morphological metathesis only the sound
with morphological status is moved. An identical sound which
has no morphological status is not moved.

The difference between these two types of metatheses
is reflected in rules 34 and 40 of this section. The
first of these two rules shows a phonologically motivated
metathesis while the second shows a morphologically
motivated metathesis. In order to understand the differences
between the two we shall first discuss phonological metathesis
than go to morphological metathesis in the last part of
this section.

Many linguists have discussed or formalized phonological
metathesis. The discussions that one finds in most books
are limited. They simply state which sounds will change
from one order to another without going into the motivations

behind the changes. A typical example of the types of
statements that one finds in many books is found in Schane
(1973) Schane discusses metathesis and gives the following
statement on Hanunoo metathesis,

> 'In Hanunoo, the cluster glottal stop and consonant becomes
> consonant and glottal stop when internal... that is between vowels.'

Schane formalizes the Hanunoo rule as in 34

$$34. \quad V \begin{bmatrix} -cons. \\ +stop \end{bmatrix} C \quad V \Rightarrow 1324$$
$$\quad\quad 1 \quad 2 \quad\quad 3 \quad 4$$

Rules like this are found in many books. Many of
them do not have any formalisms like rule 34. These rules
do not talk about the underlying motivations for this
common concept. The constant absence of any discussions
on what motivates the process raises serious doubts as
to whether our linguistic theories have achieved the
desired explanatory adequacy.

It may be that this absence of any discussions about the
motivations of metathesis is due to many and varying types
of metathesis that are found in different languages. This
ought not to be a good reason for not investigating such
motivations because we have both linguistic universals
and language specific phenomena in our linguistic theories.
One should expect to have some discussions as to what
motivates a given metathesis in a given language. As we
shall see later different languages may have different

constraints on sound clustering. These constraints may be
the cause of many types of metathesis.

In the last few years some linguists have tried to
explain the motivations for metathesis. Among those who have
discussed this process are Hooper (1973) Bailey (1970) and
Vennemann (personal communication). In our discussions
Vennemann referred to Baily's article (which I have not
seen) which he says makes a claim that where stops are
involved in metathesis, the apical ones come last.
Vennemann gave the following examples to support the claim:-

35a. <u>Greek:</u>

/tk/→kt   *ti-teko ⟩ titko   tikto

/tp/→pt   *kʷid-pe ⟩ titpe   tipte

/nm/→mn   *mesodme   ⟩   mesomne

35b. <u>Hebrew:</u>

/ts/→st   *hit-sader   histader   '(he) got organised.'
          hit-saret   histaref   '(he) joined.'

ts → st   hit-šaper   hištaper   '(he) improved.'

With these examples Vennemann claims that the output
of metathesis is easier to produce than the input. The
hypothesis is   that the role of metathesis is cluster
simplification. From the output it is clear that syllables
ending in certain stops are disallowed while those ending
in continuants are preferred. To us this claim seems to
be well motivated.

For Hooper metathesis may result from pressure to make syllable initial positions stronger than syllable final positions. In some languages e.g. Spanish, syllable structure constraints rule out any consonantal clusters of the type C_1 & C_2 if 1 is stronger than 2 (cf. Hooper 1973 chp. 9). The examples given to support this claim include:-

36. /venra/   verná   he will come.
    /ponra/   porná   he will put.

According to Hooper metathesis arises because /r/ is weaker than /n/ and cannot therefore occur in syllable initial positions after /n/ which is stronger than it. If such types of structures were to be allowed the results would be strong syllable final positions but weak syllable initial positions. Such structures are not allowed in the surface forms of Spanish. Note that some other dialects of Spanish use epenthesis to achieve the same objective. In such dialects the above forms will surface as [vendrá] and [pondrá] respectively. The latter examples leave no doubt about syllable structure constraints.

In all the above examples it is possible to see the motivations of each case of metathesis. As stated earlier on, these motivations need not fit in linguistic universals. They may be limited to one particular language which uses a limited set of constraints on the clustering of sounds.

In S. Mt. Kenya we have a number of cases that show
evidence of metathesis. These include syllable switching
and morphological metathesis. This morphological metathesis
moves a particular morpheme to a particular position.
Before going into morphological metathesis let us have a
look at phonological metathesis. The most common examples
of phonological metathesis are:-

37. (i) /ɓigana/ [ɓinagana]/ [ɓigana] 'how many cl.9'.

(ii)/damaka/ [madaka] / [damaka] 'rule over.'

(iii)/taguna/ [tanuka] / [taguna] 'chew'.

/modamaki/ [momadaki]/ [modamaki]'ruler.'

Examples 37 (i) and (ii) are very common in some
people's speech. These are only heard in Northern and Southern
dialects. Example 37 (ii) is more common in many parts of
Northern dialect than anywhere else. In such parts we
have [damaka/ madaka] 'rule' and [modamaki/ momadaki]
'king'. These are common but sporadic in their occurences.
Example 4 (iii) is dialectal in that eastern dialects have
[taguna] while western dialects have [tanuka].

As the examples in 37 reveal where metathesis has
occured the velar consonants have been placed in the last
syllable. Unfortunately our data is so limited that we
cannot justifiably write a general rule for three words
only. The interesting thing that we should note is that
when two anterior (i.e.[-back]) consonants are separated

by a velar consonant the velar sound is switched to the
last syllable. This switching leads to a structure in
which the two anterior sounds are in adjacent syllables.
The output of the rule can be said to be easier, to produce,
than the input. This output is easy because sounds produced
by a given part of the tongue are grouped together.

The morphological metathesis referred to earlier
involves the movement of a historically causitive •{ i }
to the last syllable of the surface structure. This
historically causitive { i } need not, today, express a
causitive idea. To exemplify this rule we have the
following examples:-

38a.	roots	Gloss	Roots+perf. tense	Gloss
	un-	'break'	en+etɛ [unetɛ]	'has broken'
	ɔh-	'tie'	ɔh+etɛ [ɔhɛtɛ]	'has tied'
	rakar-	'be angry'	rakar+etɛ[rakaretɛ]	'has become
	kam-	'milk'	kam+etɛ[kametɛ]	'has milked.=

38b.	ari-	'talk'	ari+etɛ [aretiɛ]	'has talked'
	ɓari-	'look for'	ɓari+etɛ [ɓaretiɛ]	'has looked for'
	ati-	split	ati+etɛ [atetiɛ]	'has split'
	guɓi-	pull	guɓi+etɛ [guɓetiɛ]	'has pulled'.

38c.	di-	'go'	di+etɛ [dietɛ]	'has gone'
	re-	'eat'	re+etɛ [re:tɛ]	'has eaten
	riari-	'move aim	riari+etɛ [riarietɛ]	'has moved....
		lessly		

38c. | roots | Gloss | Roots+perf. tense | Gloss |
|---|---|---|---|
| gi- | 'trouble' | gi+etɛ [gietɛ] | 'has troubled' |
| huria | 'rhinoceros' | ʰuri+et [hurietɛ] | 'has become a rhinoceros'. |
| ŋgatia | 'lion' | ŋgati+etɛ [ŋgatietɛ] | 'has become a lion'. |

From the above examples it is quite clear that we have two types of /i/s. There are those /i/s that move to the last syllable e.g. 38b and there are those /i/s that do not e.g. 38c. For these /i/s that move we have the following rule:-

39/ i+etɛ → 2314.
    1 234

Some people might want to argue that the solution to this problem lies in the functions of the verb. For such people all the verbs that attract this movement would be transitive verbs. All the verbs that do not have this /i/ movement would be classified as intransitive verbs. This solution will face a number of problems. One of the problems is that not all the verbs that have /i/ movement are transitive in meaning. A verb like [arja] 'talk' will have [aretiɛ] 'has talked' </ari-etɛ/. One would find it hard to draw a clear line between transitive and intransitive if meaning was to be the prime factor.

The fact that some verbs that end in /i/ do not
switch this sound to the last syllable, while others do,
means that this rule is not phonologically motivated.
If it was phonologically motivated it would have no
exceptions. The distinction between these two types of
/i/ is morphological. The rule is, therefore, motivated
by the morphology of these dialects.

The /i/ movement rule is dependent on the morphological
status of the moving /i/. This /i/ is historically from a
causitive $\cdot \left\{ i \right\}$. The position of this morpheme was, and is
still, limited to the last syllable of the surface structure.
This means that the morpholical $\left\{ i \right\}$ has to be placed
before the final vowel. If this rule was to be formalzed it
would be as 40.

40. Caustive $\rightarrow$ [i] /-V#.

This rule has no phonological motivation.

An interesting point that should be noted   is
that the moving /i/s are more than the unmoving /i/s. Very
few verbs seem to end in this unmoving /i/. It is for this
reason that some verbs have been made out of nouns (cf.
38c). The actual number of unmoving /i/s is not possible
to get because not all verbs of the dialects are listed.

The solution given above means that all the verbs
with the moving /i/s will be marked with a diacritiv
feature (+causitive). This feature will triger the

movement of the underlying /i/ to the last syllable. The verbs without this diacritic feature will not meet the structural description of the causitive movement rule (cm rule). They will therefore not have their /i/s moved to the last syllable.

This solution means that younger language learners must learn the distinction between the two types of /i/s. Any mislearning of these two sounds would result into either rule loss or rule generalization on phonological grounds. Until this happens the rule must be treated as a morphological one.

As already indicated the <u>causitive movement rule</u> is an alternative title to morphological metathesis. Any of these two titles will be good enough to describe the process. Whatever the title one uses the process remains morphological.

2.2.6 Analogical extensions.

Traditionally analogy was seen as an agent that rescued paradigmatic regularity from irregularities created by sound laws. For this group of linguists emphasis was placed on what they called proportional analogy. For the generative grammarians this term was overshadowed by rule generalization. Some generative grammarians like King (1969) have even dismissed the concept as unnecessary. For this group rule generalization is enough.

In this section we shall examine a number of rules and examples so as to find out if this term is necessary in our theory. We shall try to find out the best way of accounting for a number of changes that occur in our region of study. The first of the rules to be discussed is nasal deletion that we discussed in 3.2.2. Remember that we concluded that this rule has had three stages which may be set as follows:-

41. $C \longrightarrow \emptyset \quad / \# \underline{\quad} \begin{bmatrix} -\text{cons.} \\ -\text{voc.} \\ -\text{high} \end{bmatrix}$
$\begin{bmatrix} +\text{nasal} \end{bmatrix}$

42. $C \longrightarrow \emptyset \quad / \# \underline{\quad} \begin{bmatrix} \begin{bmatrix} -\text{cons.} \\ -\text{voc.} \\ -\text{high} \end{bmatrix} \\ \begin{bmatrix} +\text{cons.} \\ +\text{voice} \\ +\text{cor} \\ -\text{stop} \end{bmatrix} \end{bmatrix}$
$\begin{bmatrix} +\text{nasal} \end{bmatrix}$

43. $C \longrightarrow \emptyset \quad / \# \underline{\quad} \quad C$
$\begin{bmatrix} +\text{nasal} \end{bmatrix} \qquad \begin{bmatrix} +\text{voice} \end{bmatrix}$

We have no doubts that the above three rules existed in Western dialects of our study. We also have no doubt that they occured in the above order. All these facts are revealed in 3.2.2.

Given the above rules one may want to account for the present day phenomenon by rule generalization or by

proportional analogy. For these changes rule generalization
would be enough and there is no need for an appeal to analogy.
The generative grammarians who dismiss analogy would argue
that this is a phonological process which is phonetically
motivated and therefore needs no other justifications. The
phonetic motivations are that no voiced clusters are needed
in initial syllables.

The second change to be discussed in relation to analogy
involves the extension of the first person singular marker,
in negative constructions only, to both second and third
persons. In order to understand this rule let us compare
examples given in 44 and those given in 45. When comparing
the two sets we should take note of the differences in their
underlying representation:-

44. (i) /n-ti-ra-die/   ndiradie   'I am not going'.

   (ii) /n-ti-go-ŝama/   ndigoŝama   'I am not to taste'.

   (iii) /n-ti-na-rea/   ndinarea   'I did not eat.'

45

 . (i) /o-ti-ra-die/   ndoradie   'You are not going'.

   (ii) /a-ti-ra-die/   ndaradie   'He is not going'.

   (iii) /o-ti-go-ŝama/   ndogaŝama   'You are not to taste'.

   (iv) /a-ti-go-ŝama/   ndagoŝama   'He is not to taste.'

   (±) '/o-ti-na-rea/   ndonarea   'You did not eat.'

   (vi) /a-ti-na-rea/   ndanarea   'He did not eat.'

A comparison between underlying and surface forms
shows that surface forms are more similar than their underlying

counterparts. We note that all the surface forms begin
with nd- which must be accounted for in our grammar.
Note further that unlike in 44 where subject marker comes
before -ti- all surface forms in 45 show the subject marker
as occurring after nd- which is rather strange, if we
assume that this is derived from -ti-.

In order to explain how we get the surface forms in
45 we have two choices. One of them will be analogical
extension of -nd- as a singular marker and not a marker for
the first person singular only. The second alternative
will involve metathesis, vowel deletion and n epenthesis.

By using the second alternative we shall have the
following rules:-

46. $V\ C\ V \longrightarrow V\ C\ V$ i.e. o-ti $\left.\begin{matrix} \\ \end{matrix}\right]$ *tio
    1 2 3   2 3 1   a-ti $\left.\begin{matrix} \\ \end{matrix}\right]$ *tia

47. $V \longrightarrow \emptyset \ / \ \begin{bmatrix} +high \\ -back \end{bmatrix} \underline{\quad} \begin{bmatrix} V \\ -high \end{bmatrix}$

48. $\emptyset \longrightarrow [n] \ /\# \underline{\quad} C \begin{bmatrix} +cor \\ +stop \\ -voice \end{bmatrix}$

On the basis of the generation of other diphthongs in
the dialects rule 46 must be as it is. It should not be

allowed to generate 'toi or 'tai because rising diphthongs are
not allowed on the surface. The generation of rising
diphthongs would make [i] deletion in 47 unmotivated.
Since rule 46 has generated falling diphthongs rule 47 is
motivated by the constraints on the generation, of diphthongs.

Rule 48 is the most suspicious of all the three rules.
As we noted earlier the Western dialects have initial nasal
deletion. We also noted that the initial nasals were
morphophonemic. They were not generated for the sake of
their generation. Rule 48 is unmotivated in that it is
neither morphologically nor phonetically motivated. For
these reasons we must reject it as another trick to cover
up the weakness of our linguistic theory.

The first alternative takes nd generated from /n+t/
as the origin of the present day situation. Since this
form was first generated as the 1st person singular marker
the speakers extended it to all three persons. The singular
marker was generalized as - nd- with the person marked by
the vowel i.e. i, o , and a for first second and third
persons respectively.

This approach does not need to generate [nd] from
/v-ti/ because the motivation of this form is not phonetic.
The motivation is conceptual. According to this approach
a claim is being made that all the three persons were
conceptually grouped together. They were all singulars and
therefore needed or should have a single form to mark that

singularness.

The analogical extensions discussed here are motivated by grammar simplification. This type of simplification differs from other types of simplifications in form only otherwise they all achieve simpler grammars. Rule generalisation as given in King (1969) and analogical extensions have the same end results and our theory should be able to show this. In this particular case rule generalization will not do because there are no underlying motivations. We must use analogy in order to account for this type of grammar simplification.

These extensions have gone to all the dialects of Southern Mt. Kenya dialects but are fully generalised in Western dialects only. In these Western dialects we have no surface forms of the type VCV , which are found in Eastern dialects. Eastern dialects use VCV in all emphatic expressions. For clarification of the dialectal differences compare these surface forms: in 47 .

There are many other examples that one can give to show the differences. These Eastern examples are used when emphasis is needed. This is usually so when the hearer seems not to accept the fact e.g. for 47 a (i) the speaker may say that a given person is called x. The hearer may suggest a different name which makes the speaker come up with an emphatic denial of the later name. If no emphasis is needed or used the above forms will be realised as in 50.

49. a)   <u>Ki-Gichugu</u>   <u>W. Dialects</u>

    (i)   atetagwa   d tagw

    (ii)   etetagwa   d tagw

   b)   <u>Embu</u>   <u>W. dialects</u>

    (i)   te:rya   de:rea

    (ii)   tjadie   dagodie

    (iii)   atetagwa   d tagw

50.   <u>E. dialects:</u>   <u>W. dialects.</u>

    (i)   ndetagwa   d tagw

    (ii)   ndetagwa   detagw

    (iii)   ndadie   da:die

underlying	Gloss
/a-ti-etagw /	'He is not called'.
/e-ti-etagwv /	'It is not called'.

underlying	Gloss
/n-ti-erea/	'It is not to eat'
/a-ti-die/	
or /ti-adie/	'he is not to go'
/a-ti-etagwv	'he is not called'.

'He is not called.

'It is not called'.

'He is not to go'.

Whether one wants to argue that the Eastern dialects
have borrowed these forms or not is not important to our
discussion. The important thing is that analogical levelling
has taken place in all the dialects but at different rates.
In Western dialects we have no surface forms that retain a
direct link with the underlying forms. The crucial question
would be whether any generative phonologist would have a rule
that changes /N+t/ into [nd-]. We hope no one will suggest
such kind of rule for such would be unmotivated in any
theory. The only way to account for this is by appealing to
analogy.

In conclusion it should be realized that different dialects
have different rates of anological levelling. The eastern
dialects of this region are slower than their western
counterparts. This to us is an important feature of
dialectalogy.

Footnotes:

1. re 'Verb to be' has varied meanings depending on the
   context. These varied meanings are:-
   1. he/she is, has, was.
   2. he/she is in possession of
   3. he/she is, was at.

2. In 3.1.3 we argued that mb- was generated from °
   /nB/ by a morphological rule. We no longer have
   /B/ as a phoneme in Ki-Embu.

3. mɔni 'pupils' (of eyes) must be generated from °/nB/
   and not from /n-ɔni/. The change from °/nBɔni/ >
   mɔni in generated through Ganda law but no change
   from /n-ɔni/ to mɔni would ever take place in these
   dialects. Such a change would have no phonological
   motivation.

CHAPTER THREE

Comparative Phonology and Diachronic Changes.

3.0 In this chapter we shall deal with diachronic sound
shifts that have occured in S. Mt. Kenya. The main objective
will be to find out to what extent these dialects differ
or agree in sound structure. The findings will reveal
how close the genetic relationship between these dialects is.
We shall also be interested to find out which rules have
operated in each dialect in order to have the present day
sound structures.

The chapter will consist of three parts. The first part
will deal with consonants and the rules affecting them.
The second part will discuss the vowels and any rules that
affect them. The final part will deal with tone and tone
patterns found in this region. In all three parts we shall
discuss diachronic developments that established the synchronic
differences. Synchronic rules will only be considered where
they show some light on historical developments.

As stated elsewhere in this study, Guthrie has classified
the whole of S. Mt. Kenya as one language. He calls this
language 'Kikuyu' and labels it E51.[1] He mentions Embu
and the says that it is similar to E51. The only
difference that he cites is "*P > B".[2] We interprete this
to mean that in all other respects Embu is like E51,
according to Guthrie. Since he does not mention any other

dialect except 'Embu' and 'Kikuyu' we shall assume that for
him no other dialects exist in the region.

Guthrie is not wrong but his assumptions of what the
comparative method and 'Internal Reconstruction' can do
were wrong. In his discussion of the viability of
comparative method he had this to say:-

"There is no need for use to discuss here the
implications or the merits of this technique,
since the likelihood of its being able to
produce results is so remote." (Guthrie 1948:20).

This statement was meant to claim that there is no
possibility of showing different types of relationships i.e.
we cannot prove that a proto-language A produced B and C
and that C later produced D and E. Diagrammatically he
denied the following results:-
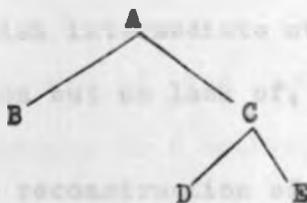
For him the comparative method could only produce
'useful deductions' for the reconstruction of a common
general ancestor i.e. one proto-language. The method was
incapable of showing any intermediate stages. He, therefore,
concludes his book by saying:-

"Any who may have looked in vain for some
indication of the closeness of the relationship
between one group and another should bear in
mind that there is no standard against which to
measure such relationship. It was, therefore,
necessary to avaoid expressing any ideas on this
subject, since they could not have trully
objective basis, (Guthrie 1948:73)".

Guthrie's defeatist attitude should not be accepted in
our theory of sound change. The fact that one group of
dialects or languages may have certain changes while other
groups have other changes means that we can reconstruct
the most recent mother language of each group. The common
changes to the two different group will, in tern, help us to
reconstruct the next common mother language. Note that
Guthrie's objection to the possibility of this method
being used to establish intermediate stages is not based on
linguistic information but on lack of, 'historical records.'

For Guthrie the reconstruction of Proto-Germanic and
Proto-Romance as intermediate stages in Indo-European
languages could only be possible because of the availability
of 'historical records.' Such a claim seems strange
because there are certain sound changes that are limited to
each of these groups which could be used to establish a
proto-language for each group.

The assumption of the writer is that the comparative

Method and Internal Reconstruction have more utility than
Guthrie was ready to accept. This very claim has been made
by Hinnebusch (1973)[3] who argues that we can infact
establish closer relationships by using the same methods
that Guthrie dismissed. With these few remarks we now
turn to comparative phonology of S. Mt. Kenya.

3.1.1 The Consonants.

Looking at the sounds found in these dialects one can
easily reconstruct the following sounds as the sounds of
the once common language of S. Mt. Kenya, hence Proto-
Southern Mt. Kenya.

P	t	ts	k
B	r		g
Mb	nd	ɲʃ	ŋg
m	n	ɲ	ŋ
w(?)		j(?).	

Each of the dialects of this regions has deviated from
the above sound structure in a number of ways. On individual
dialect basis we have the following analysis:-

3.1.2 Ki-Embu - Kimbeere.

	t	s/ɓ	k
v	d		g
Mb	nd	ɲʃ	ŋg
m	n	ɲ	ŋ
w	r	j	

In Ki-Mbeere these sounds have come into being through
the following changes:-

/t/ < *t

/ʄ/ < *ts and *B /- ia (cf. 2.2)

/k/ < *k

/v/ < *P and some from *B

/d/ < *(n) ts and some from *t (mainly cl. 10).

/ʤ/ < *g

/mb/ < *nB and some -mb- (i.e. medial)

/nd/ < *nr; *nt and -nd- (i.e. medial position)

/ng/ < *nᵍ; *nk and -ng- (i.e. medial position)

/r/ < *r

/m/ < *m and some from *nB through Ganda law.

/n/ < *n

/ɲ/ < mainly *n /-iv; some from *n

/ŋ/ < *n /- velars which were later deleted by Ganda
law.

/w/ < *O followed by a or ɔ. There may have been some
*/w/s that were earlier developments of the
same rule.

/j/ < * i, e, ɛ followed by back vowels. There may
have been earlier forms of this rule at the
proto-stage.

The two dialects have almost identical sound structures
and will therefore be discussed as a single group. The

major differences are discussed and exemplified in chapter
2. In sound structure the only difference between the two
is that Ki-Embu has /s/ or/ð/ while Ki-Mbeere has uniform
/ð/. In Embu some people have /s/ while others have /ð/.
In most cases the two sounds will fluctuate freely without
creating meaning differences.

3.1.3 Ki-Gichugu - Ki-Ndia.

These two dialects have identical sound structures.
The major differences are in morpholexical differences that
have been shown throughout chapter 2. Being identical in
sound structures means that they should be discussed as a
single group. The same was done for Ki-Embu and Ki-Mbeere.
The two dialects have the followings sounds:-

3.   t   ts   k

B   d   g

Mb   nd   ɲʃ   ŋg

m   n   ɲ   ŋ

     r

w   j

For these sounds we have the following changes:-

/t/ $<$ *t
/ts/ $<$ *ts and some from *B (cf. 2.2.3)
/k/ $<$ *k
/B/ $<$ *P and some from *B
/d/ $<$ *(n) ts and some from *t (cl. 9/10 only).

/a/ <°g

/mb/ <°nB and some from -Mb- i.e. medial nasal clusters.

/nd/ <°nr and °nt

/ŋg/ <°ŋg and °ŋk.

/m/ <°m and some from °nb through Ganda law (cf. 2.2.4).

/n/ <°n

/ɲ/ <°n /#-i and some from °/nts/.

/ŋ/ <°n /#- velars which were, later, lost through
Ganda law (cf. 2.2.4).

/r/ <°r

/w/ <°O followed by /a/ or /ɔ/.

/j/ <°/i; e; ɛ/ followed by back vowels.

3.1.4 Ki-Mathira

Ki-Mathira has the following sounds:-

4.   t   ŝ   k
       b   d   ɟ   ɡ
       f   z   ɡ   h
       mb   nd   ɲɟ   ŋg
       m   n   ɲ   ŋ
                 r
       w   j

These have been derived by the following changes:-

/t/ <°t

/ŝ/ <°ts and °B /-ia (cf. 2.2)

/k/ <°k

/b, d, ɟ, g/ ⟨ °#mb, °#md, °#nɟ and °#ŋg.

/f/ ⟨°B in environments without nasals.

/s/ ⟨°(n) ts

/e/ ⟨°g and some from °k

/h/ ∠°P

/mb, nd, nɟ, ŋg/ ⟨ from -Nc- i.e. medial nasal clusters.

/m/ ∠°m and some from °nB through Ganda law.

/n/ ⟨°n

/n/ ∠°n /#-v and ɪnts

/n/ ∠°n /#- velars through Ganda law.

/r/ ⟨°r

/w/ ⟨°/0/ followed by /a/ and /ɔ/.

/j/ ⟨°/i, e, ɛ/ followed by back vowels.

3.1.5 Northern dialect and Southern dialect:

These two dialects are almost identical to Mathira.
The only differences that separate them from Ki-Mathira is
the following change:-

/d/ v (n)ts.

The difference between Northern and Southern dialect
is that while the Northern dialect agrees with Ki-Mathira
in having /f/ ⟨°B Southern dialect has /B/ ⟨°B. In all
other changes the two dialects agree with Ki-Mathira.

3.2.1 The historical rules:

From the above comparisons one finds a clear grouping
of the seven dialects into three main groups. These are
the Ki-Embu - Ki-Mbeere group, the Ki-Gichugu - Ki-Ndia

group and the Western group that consists of Ki-Mathira,
Northern and Southern dialects. In the following few
pages we shall discuss the historical rules and possible
lines of changes that might have taken place in each or
the three groups or in individual dialects. Again, the
discussions will be, mainly, limited to historical changes.

3.2.2 Ki-Embu - Ki-Mbeere group:

As indicated above (3.1.2) the voiceless bilabial
stop /*p/ has shifted to a labiodental position and,
also, changed from a stop to a voiced fricative. It was also
indicated that there occured a merger of *P and *B in this
group. The merger did not affect all the cases of *B because
some of them were lost before *P changed into /v/. This
merger is a very interesting change especially when one
compares the differences between this group and Ki-Gichugu
- Ki-Ndia group (3.7.3). Let us first consider the shift
from *P to /v/.

Hinnebusch (personal communication) argues that the,
'shift from *P to V is probably part of the areal phenome-
non affecting most Bantu languages in which $*P > *\Phi > V > \bar{e}$
(between vowels) or $*P > \Phi > h > \rho$. In Hinnebusch (1973)[4]
he calls this change P- lenition. Hinnebusch did not consider
the change of *B to V probably because his interests were
in Kenyan Coastal languages where this change did not take
place. The process of change offered by Prof. Hinnebusch
is common in Bantu languages and cannot therefore be
disputed.

The fact that a process has occured in one language
or group of languages does not, however, imply that it
occured in another. As such we cannot claim that the
above trend of P-lenition took place in S. Mt. Kenya
without giving enough proof that it actually followed
those lines. In this region there is no evidence to
suggest that *ꞵ has ever existed. All the available facts
show that this sound (i.e. *P) has changed into V, B and
h at some stage in its lenition. We shall come back to this
sound shortly.

In a historical order *P> V must be placed after
*B > ∅ in most environments except when after nasals. By
saying after nasals one might want to make this statement
clearer by altering it to state that *B was preserved only
in morphemes that generated Mb- from *nB thus creating an
alternation between Mb and *B in the same root. This is
more revealing than saying, 'after nasals.' These
morphophonemic alternations occured in class 9/10
morphemes, as exemplified below (see map 3):-

5.   Proto-form   Gloss

Mbɛlɛ	<	n-Bɛrɛ	front(s)
Mboli	<	n-Bori	goat(s)
Mbura	<	n-Bura	rain(s)
Mbɛgo	<	n-Bɛgo	seed(s)
Mbede	. <	n-Betse	unripe
Mbaara	<	n-Baara	war(s)

The above ecamples differ from these of 6 in that
examples in 6 have lost the °/B/s of the proto forms.
The environments in which this sound was lost are quite
clear:-

6.

Proto forms		Gloss
era	< Bara	shine
eara	< Bara	speckle
ere	< Bere	two
roaru	< Baru	side
e	< Be	bad
ɔ	< Bɔ	them
gaa	< gaBa	divide.

To generate the above forms from the proto language
we have rule 7 (map 3).

7.   °B → ∅ /#-; V-V.

The interpretation of rule 7 is such that those proto °Bs
that came after nasals were not initial and were therefore
not subject to rule 7.

As stated above rule 7 operated long before °P-lenition
occured. In this group of dialects, i.e. Ki-Mbeere and
Ki-Embu, °P is most likely to have shifted as shown in 8.

8.   °P > V /V-V.

The above rule was later generalised to all environments thus
causing restructuring of °P to /V/. After restructuring some

initial occurences of /V/ were deleted thus generating such
forms as ává from °Papa 'here'.

The above change occured in both Ki-Mbeere and
Ki-Embu but the present day surface forms have different
dialectal variations. As will be seen in this section and
from the examples below Ki-Mbeere merged proto sounds B and
°P into /V/ but merged °nB and °nP into mb . Ki-Embu did
not merge the two sounds completely, in the latter
environment. This is shown below:-

9. | Ki-Mbeere | Ki-Embu | Proto | Gloss |
|---|---|---|---|
| Mbiti | ŋviti | piti | hyena |
| mbig | mbigɔ | pigɔ | kidney |
| mbɔv | ŋvɛvɔ | pɛpɔ | cold |
| mbu:nda | ŋvu:nda | punda | donkey |
| Mbalika | ŋvalika | parika | she goat. |
| Mbal | ŋvalɛ | parɛ | I scratch |
| Mbir | mbirɔ | Birɔ | soot |
| mboli | mboli | Bori | goat. |

From these examples we note that Ki-Embu had kept a
clear distinction between °P roots and °B roots, until
people lost their memory of what roots belonged to what
sound. The loss of this distinction resulted into some
confusion which led to some °P roots surfacing as °B roots
while some °B roots were surfaced as °P roots. Despite
these confusions we can still write rules to account for

these differences. The rules will be as shown in 10 and
11.

10. *P
   *B $\rangle$ b   / [nasal] - (In Mbeere)

11. *P $\rangle$ /V/ /#-; V-V (Mbeere and Embu).

These two rules are adequate to account for the differences
between Mbeere and Embu.

Another change that occurs between Ki-Mbeere and
Ki-Embu is the occurence of /š/ only in Ki-Mbeere but /s/
and /š/ in Embu. In Embu some speakers have /s/ as the only
sound to correspond to Ki-Mbeere's /š/. Other speakers have
/s/ corresponding to Ki-Mbeere /s/. These two varieties of
*ts do not seem to follow clear dialect boundaries in
Ki-Embu. This makes it hard for the researcher to decide which
one to list as the Ki-Embu variety.

The impressionistic picture that one tends to get is
that southern and eastern Ki-Embu have /s/ while northern
Ki-Embu tends to have /š/. In each of these regions one
gets pockets of speakers, with either of the two varieties.
As we could not, non-arbitrarily, choose one of them we have
listed both as Ki-Embu reflexes of *ts.

The palatal and the velar nasals i.e. /ʃ/ and /ʒ/ are
found in all the dialects of our study. These two sounds
may have been part of the sound structure of the proto

language of this region. This fact cannot be established

beyond reasonable doubts. They may have been allophones of

*n which were later phonemicised by certain changes.

One of the possible changes that may have led to the

present phonemes is the change of the proto form *ni,

which was both first person singular marker and class 9/10

prefix, into /ɲi/ when the roots began with vowels. This

would suggest that */ni+a/ would change into /ɲia/. This

claim is supported by structures such as ɲinɛ ⟨*ni-in-ɛ

'May I sing,' niŋgɛrɛ ⟨*ni-iŋger -ɛ 'May I enter,'

nɔnɛ ⟨*ni -ɔn-ɛ 'May I see.'

In the dialects of our study we have forms such as

niːna 'finish', nini 'small' nuŋga 'smell' (verb) etc.

Such forms as these indicate that there is no palatalisation

before high vowels. The change from *n to /ɲ/ must have

come from *niV.

Assuming the above change began by changing *ni into

ɲi when roots began with vowels it is the case that this

rule was generalised to affect all morphemes of class 10 even

after *ni was reduced to n. This explains why we say,

mboli neɲge 'many goats' ⟨/*n+eŋge/ mboli mbɛɛ a

'good goats' ⟨/*n-Bɛga/ instead of *nivɛa, which would be

the present day form after *B ⟩ V in these two dialects.

As for /ɲ/ it is the case that most of the present

day surface forms are historically derived from *n through

Ganda law. The following few examples will illustrate:-

12. | Surface | underlying | Gloss |
|---------|-----------|-------|
| ŋɔmbɛ | /n-gɔmbɛ/ | cattle. |
| ŋanɔ | /-ganɔ / | stories. |
| ɟɛni | /n-gɛni/ | strange thing |
| ɔɛmu | /n-gɛmu/ | beautiful things. |

These examples need rules 13 and 14 to generate the surface
forms:-

13. °n ⟩ ŋ /#- velars

14. C → ∅ / C   C

$$\begin{bmatrix} -stop \\ \alpha point \end{bmatrix} \begin{bmatrix} +nasal \\ \alpha point \end{bmatrix} - V \begin{bmatrix} +nasal \end{bmatrix}$$

    Rule 13 assimilates n into the velar position of the
voiced velar fricative while rule 14 deletes the latter.

    It might be questioned as to whether there, actually,
exists a velar fricative in the underlying forms of the
examples in 12. To answer such questions one should put the
roots into a test. The test is to place these roots in
another class e.g. Class 13. The result is, Kagɔmbɛ ,
Kaganɔ Kag ɛ ni etc. This test proves that there exists a
velar fricative that leads to the change. The same thing
happens to those /M/s that are derived from °/n+B/ e.g.
mɔni 'eyepupils.

On the surface there may be no connection between
young language learners need not
/ɔ/ and /g/ i.e. learn the underlying forms. They, most
likely, learn the surface forms as a class of morphemes.
It is unlikely that children will associate ŋɔmbɛ with
gɔmbɛ. In fact a young child. said that the calf should
be *Kanɔmbɛ. When I asked him why it was not Kaŋɔmbɛ
he could not answer.

From rules 13 and 14 we have got a large number of
surface forms with /ŋ/ that historically come from *n.
in
Whether this sound was a phoneme the proto language or not
is not important to the claim that Ganda law has increased
the occurence of /ŋ/ in the dialects of S. Mt. Kenya.

In concluding this section let us consider the status
of /w/ and /j/. These two sounds can be said to be mainly
derived from vowels. Even today most of their surface reali-
sations are allophonic to their respective vowel sources.
[w] comes from /O/ while [j] comes /i/ and /e/. The rules
that generate these allophones are exemplified below:-

15. **Underlying**   **Surface**   **Gloss**

o-ɔn-ɛ   wɔnɛ   that you (sg) may see.
o-ar-ɛ   warɛ   that you (sg) may spread
ßi-um-ɛ   ßjumɛ   that they (cl.8) may get out
Ke-ug-ɛ   Kjugɛ   that it (cl.7) may say.

These gliding rules are so clear that they need no further
comments.

What is of interest is the fact that even the present
day phonemic /W/s and /j/s may have resulted from earlier
gliding. Unfortunately it is not possible to give an
example in which /j/ can be said to be phonemic. The only
available examples are those of /W/. These are given
below:-

16. ŋgwaɓe   <   potatoes.

    mokwadi   <   a type of a bird.

    mbwe   <   grey hair.

    rwage   mosquitoes.

    Mbwɛ   fox.

It is most likely that the above /w/s are derived from °/ɓa/
or °/ua/. There is no way to test whether or not the glide
and the preceeding stop are one or two sounds. It is
likely that the two are separate i.e. historically. The
medial clusters are always together but the initial ones
are separable.

3.2.3 <u>Ki-Gichugu - Ki-Ndia.</u>

In these two dialects p-lenition took a different
route from that of Ki-Mbeere - Ki-Embu group. Unlike in Ki-
Mbeere - Ki-Embu group where °P and °B merged into /v/ this
group merged the two sounds into /B/. Another important
difference between this group and Ki-Mbeere - Ki-Embu group
is that in this latter group the two sounds did not shift
to a third value but have joined into one of the two
proto sounds.

It was noted earlier, that in Ki-Mbeere and Ki-Embu both *p and *B were lost in certain initial environments. The same thing happened in Ki-Gichugu and Ki-Ndia. The losses are exemplified below:-

17.　era　　　　　< 　*Bara　　shine

　　　e:　　　　 < 　*Be　　　bad

　　　ɔra　　　　< 　*Bɔra　　rot

　　　gaa　　　　< 　*gaBa　　divide

　　　aBa　　　　< 　*papa　　here

　　　ata　　　　< 　pata　　　sweep

From examples in 17 it is clear that rule 7 has operated in these two dialects. The only question that we need to ask ourselves is whether rule 7 is general enough to delete both *p and *B in initial and intervocalic positions. It seems that this rule is not general enough because it lists *B as the sound to be deleted. To avoid this inadequacy we have to reformulate rule 7 as rule 18.

18.　*C 　 >　 ∅ 　　/#-; V-U

$$\begin{bmatrix} \text{+Bilabial} \\ \text{+continuant} \end{bmatrix}$$

Rule 18 deleted any continuant labial consonant whether voiced or not if it occured in initial or in intervocalic environments. The rule is general enough to account for the changes that occured in these four dialects.

Rule 18 first operated on *B and got rid of it except

in alternating morphemes (i.e. °mb /°B). After the
operation of this rule p-lenition occured. The first
change was, probably, the voicing of °/P/ into °/b/ then
came the change from a stop to a fricative, i.e. °P °b

/B/. At this stage rule 18 operated and deleted a number
of /B/s that had come from °P.

The change through voicing first is not strange especially
when we note that these dialects like most other Bantu
languages could easily generate mb from °n+°P. A rule
like this one could merge the two sounds into one in this
particular environment, i.e. rule 10 After the application
of rule 10 restructuring occurred thus changing °P to °b.
This of change was followed by the change of °b to /B/ thus
completing the change. Historically these changes are
shown in rule 19.

19. °P > mb/b > °/b/ > B/mb > /B/.

The claim that °P could easily change to b after
nasals is supported by examples in 20 which show the merger
of °P and °B:-

20	mbiti	<	n+°Piti	hyena(s)
	mbɛ Bɔ	<	n+°PɛPɔ	cold(s)
	mbigɔ	<	n+°Pigɔ	kidney(s)
	mbuBu	<	n+°Pupu	bat(s)
	mboli	<	n+°Bori	goat(s)
	mbura	<	n+°Burɔ	rain(s)
	mbɛgo	<	n+°Bɛgo	seed(s).

An interesting fact to note is that no intervocalic
*B or *b listed by both Meinhof and Guthrie can be seen
today in any of the dialects discussed so far. The present
day intevocalic /V/ and /B/ found in these two groups of
dialects are all derived from *P.

The above discussions and rules have proved that in
Ki-Gichugu and Ki-Ndia there are no reflexies of *P to be
found on the surface. In these two dialects *P can only
be traced trhough /B/. This is a true generalization for all
native speakers of these two dialects. There are, however,
some Ndia people who have some /h/s/ There are the people
who have borrowed this sound from western dialects.

The borrowing of /h/ into Ki-Ndia is limited to the
young and the educated people who have come into contact
with the written language. Since the written language is
based on the two main western dialects those who have learned
to read and write have known the existence of /h/. Further
evidence of the borrowing of /h/ is the lack of uniformity in
the usage of this sound by Ndia people. One finds a speaker
who says hàhá 'here' but Kàⁿjo'knife' both of which have /h/
in western dialects i.e. hàhá and kaⁿjo. If the sound was not
borrowed there should have been uniformity in its usage. Note
also that no Ki-Ndia speaker has generalized /h/ in all his/her
vocabulary.

The split of *ts into /ts/ and /ð/ in these two dialects
has followed a similar trend in all other dialects of this
region. The difference does not occur in the split but in the
changes that occured after the split had taken place. As
indicated elsewhere in this study we have no evidence to show why the split

occurred. All we know is that in certain environments °ts
changed to /d/ while in others it remained as /ts/ (in
Gichugu and Ndia). We suspect that one of the environments
in which this sound changed to /d/ was °/n-ts/. This
change has been discussed under Dahl's law (see 4

In all other respects this group of dialects has had
the same changes as those of Ki-Mbeere - Ki-Embu group.
We, therefore, need not repeat what has been discussed
earlier.

3.2.4 Ki-Mathira.

This dialect belongs to a group of dialects that we
are calling western dialects. This group consists of
Ki-Mathira, Northern and Southern dialects. The three
dialects are grouped together by a number of features.
These include the surface realisations of [b], [d],[ɉ]
and [g] a feature that is not found in any other dialect
or group of dialects, in Southern Mt. Kenya. The three are
also grouped together by lack of a merger of ⁻P and °B that
we found to have taken place in eastern dialects.

The surfacing of [b], [d], [ɉ]and [g] in these three
dialects is limited to a single environment i.e. initial
positions. These four sounds are generated by the deletion
of initial nasals when they preceed a voiced stop. Historically
these sounds are generated from /B/; /t/ /r/; /ts/; and /k/
/g/ respectively. Synchronically these are allophones of

/mb/; /nd/; /nj/ and /ŋg/ respectively. To generate the
present day surface forms we have the following rules:-

21. /B/ ⎤ [b]
    /r,t/ ⎥ [d]
    /ɟ / ⎬ → [ɟ]   [nasals] —
    /ɡ,k/ ⎦ [ɡ]

22. /mb/ ⎤ [b]
    /nd/ ⎥ [d]
    /ɲɟ/ ⎬ → [ɟ]   / #—
    /ng/ ⎦ [ɡ]

After the application of rule 22 we get the following
sets of pairs:-

23. Báta   need
    báta   ducks   < /n-Bata/
    bóto   battalions   < /n-Boto/
    túma   mend
    dúma   dacks   < /n-tuma/
    roa   fight
    doːa   skins   < /n-roːa/
    ɟanaː   make a mark
    ɟanɔ   a mark   < /n-sana
    Karɔ   a small potato vine.
    garjɔ   something for chewing /n-Kari-ɟ/
    Kája   shout
    gajaː   divide

garoka   turn

garokɔ   the other side   /n-garok-ɔ /

From these examples it is clear that initial stops
are generated in a given morphological class i.e. in
nouns only. One may therefore wish to deal with the changes
in a morphophonemic form. In such an approach rule 24
would be quite enough to generate the surface forms:-

24.   /B/   [b]
      /t,r/   [d]   1. Class 9/10 nouns
      /ɗ/   → [ʄ] / #-
      /k,g/   [g]   2. 1st person singular structures

This rule may seem quite adequate but it should be
rejected for a number of reasons. First this rule is not
phonological and should not be formulated as if it has some
phonological motivation. It also creates a problem of
motivation i.e. we cannot show why the underlying sounds
have changed. With these and any other reasons that may
arise from the above rule we should reject the morphopho-
nemic approach.

Having rejected rule 24 we return to rule 22 in which
the motivations for the changes can be clearly shown. The
motivations for the changes are initial cluster simplification.
It is also easy to trace the process of the changes then nasal
                          in that we first have consonantal changes
deletion.   We should, also, note that in
medial positions the above sounds remain unchanged e.g.

/n-ro:a/ → ·ndo:a >do:a . If we prefix this with ne
'it is' we get [ne:ndo:a] 'they are skins'. The
phonological approach reveals that initial simplifications
are phonologically motivated.

The changes that affect ·B separate Ki-Mathira from her
eastern neighbours i.e. Ki-Gichugu and Ki-Ndia. In
Ki-Mathira and in the Northern dialect ·B has shifted
to /f/. In medial positions this sound fluctuates between
[v] and [B] . If, in all medial positions, this sound was
realised as [v]we would talk of initial voice dissimilation
but this is not the case. The reality is that many people have
.f both initially and medially. A few, people have[v]
or[B] in medial positions but [f] initially. Since most of
the people have [f] throughout we have to choose it as the
phoneme of this dialect.

The most plausible trend of change is shown in 25
(map 3).

25. ·B >[v] /[f] > /f/

This change agrees with what we said about ·P in our
earlier discussions. The stage at which [v] and [f] alternated
could have attracted restructuring due to other sounds like
/t/ and /k/ which did not change. In other words this
could have been a case or analogical levelling or paradigmatic
regularization.

As stated above Ki-Mathira and its western neighbours did
not merge °P and °B. In these three dialects °P shifted
to /h/. For these dialects the change is in 26:-

26. °P > /h/.

Historically rule 26 is ordered before rule 19. The changes
affecting °B in this region are a very recent innovation.
As indicated above the shift from °B to /f/ has not yet
been completed by all speakers. The opinion of the writer
is that °B loss was the oldest rule. It was then followed
by P-lenition and finally by the on going shift from /B/
to /f/ in Ki-Mathira and Northern dialect.

An important dialectal factor is that whereas the
initial °B loss was carried out in the whole region i.e.
rule 7 the loss of initial °P did not affect western dialects.
This could mean that P-lenition is more recent in western
dialects than in the eastern dialects.

As indicated in this chapter Ki-Mathira is alone in
having /z/ where all other dialects have /d/. Whatever
the reason is we have not yet established it. It may have
come from 'hts which in other dialects changed to /d/.
It may not be from this source but from a borrowed sound
e.g. °|S| which was, first, voiced intervocalically and then
restructured into /z/. Of these two the first alternative
seems more plausible. Note that if this sound originated
from 'hts we have no problem in explaining why vowels are

lengthened before it (cf. 3.2.2). The lengthening should
be seen as a compensatory feature for the lost nasal.

The second alternative is not supported by what
happens to other voiceless sounds i.e. °/t/ and °/k/.
None of these two sounds is voiced intervocalically. It
is also not supported by comparative evidence. A comparison
between the dialects shows that Ki-Mathira has /s/ where
other dialects have /d/. This rules out the idea of
borrowing and leaves us with one alternative only. This
is °ntʃ>/z/ in Mathira while in other dialects it changed to
/d/.

In cluncluding this section let us note that any other
changes that have not been discussed under Mathira dialect
are taken to be the same as those discussed earlier.

3.2.5 Northern and Southern dialects.

As stated at the beginning of 3.1.5 these two dialects
are grouped with Ki-Mathira by the rule of initial nasal
deletions. After the deletions the three dialects have
[b], [d], [ɟ] and [g] as allophones of /mb/, /nd/, /nj/
and / g/. These dialects are, also, grouped with
Ki-Mathira by the present distinction between °P and °B.
The only major deviation from Ki-Mathira that these two
dialects share is the lack of /s/ in their sound structures.
In this respect the two dialects agree with eastern dialects
by having /d/.

Between themselves the two dialects differ in that the Southern dialect has /B/ where the Northern dialect has /f/. Because of this difference Northern and Ki-Mathira dialects go together while Southern dialect is grouped with Ki-Ndia and Ki-Gichugu. The changes that affect these sounds thave been discussed under Gichugu - Ndia group and under Mathira dialect. We need not therefore go back to them. The only thing that we should note is that since the original *Bs were lost in all environments except after nasals we need a rule to generate the present day /B/s in Southern dialect.

The most plausible argument would be that after *B was lost in all non-nasal environments some levelling occured which reintroduced /B/ through paradigmatic regularization. The change can be formulated as in 27.

27. b > /B/ morphemes with #mb.

This [b] was from the original *B in nasal environments. The motivation for rule 27 was to level the paradigms with #mb which were analogoous to those with #nd; #nj and # g. Note that the latter sounds had /t/, /r/, /s/ and /k/, /e/ to alternate with while #mb had none. To reintroduce /B/ rule 27 was to be used which was an inversion of an earlier rule. The two rules i.e. 27 and its predecessor can be formulated as in 28.

28. *B>[b] /[nasal] - > mb; b>[B] /#-; V-V

Note that *B was lost in the same environments in which it
has been reintroduced. The difference is only that it was
not reintroduced in the same morphemes.

To support the claim that some *Bs were lost we have the
following examples:-

29.

S. dialect	Gloss	proto	Embu	Gloss
iga:	'keep'	*Biga	Mbigera	'keep for me.'
ɔna	see	*Bɔna	mɔnia	'show me'.
aka	build	*Baka	mbakɛ	'May I build'.
uga	say	*Buga	Mbug	'May I say'.

In Southern dialects the above roots would all surface
with [ɲ] instead of the Ki-Embu [m]. The reason for this
is that Southern dialect has levelled all vowel initial
roots as if they had /ɓ/. The Ki-Embu surface forms show
us that the origunal i.e. the proto root had a bilabial
fricative. In Ki-Embu as in all other dialects the bilabial
sound was lost but the derivation functions as if it is still
present.

Examples in 29 contrast with those of 30 in that those
of 30 can be shown to have a voiced bilabial fricative.
Note the difference between class 9/10 and classes 7 and 12.

30.

Class 9/10	Class 7	Class 12	Gloss
/Mbori/	KeBori	KaBori	goat.
/Mbirɔ/	KeBirɔ	KaBirɔ	soot.
/Mbake /	KeBake	KaBake	tobacco.
/Mbugi/	Kebugi	KaBugi	bell (on animal)

All the examples in 30 are found in western dialects
except that Ki-Mathira and Northern dialects will have /f/
in classes 7 and 12. The Southern dialect will have /B/
as shown in the examples. In Embu and Mbeere classes 7
and 12 will have /V/ while Gichugu and Ndia will have /B/.
All the dialects will have [b] in class 9/10.

To go back to our claim of the reintroduction of /B/ we
note that this sound has been reintroduced in the roots that
have [mb]. There is no evidence to show that /B/ has been
reintroduced in the morphemes in which it was lost. This
was not to be expected.

In conclusion of this section we should point out that
there seems to be a tendency for many dialects to eliminate
the bilabial fricatives. This is mainly true of Ki-Embu
Ki-Mbeere, Ki-Mathira and Northern dialects. There seems
to be a preference for labodental sounds. Thus in the
Ki-Embu - Ki-Mbeere group both *P and *B change to /v/ and
in Ki-Mathira - Northern dialect group changes to /f/. The
changes experienced here support Honikman (1964). Honikman
says:-

'all languages do not have identical articulatory
setting: whereas one language may resemble another in
this respect, others may differ considerably.'

In our region of study we could substitute the word
language for dialects. Most dialects agree in this respect
of eliminating bilabial fricatives but three of them

i.e. Gichugu, Ndia and Southern dialects have not gone the
same way. It may be they will follow suit but as of
now we have no evidence to make any judgement.

Another interesting phenomenon is that there are
certain *Bs that have been replaced by [j]. These include
gaja: from Proto-Bantu *gaBa 'divide.' Whether this
[j] has been introduced through epenthesis or by a regular
sound change has not been established beyond reasobale
doubts. Guthries says that the change is a regular one but
does not discuss the environments in which it occured.
Our doubts stem from the fact that we have a synchronic
rule of [j] epenthesis (cf. 4.14).

3.3.1 The vowels:

The vowel structure is very much like the proto S. Mt.
Kenya vowel structure. In all the seven dialects one can
easily establish seven vowels. If one considers length each
dialect will have a minimum of forteen vowels. These
vowels play no role in dialect classification. The only
vowels that help to establish dialect boundaries are the
nasalised vowels of Ki-Mathira.

Looking at the vowel structure of PB, one could
postulate the following changes in S. Mt. Kenya:-

31. 1. /i/ < i̧   u̧ > /u/ 7.

2. /e/ < i   u > /o/ 6.

3. /ɛ/ < e   o > /ɔ/ 5

4   /a/

As indicated in 31 (above) all the vowels except *a
have been lowered. Only *a has not been lowered because it
is as low as it could possibly be. The above changes have
occured in all the dialects.

3.3.2. Long vowels:

When discussing the long phonemic vowels we have to
distinguish them from the phonetically conditioned long
vowels. The latter are discussed elsewhere in this study
(cf. 4.2.5). The former will be discussed and exemplified in
this section.

In this section we shall not concern ourselves with the
long vowels of Proto-Bantu (PB). Our main concern will be
to establish the total number of phonemic vowels in the
dialects of S. Mt. Kenya. In these dialects we have
phonemic distinctions between long and short vowels. This
means that instead of having seven phonemic vowels we have a
total of forteen. The long vowels are exemplified in the
following examples (see 32).

Without giving any   minimal   pairs one might suspect that
the examples given in 32 are not enough to establish a
distinction between long and short vowels. It is for this
reason that we have provided the following pairs:- (see 33).

	Vowel	Words	Mbeere	Embu	Gichugu	Ndia	Mathira	N. d.	S. Dialect	Gloss
32.	i:	rìːkɔ́	-	-	-	-	-	-	-	-	Kitchen
	e:	tèːrí	-	-	-	-	-	-	-	-	soild
		kèvé	-	-	-	-	-	-			palm
		ɲvèː	-	-	-						palms
	ɛ:	kɛ̀ːrá	-	-	-	-	-	-	-	-	strain (liquid)
		ndàá	-	-	-	-	-	-	-	-	louse
	ɔ:	vɔ̀ːjá	-	-							pray
		Bɔ̀ːjá			-	-					pray
		hɔ̀ːjá					-	-	-		pray
	o:	vòːrá	-	-							beat
		Bòːrá			-	-					beat
		hòːrá					-	-	-		beat
	u:	ŋgùːò	-	-	-	-	-	-	-	-	hippo.

33.	vowels	words	Mboere	Embu
	i:	rika	-	-
	i:	ri:ka	-	-
	e	reɔ	-	-
	e:	re:wa	-	-
	e:	re:ɔ		
	ɛ	vɛta	-	-
		Bɛta		
	ɛ:	rɛ:hɛ		
		rɛ:ta	-	-
		rɛ:Bɛ		
		rɛ:hɛ		
		kama	-	-
	a:	ma:ma	-	-
		ka:na	-	-
		kana	-	-
	ɔ	rɔga	-	-
	ɔ:	rɔ:ta	-	-

Gichugu	Ndia	Mathira	N. dialect	S. dialect	Gloss
-	-	-	-	-	go into (water)
-	-	-	-	-	age group
-	-	-	-	-	that one (past)
-			-		be drank
	-	-	-	-	be drank
					fold
-	-				fold
		-	-	-	fold
					bring
-	-				bring
		-	-	-	bring
-	-	-	-	-	milk
-					sleep
-	-	-	-	-	deny
-	-	-	-	-	forth
-	-	-	-	-	bewitch
-	-	-	-	-	dream

vowels	words	Mbeere	Embu	Gichugu	Ndia	Mathira	N. Dialect	S. dialect	Gloss
ɔ:	rɔ:ka	-	-						come in the morning
o	roga								anew jump
o:	ro:ga								spread seeds
u	vura	-	-						spread seeds
u	Bura								spread seeds
u	hura								rub
u:	vu:ra	-							rub
	Bu:ra								rub
	hu:ra								

- 122 -

With these and many other examples we can now draw a vowel chart for the above dialects. The chart shall include all the phonemic vowels of S. Mt. Kenya. This is shown in 34.

34. i: i   u   u:

     e: e   o   o:

     ɛ: ɛ   ɔ   ɔ:

                   a: a

as stated earlier this makes a total of forteen phonemic vowels. Whether this system comes from PB or not is not relevant to our discussion.

3.3.3 Nasal vowels:

Vowels are generally nasalised when they occur between non-anterior nasals and prenasalised voiced consonants. In features this rule can be formulated as in 35.

35. V→[+nasal] / C   C   C

$$\begin{bmatrix} -continuant \\ +nasal \end{bmatrix} \quad [+nasal] \quad [-nasal]$$

In this section we shall not deal with this type of nasa-lization because this is synchronic. We shall deal with some nasal vowels that seem to occur in some non-nasal environments.

The nasalization to be discussed here is unique to Ki-Mathira dialect. In Ki-Mathira we find some nasalised

vowels before /z/ or /d/, for those who have replaced /z/
with /d/. The present day structures do not show any
nasal segments before this sound but some comparative study
shows that there may have been a nasal segment before this
sound. With examples we shall compare a number of
dialectal forms so as to find out what may have caused this
nasalization. The examples are given in 36.

36. Ki-Embu	Ki-Gichugu	Ki-Mathira	N. dialect	Gloss
ɔ̀ngɛ́	ɔ̀ndɛ́	ɔ̃́ːzɛ̀	ɔ̀ːdɛ́	all cl. 2
		mɔ̃ːzɛ̀		all cl. 2
mɔ̀ndɛ́	mɔ̀ːndɛ́	mɔ̃ːzɛ̀	mɔ̀ːdɛ́	all cl. 6
ɕìɔ̀ndɛ́	tɕìɔ̀ːndɛ́	ɕìɔ̃ːzɛ̀	ɕìɔ̀ːdɛ̀	all cl. 9/10

From these dialectal forms we see that in Ki-Embu and
Ki-Gichugu we have nasal clusters while in Ki-Mathira
and Northern dialects we have long vowels. This length
seems to replace some lost element which, in this case,
could only be a nasal.

Our interest in discussing this feature is to find
out what its phonemic status is. Before coming to any
conclusions we should make a few comments about the
occurence of these nasal vowels. The most interesting
observation about this is that these nasals are found before
this sound only (i.e. before /z/). The other interesting
observation is that some people have a tendency of nasalizing
other vowels before this sound. There are others, also,

who tend to nasalise / / only. Two of my informats had the
following pattern.

37. <u>informant A (33 yrs.)</u>   <u>informant B (18 yrs.)</u> <u>Gloss</u>

ɔ̃:z̃   :d   all cl. 2

ĩ:z̃   ■ :d   all cl. 6

■ :z   mo:de   pestle cl. 3.

Informant A is a postgraduate student in the University
of Nairobi and Informant B has just finished her secondary
education. The two informants are very close relatives and
come from the same village. When I asked them who would
ɔ̀:z̃ɛ́ etc. they claimed that that would be 'Inner Ki-Mathira'
i.e. people who come from the area north of Karatina Nyeri
road and especially north of Karatina.

These two informants have different types of vowels.
The first one tends to nasalise the two long vowels before
/d/ while the second distinguishes between /ɔ/ and /o:/.
This raises a number of questions which include (a) what
is the criterion of choosing the vowel to be nasalised?
(b) in not nasalising /o:/ is the second informant showing
some morpholexical or sound differences?

It may be that the first informant is generalising the
nasalization of vowels before /z/ or /d/ while the second
has learned these words as different. For the second
informant there may be a small set of words that have to
have nasalised vowels. These words belong to a given class

of words. The first informant may be extending the once
limited rule to other lexical items. The question that
seems to be of crucial importance to us, is how we want to
account for these few nasal vowels, which for some people
are limited to words corresponding to nasal clusters in
other dialects.

Since we have not yet got a case where minimal pairs
can be established we feel that this should be treated as
an intermediate change. This is a midway stage between
the loss of nasal elements and the establishment of phonemic
nasal vowels. The change could, also, fail to materialise
but lead to a merger between these nasal vowels and long
vowels which already exist in the dialect. This is the
most likely thing to happen especially due to extra-
linguistic pressures like status of other dialects, written
language etc.

We propose the listing of these words with
nasal elements and then delete the nasal after vowel
nasalization. This seems to be the most logical approach
until minimal pairs can be detected. Note that this case
differs from the French nasal vowels discussed by Schane[5].
In Schane (1971) a case was established for the nasal
vowels to be, synchronically, treated as phonemes. Here
we have not yet reached that stage. Until the changes
extend further we have no need to have nasal vowels in our
chart.

3.4.1 Tone

This section will deal with the role of tone in dialect classification. The type of tone differences that we shall discuss will be limited to the word level i.e. tone in the lexical items. The reason for this is mainly because syntactic tone patterns require much more research than we have done. The second reason is that a large amount of syntactic tone analysis has been done by my colleague Dr. Ford (cf. For 1974)[6] which covers quite a large area of our region of study.

In S. Mt. Kenya tone plays an important role in dialcet classification. One will easily be detected as a stranger if he uses the wrong tone patterns in a given word or set of words. If for example a speaker places a high tone where the local people place a low tone, in a word, he will be easily known to be a non-native speaker of that dialect. He may also have the wrong tone sequences e.g. high, low, high, in a word whose pattern is high low low etc.

The problem of tone patterns or tone sequences is most disturbing in words that may have identical sound structures in two or more dialects. When a speaker of one dialect realises that the word has identical sound structures, in the neighbouring dialect, he assumes that the tone is the same. When he is corrected he fails to see what is being corrected. This problem arises because different dialects classify words differently. A word

that begins with a low tone in one dialect may begin with
a high tone in another dialect and have a sequence of
two high tones in a third dialect. In order to exemplify
this situation we have examples in 38.

In words which have no sound differences but which have
tone differences tone alone will be enough to set dialect
boundaries. In the word for pierce a Ki-Mbeere speaker
will know that you are a stranger if you have a high tone
in the last syllable. Sometimes he may even tell you
where do you come from. My Ki-Embu informants were able
to tell me that I came from 'Gikuu' when I said [mote]
for Ki-Embu [mote] 'tree'. Such corrections were common
to me when I tried to learn tone patterns of my informants.

The disturbing thing to a dialect learner is that in
one word one may be corrected for producing a sequence of
low high instead of high low and in the next word be corrected
for producing a sequence of high low. This can easily
happen because dialects have different tone classes
(cf. Ford 1974).

The only solution to this problem is for one to learn
the tone patterns and tone classes of the native speakers.
The difference between such a learner and the native
speaker is that the native speakers' patterns are produced
naturally i.e. no efforts are made to remember them. The
learner must make efforts to learn and keep the patterns.

38. | Ki-Mbeere | Ki-Embu | Ki-Gichugu | Ki-Ndia |
|---|---|---|---|
| 1. ròːɔ́ | roːɔ́ | ròːá | rótà |
| 2. mùːndá | múːndá | múːndá | múːndá |
| 3. kànúá | kàɲúá | kàɲúá | kàɲúá |
| 4. | Bɔ́jà | Bɔ́jà |
| 5. òrɛ́ːŋgɛ̀ | òrɛ́ːŋgɛ̀ | òrɛ́ŋgɛ̀ | òrɛ́ːŋgɛ̀ |
| 6. òtɛ́mà | òtɛ́mà | óɲí | òɲí |
| 7. ŋgùrúŋgà | ŋgùrúŋgà | ŋgùrúŋgà | ŋgùrúŋgà |

Ki-Mathira	N. dialect	S. dialect	Gloss
ro:a	ro:a	ro:a	skin
mu:nda	mu:nda	mu:nda	pierce
kanua	kanua	kanua	mouth
hɔja	hɔ:ja	hɔja	pray, beg.
irɛŋgɛ	irɛŋgɛ	irɛŋgɛ	pumkin
ini	ini	ini	liver
ŋguruŋga	ŋguruŋga	ŋguruŋga	cave

In conclusion of this (tone) section let us note
that even from the above short list of words we can see
a distinction between eastern and western dialects. The
western dialects tend to have more words with a sequence
of low, low high tones than their eastern brothers. This
may be due to some influence from some neighbouring
languages. I have not done any comparative tone analysis.
Dr. Ford (personal communication) has informed me that
Maasai has a lot of these initial low tone sequences.
Whether this is the reason for the existence of these low
tone sequences only research will tell.

- 131 -

Footnotes:

1. Guthries in his comparative Bantu vol. 2 of 1971
    lists 'Kikuyu' and 'Embe' only as the languages of
    Sourhter Mt. Kenya. There is no mention of any
    other dialect.

2. For Embo, Guthrie (1971) vol. 2, says, 'similar to
    E.51 but *P > B (p. 4). This may have been meant
    for Gichugu and Ndia dialects. These are the dialects
    for which this change can apply. In Embu and Mbeere
    the change should have been *P > V. Since he did not
    show that we assume that Guthrie mistook Gichugu
    and Ndia for Embo.

    This claim about Guthrie's mistake is supported
    by the old political divisions of the region. By
    the time Guthrie did his research these two dialects
    (i.e. Gichugu and Ndia) were in Embu district. If
    Guthrie interviewed a Gichugu informant but who by
    then was in Embu district he could easily record the
    wrong information.

3. Hinnebusch (1973). Hinnebusch argues that Guthrie's
    failure to differentiate between small and large
    groups in Bantu languages stems from his (Guthrie's)
    dismissal of the historical method. Hinnebusch has
    gone further, in subgrouping, than any other
    historical linguist. His is, to my knowledge, the
    first major work to depart from the earlier types of
    classification.

4.	According to Hinnebusch (1973) P-lenition separates
	Swahili from other Kenyan coastal languages. This
	rule puts Swahili in the same group with some
	Tanzanian languages such as Ndengereko, Rufiji,
	Matumbi etc. He further claims that this rule is,
	'characteristic of a large area of Bantu', (Hinnebusch
	1973:220).

5.	Schane S. (1971). In this article Schane argues that
	synchronically we have oral and nasal vowels, in
	French. He cites minimal pairs such as the following:-

	[bɔn ami] < /bon ami 'good friend'.
	[bɔ̃ kamarad]</bon camarade/ 'good friend'.

	[asyɛn ami] < /ancien ami/ 'old friend'.
	[asyɛ̃ mamarad)/ancien camarade/ 'old friend.
	Such examples as these prove that we have surface
	contrast between oral and nasal vowels and this
	contrast should be accounted for in our theory
	(Language 47:3). The Mathira vowels have not yet
	reached such a point of surface contrast. We should
	therefore not treat them as surface contrast until
	further developments have been detected.

6.	For those interested in the grammatical features of tone
	Ford (1974) is highly recommended.

CHAPTER FOUR

Synchronic Phonology.

4.0 In chapter III we dealt with comparative phonology and
the diachronic rules that have led to the existing sound
differences. We did not deal with the differences that
we experience in synchronic phonology.

In this chapter (IV) we shall concern ourselves with
differences that occur in phonological rules of the
present day grammars. Most of the rules that will be
discussed play a major role in dialect classification. A
few of them will be cited as examples of common linguistic
phenomena that put all these dialects into one group.

One major difference between this chapter and the
preceding one is that in chapter IV no rule will be
discussed unless it is in the synchronic grammars of this
region. It must also be phologically motivated. This means
that no diachronic, morphloogical or syntactic rules will
be dealt with in this chapter.

4.1.1 The syllable.

Our discussion of the phonology will begin with the
syllable. The theory of 'syllabic phonology', has been
advocated for and incorporated into the phonological
descriptions by a number of scholars. Those who have
incorporated it into the Natural Generative Phonology
include Vennemann (1973) and Hooper (1973). Other scholars

sc

e.g. Kisberth (1969) and Brown (1972) have discussed syllable
structure and syllable types with a hope of showing that
the syllable is an important concept in generative phonology.
These scholars have shown that without the use of the
syllable certain linguistic rules will miss adequate
generalizations or motivations. In this section a short
discussion of the syllable types found in S. Mt. Kenya
dialects will be given. The relevance of syllabification to
dialect boundaries is also discussed.

As noted by many linguists, c.f. Kisberth 1969, the most
universal syllable type and therefore the most unmarked
is CV. In Bantu languages this syllable type is more general
than any other syllable types. The dialects of our study
are not exceptional in this respect. Though these dialects
have consonantal clusters, they are of a restricted type.

The clustering of consonants appears differently in
different languages and language groups. Each language or
group of languages uses different strategies to get rid of
undesired consonantal clusters. Kisberth (1969)[1] shows,
very clearly, that the epenthesis rule in Yawelmani is
aimed at breaking up the disallowed clusters. A similar
rule was discussed by Hooper (1973). Hooper's epenthetic
rule breaks consonantal clusters found in words that are
borrowed into Spanish.

As will be seen later epenthesis, vowel coalescence,
assimilation etc., are some of the strategies employed by

the above dialects in order to achieve the preferred syllable
structure. These strategies are reflections of the operations
of the strong constraints that human languages impose on
their phonological structures. These constraints have to
be there as checks on what other rules and components may
do.

There is a general assumption that the dialects of
Southern Mt. Kenya have identical constraints on syllable
structure. This assumption has been brought about by the
readings of the available grammars e.g. Barlow (1960). It
is not an assumption cultivated by field work within the
region. Field research shows that there are fundamental
differences especially in the treatment of a sequence of
alveolar nasals and anterior continuants. There are also
differences in the treatment of initial nasals (cf. 3.2.1).

In Embu one finds a tendency to syllabify anterior
nasals when they occur before /v/ and /d/. These nasals
are the first person singular and class 9/10 markers both of
which are marked by ⟨ n ⟩. A comparison between Ki-Embu and
Ki-Mbeere will help to clarify:-

1. | Underlying | Ki-Embu | Ki-Mbeere | Gloss |
|---|---|---|---|
| /n-va/ | m̩vá | vá | 'give' |
| /n-vunda/ | m̩vu:nda | mbù:nda | 'donkey(s)' |
| /n-varika/ | m̩várika | mbárika | 'she goat(s)' |
| /n-data/ | ndata | ndáta | 'barren Woman |

In features the rule can be formalised as follows:-

2.

$$
\begin{bmatrix} C \\ +\text{nasal} \\ +\text{ant.} \end{bmatrix} \rightarrow [+\text{syllable}] \ / \ - \begin{bmatrix} C \\ +\text{consonant} \\ -\text{stop} \end{bmatrix}
$$

Rule 2 syllabifies anterior nasals when they occur before anterior consonants. This leaves the velar continuant out. The velar continuant is always changed into a stop after a nasal.

The syllabification of nasals in 2 is not as strong as the syllabification of stressed nasals in Kiswahili. The Kiswahili syllables are much stronger than the Ki-Embu ones e.g. Kiswahili Mti 'tree' Mtu 'person'. The Embu nasals are not as clear as the Kiswahili ones and even when they are clear they are found in very few people's speech.

The surfacing of the sequences of nasals and continaunts seems to be a recent innovation in Ki-Embu. This fact is revealed by some forms that have voiced stops after nasals. These forms include:-

3. [Mboli]   goat(s)

   [Mbwe]   grey hair

   [Mbura]   rain

   [mbɔgɔ]   buffalo.

These forms lead to a number of suggestions. One of these suggestions is that the rule of nasal assimilation

which generated these forms goes back to a time when °B
was still a phoneme in the dialect. If this is true then
the rule that generates the above forms is a case of rule
morphologisation. It is morphologisation because °B is no
longer a phoneme in Ki-Embu and yet we do have surface forms
with it.

The second suggestion is the one referred to above i.e.
the generation of nasals before continuants is an innovation
in Ki-Embu and that the rule is being borrowed into Ki-Mbeere.
This innovation is likely to lead to the restructuring of
the forms in 3 or a split between /v/ and /B/ as two
different phonemes.

Examples in 3 reveal a serious limitations on the
types of segments that are allowed to cluster into one
syllable. There are two clustering conditions and can be
stated as in 4 (S stands for segment):-

4. (i) If $\emptyset$ S   S V $\emptyset$ (ii) $\emptyset$ S   S   S   V $\emptyset$

Then $\begin{bmatrix} +cons. \\ +nasals \end{bmatrix} \begin{bmatrix} +cons \\ -nas. \end{bmatrix}$ $\begin{bmatrix} +cons \\ +nas \end{bmatrix} \begin{bmatrix} +cons \\ -nas. \end{bmatrix} \begin{bmatrix} -voc. \\ -cons \end{bmatrix}$

e.g. [Mbóli] goat(s)   [Mbwé] grey hair.

The fixing of syllable boundaries where there are
sequences of vowels is handled differently by different
dialects or age groups. Some dialects have more serious
constraints on syllabification of sequences of vowels than
others. These constraints are, mainly, put on what vowel

heights may occur in a sequence. In Ki-Mbeere, Ki-Embu and Ki-Gichugu dialects, initial and medial syllables have highly restricted sequences. The most frequent sequence is /a+u/ which surfaces as a ∅ u. Most other clusters are intolerable. Some clusters such as ∅ ai∅ are not found in any native words that I know of.

These three dialects use a number of strategies to get rid of any undesired vowel clusters. These strategies include total assimilation of the second vowel into the first one (cf. 3.1.4). An example of such total assimilations is /e/ changing into i before, i e.g. /Ke-imba/ Kiimba 'copse'. This chan e is limited to these three dialects only. A second strategy is the gliding rule (cf. 3.1.4).

The other four dialects do not reveal similar constraints on syllable structure. Here a wider range of vowel sequences is tolerated. The sequences include:- ei, au, ea, ia, ai, ue, i, o, u, t, i, etc. All these sequences can occur in the same syllable without the change of the first vowel, into a glide. The eastern dialects of Ki-Mbeere, Ki-Embu, Ki-Gichugu and Ki-Ndia (unschooled people only) tend to glide the first vowel in most of the above sequences. Where such sequences are allowed to occur they are in different syllables e.g.

5.   Eastern dialects

/n-kuɔ/   [ŋgŭɔ/ŋgwɔ́]   clothe(s)

/n-ku:o/   [ŋgü:ó]   hipo(s)

/ro:ɔ/	[ro:ɔ̀]	skin
/mbomboe	[mbomboé]	
	[mbombwé]	spider

In Western dialects both age and dialect boundary play important roles in the syllabification of sequences of vowels. In Ki-Mathira and the Northern dialects sequences of C $\underset{\text{[-voice]}}{\text{C}}$ e + a + C $\underset{\text{[-voice]}}{\text{C}}$ will be realised as

/ ke / a / C in the speech of old people and as
$\underset{\text{[- voice]}}{}$

/ gea / C in the speech of young people. e.g.
$\underset{\text{[-voice]}}{}$

6. **Underlying** | **(some) old people** | **young** | **Gloss**

	Underlying	**(some) old people**	**young**	**Gloss**
i.	/ke-a-ɓoɓo/	keaɓoɓo	geaɓoɓo	of grandmother
ii.	/ke-a-kamau/	keaKamau	geaKamau	of Kamau
iii.	/ke-a-tata/	keatata	geatata	of aunt
iv.	/ke-a-maito/	keamaito	keamaito	of mother
v.	/ke-a-BaBa/	keaBaBa	keaBaBa	of father

The voicing of /k/, in 6 (i-iii) by young people, means that /e+a/ are put into one syllable. This leads to the voicing of /k/ due to Dahl's law. The old people on the other hand put the two vowels in two different syllables hence no voicing of /k/. Note that in old people Dahl's law has operated just as in young people but due to different syllabification the surface forms differ. This age phenomenon is similar to that of Haya's palatalization rule (cf. Byarushengo 1975)[2].

4.1.2 Vowel Clusters.

As shown above syllable boundaries and syllable structures
are not random phenomena in any language. It was noted in
4.1.1 that the most unmarked syllable is ∅CV∅ but we also
have other syllable types. Some of these, other types,
are highly marked e.g. syllabic nasals given above.

Among the syllables made up of vowels only the most
common ones are ∅V∅ and ∅VV∅. The first type is found in
words like [ɔna]'see' while the second type is found in
words like [auma] 'he has gone out'. As will be noted
later the second type of syllables is not common in S.
Mt. Kenya.

In the previous section it was noted that the eastern
dialects disallow most of the vowel sequences that western
dialects allow. The eastern dialects and especially
Ki-Embu, Ki-Mbeere and Ki-Gichugu vowel coalescence and
vowel gliding are common strategies that are used to get
rid of the undesired vowel sequences. The first of these
strategies is exemplified in 7.

7.   underlying   Ki-Embu   Ki-Mbeere   Gloss

     /ne-o-ko-rea/ noːkolja   noːkorja   You are to eat

     /ga-ito/   gɛːto   gɛːto   ours cl. 11

     /ka-iretu/   kɛːletu   kɛːretu   girl cl. 11

     /ne-a-ra-rea/ noːralja   noːrarja   he is eating

In the prefix positions Ki-Embu, Ki-Mbeere, Ki-Gichugu

and Ki-Ndia (especially old and uneducated people) use the same strategies. As shown in 1 this rule applies across formative boundaries. The same is not true of the western dialects. In western dialects a front vowel is usually glided if it occurs before a back vowel e.g. /e+a/ [ja]. In very slow speeches the two vowels are kept distinct. We shall come to vowel gliding shortly.

Looking at the examples in 1 we note that in one case the front midhigh vowel i.e. /e/ in deleted before [o]. In another example /e+a/ change into [oː]. This raises doubts as to whether what we have is vowel coalescence or some type of levelling. It may be that this is a case of levelling that began as a phonological rule. Note that we have aint̪ /a-in-ɛ/ 'let him sing'. If vowel coalescence was a general rule we should have * ɛːnɛ .

The surfacing of [ai] in [a.nɛ] and the deletion of /e/ before [o] makes this rule have many exceptions. These exceptions make the formalization of the coalescence rule quite complicated. We should leave this rule unformalized until its phonological status have been established beyond reasonable doubt.

Earlier on we mentioned vowel gliding. We claimed that front vowels are glided if they occur before back vowels. This rule has been discussed under vowel assimilation and vowel dissimilation (cf. 3.1.4 and 3.1.5).

In suffix positions the eastern dialects are divided
into two subgroups. These are, the Ki-Mbeere -Ki-Embu
group and the Ki-Gichugu - Ki-Ndia group. In Ki-Mbeere
- Ki-Embu area a rule of consonantal epenthesis is applied
to break up vowel clusters that occur medially. The medial
clusters that motivate epenthesis are made up of a non-low
vowel followed by a low vowel i.e. $[-low] + [+low]$. In
features the epenthetic rule is:-

8. $\emptyset \rightarrow \check{s} / \underset{[-low]}{V} \underline{\quad} \underset{[+low]}{V}$

Rule 8 inserts a consonant between the root and the
habitual tense morpheme. The habitual tense morpheme is
aga . For exemplification see examples below:-

9. <u>Underlying</u> <u>Ki-Embu</u> <u>Ki-Mbeere</u> <u>Gloss</u>

Underlying	Ki-Embu	Ki-Mbeere	Gloss
/n-egu-aga/	ˈbeguśaga	mbeguśaga	'I often hear'
/a-die-aga/	adieśaga	adieśaga	'He often goes'
/a-re-aga/	areśaga	areśaga	'He often eats'

The most frequent environments in which this rule
operates are created by the above morpheme but we have
reasons to judge that the rule operates any time its
Structural Description (SD) is met. This is revealed by the
operation of the rule in such forms as /ʋe ʋɛ-ana/ ʋɛ́śanà
'give each other'. This form surfaces differently in
different dialects e.g.

10.	KiMbeere-KiEmbu	KiGichugu-KiNdia	The rest
/ʔɛ-an-a/	vɛ̌anà	Bɛ́anà	h ɛ̀anà

The Ki-Embu-Ki-Mbeere forms in 10 reveal that even
when the two vowels are both low the rule will operate. We
need to specify further that the only time when the rule
will not operate is when the two vowels are identical e.g.
/a+a/ which surfaces as [a:] . In the two dialects we have
/kaana/ [ka:nà] 'deny', /ka-ana/ [ka:nà] 'child'. These
forms confirm our claim that when the two vowels are identical
the epenthesis rule is not applicable.

In initial positions vowels of different heights are
allowed. These sequences include /au/, /a / etc. The first
sequence occurs in [àúgà] 'há has said', and [àɔ́nà] 'he has
seen'. These forms are not counter examples to our claim
about epenthesis because they do not generate medial vowel
clusters.

Examples and discussions given above reveal that epenthesis
is motivated by syllable structure constraints. These
constraints disallow the generation of any medial syllable
with two vowels of different heights. Even two separate
syllables in medial position are disallowed if they have
two vowels of different heights occuring adjacent to each
other.

Another fact revealed by the above discussion and

examples is the role of this rule to dialect classification.
Epenthesis separates KiMbeere and Ki-Embu from Ki-Gichugu
and Ki-Ndia. As it will be seen later Ki-Gichugu and
Ki-Ndia use a different strategy to overcome the same
problem.

In discussing this rule one sees an interesting
similarity between this epenthesis and Hooper's (1975)
example in Spanish. For Spanish the rule changes structures
from /CCV/ to CVÇCVŚ . Our Ki-Mbeere - Ki-Embu rule
changes structures from /CV-VCV/ to [CVᶾCVˢCV] preferred
syllable structure.

4.1.3 Consonantal assimilation.

Assimilation is defined as a process by which a sound
acquires features of another sound i.e. adopts features
from another sound. This process takes place, usually, when
the two sounds are in contact. The opposite of this is
dissimilation (see 3.1.4.1). In this section we shall deal
with assimilation of consonants in the dialects of this
study.

There are two main types of assimilation of consonants
in the dialects of Southern Mt. Kenya. These are:-
    1. Assimilation to the point of articulation.
    2. Assimilation to the manner of articulation.
The most general of these two is 1 which is found in all
the dialects. This type of assimilation mainly affects

the nasals. Nasal consonants assimilate to the point of
articulation of the following consonants. In features the
rule is formulated as in 11:-

11. C $\longrightarrow$ [αpoint] / - C
    [+nasal]   [αpoint.]

This rule is found in all the dialects of S. Mt. Kenya
but with minor variations in some dialects. These variations
include the generation of [M] before /f/ and /v/ in some
dialects. This is a variation in that according to rule 11
we expected to find[ŋ]in these environments i.e. before
/f/ and /v/. The variations are found in Northern dialect
and in Ki-Mbeere respectively. For these speakers the
rule misses an important point by failing to show that
/n+f/ and/n+v/ will surface as[mb] for these two areas,
and not the expected *ŋv, *ŋf or *ŋv. This peculiarity
has to be accounted for in our phonological theory.

To account for the generation of mb from the above
underlying forms there are two possible approaches. The
first one is to incorporate the archisegment into our
linguistic theory i.e. N.G.G. This has already been done
by Hooper (1975). With the archisegment the underlying
forms for the above surface form will be /N+f/ and /N+V/.
From these forms we shall get [mb] after the application of
the necessary rules.

The second approach is to treat the rule as a morpholo-

gical one. As a morphological rule one appeals to the
historical development of the labial sounds of S. Mt. Kenya.
Historically it is possible to prove that both /f/ and /v/
come from °/ð/. At the time that these two sounds were
realised as °/ð/ rule 11 was a true generalization in all
the dialects. This is still true in Ki-Gichugu, Ki-Ndia
and Southern dialect.

When °/ð/ changed into /f/ and /v/ in some dialects the
old products of °/n+ð/→[mb] were retained. The retention
of the same surface forms even when the sounds had changed
shows that the rule was morphologised. It was viewed as a
rule that generated a class of morphemes which had not
changed.

Morphologization of rule 11 seems to have been a general
feature of Ki-Embu phonology at one stage. This is still
retained by some speakers in a few old structures. Compare
the Ki-Embu forms in 12a with those of 12b.

12. a (i) mboli   /n+vori/   goat(s) cl. 9/10.

    (ii) mbɔgɔ   /n+vɔgɔ/   buffalo(es) cl. 9/10.

    (iii) mba   /n+va/   give me.

    This same dialect has:-

12. b (i) ŋvu:nda   /n+vunda/   donkey(s) cl. 9/10

    (ii) ŋvota   /n+vota/   hunger   cl. 9/10

    (iii) ŋve: /n+ve/   palm(s)   cl. 11/10.

For some Ki-Embu speakers 12a (iii) is pronounced as va .
The change from mba to va shows that the rule of nasal
assimilation is gaining generality of over morphologization.

The struggle between rule morphologization and rule
generalization is limited to Ki-Embu dialect. This is the
dialect that has labio-dental nasals. Other dialects i.e.
Ki-Mbeere and Northern dialects have kept the morphologized
forms unchanged. Whether or not a similar situation will
arise in these two dialects remains to be seen.

Nasal assimilation plays an important role in
establishing dialect boundaries. This rule classifies
Ki-Mbeere Northern dialects and most of Ki-Mathira in one
group i.e. the group with morphologization. The same rule
classifies Gichugu, Ndia and Southern dialect as the group
with a general assimilatory rule while Embu is in both the
general rule and in morphologization.

Another rule that affects the consonants is that of
palatalization. This affects a voiceless velar stop only.
A voiceless velar stop becomes palatalized when it occurs
before front vowels i.e.

13.
$$
\begin{bmatrix} +\text{high} \\ -\text{cont.} \\ -\text{voice} \end{bmatrix} \longrightarrow +\text{palatal} \Big/ — \begin{bmatrix} +\text{front} \end{bmatrix}
$$

The vowel must be marked [+front] and not [-back]
because our vowels include /ʉ/ which is [-back] and
[-front]. For this reason we have to make sure that our
rule is restricted from applying to /k/s before /ʉ/. The
operations of rule 13 are shown in 14.

14. /kira/   [ḱira]   'Shut up.'

     /keama/   [ḱeama]/[kyama] 'council'

     /k na/   [ḱɛna] /[kɛna] 'be happy'

The variations between [ḱeama] [kyama] and [kɛna]/
[kɛna] are determined by dialect boundaries. The eastern
dialects tend to glide a high vowel while western dialects
keep it separate but in the same syllable with the following
non high vowel.

4.1.4 Vowel assimilation

Assimilatory rules that affect vowels are different
from the assimilatory rules that affect consonants. The
major difference lies in that no cases of total assimilation
exist in consonants but we have some in vowels. It will
also be noted that assimilation to the manner of articulation
differs between the two groups of sounds. Consonants become
voiced when the occur after nasals but no vowels become
voiceless when they occur after voiceless consonants.

There are two major vowel assimilation process.

1. Partial assimilation.

2. Total assimilation.

The first rule affects the first vowel in a sequence of
two vowels. When the first of the two vowels is a front
vowel and the second one is a back one the first is
pulled to a palatal position thus becoming a glide. If
the two vowels are front an epenthetic front glide is
inserted to break the cluster. These changes occur in all
the dialects. The following examples will illustrate the
changes:-

15.	Underlying	E. dialects	W. dialects	Gloss
(i)	/e-ug-ɛ/	jugɛ	jugɛ	let it say (cl. 9)
(ii)	/e-ɛn-ɛ/	jɛnɛ	jɛnɛ	other peoples'(cl.9)
(iii)	/e-ɔn-ɛ/	jɔnɛ	jɔnɛ	let it see (cl.9)
(iv)	/i-ɛmbɛ/	ejɛmbɛ	ijɛmbɛ	mango (cl. 5).

It is obvious that the above examples have the same
sound structure in all the dialects. The main differences
occur in the tone structure. For the differences in tone
structures see 3.4.1. There is also a minor difference in
the quality of the initial vowel of 15(iv). The discussion
of morphological differences was given in 2.2.1.

In situations where two derivational front vowels
occur in a sequence the second is always changed into a
palatal glide. This may be another strategy of getting
rid of medial vowel clusters. If this was not the case
the following examples would have attracted epenthesis
between the two front vowels.

16. <u>underlying</u>   <u>w. dialects</u>   <u>Gloss</u>

    /e-e-ɔn-ɛ/   ejɔnɛ   (let) it see itself

    /e-e-umi-ɛ/   ejumiɛ   (let) it take itself out

    /e-e-anaŋg-ɛ/   ejanaŋgɛ   (let) it destroy itself.

The gliding rule operates any time its structural description is met. In order to make sure that no epenthesis takes place in the above environments, which would be ungrammatical, our gliding rule must be reformulated as in 3 below:

17. V $\longrightarrow$ [-syllabic] / ∅ - V
    [+front]   -front.

Rule 17 will glide any syllable intial front vowel if the following vowel is nonfront. Rule 17 does not, in any way, prevent epenthesis to insert a glide between two derived vowels if the epenthesis rule applies before the gliding rule. To avoid the insertion of [j] between two derived front vowels we have to formulate our epenthesis rule ina way that makes it apply after syllabification has taken place. The [j] insertion rule has to be as follows:-

18. ∅ $\rightarrow$ [j] / V ∅ - V
    [+front]   [+front.]

This rule will only insert a glide if there is a syllable boundary between the two vowels. Note that this rule cannot apply before syllble boundaries have been

fixed. This makes glide insertion rule restricted to
near surfaces forms with two front vowels only.

The assimilatory nature of palatal glide formation
is limited to the point of articulation. The pulling of
a front vowel into a palatal position is due to the backness
of the following back vowel but the assimilatory process
is changed into dissimilation by the change of features
from [+vocalic][+front] to [-vocalic][-front].

The crucial thing here is the change from [+vocalic]
to $\begin{bmatrix} -voc \\ -cons \end{bmatrix}$ Which is a dissimilation. The change of
this feature may be more important than the assimilatory nature
discussed above. This dissimilation changes the vowels
from one major class to another thus becoming a member of
another natural class i.e. the class of glides. We
therefore should treat this case as one of dissimilation
in vowels.

The second type of assimilation involves the raising
of vowels. The raised vowles are /a/ /o/ and /e/. The
raising of these vowels is dependent on the dialect under
discussion. Some dialects will fail to raise /e/ but raise
/a/ while others will raise /e/ but fail to raise /a/. The
following examples will show the dialect grouping:-

19.   underlying   Eastern   Western   Gloss
  (i) /a-ere/   aere   ɛ:re   two cl. 2
  (ii) /a-era/   aera   ɛ:ra   he has told cl.2.

(iii) /a-uga/   aúga   ɔ́ɩ̀ga   he has said cl. 2.

(iv) /o-uga/   úga   ùgá   say (2nd per. sing.)

(v) /o-uma/   ùmá   ùmá   get out (2nd per. sing.)

(vi) /ke-imba/   kì:mbá   kéìmbà   copse.

From these examples we note that Eastern dialects fail
to raise /a/ to[ə]in i-iii but raise /e/ to [i] in vi.
The Western dialects do the opposite by raising /a/ to[ɛ]but
keeping /e/ intact in vi. The case of /a/ + /e/ should
be seen as both raising and lowering i.e. reciprocal assi-
milation whereby the two vowels collapse into[ɛ:].

In the above examples we have total assimilation of
/o/ into [u] before /u/ and /e/ into [i] before /i/,(in
the Easter dialects). We also have other cases of total
assimilation that affect /a/. This happens when this
vowel occurs before /ə/. This rule operates in all dialects
but Eastern dialects have some people who tend to fail
to assimilate /a/ to /ɔ/. Examples for this rule include.

20. /ka-ɔnʃe/   kɔ:nʃɛ   lame   (cl. 11).

     /ka-ɔndɔ/   kɔ:ndɔ   bag   (cl. 11).

     /ma-ɔru/   mɔ:ru   bad   (cl. 6).

Distance between the two vowels, in height, and their
differences in frontness or backness seem to be the main
reasons for the change. In general when two vowels are next
to each other in height and if they agree in backness or
non backness the lower one tends to be pulled to the higher

one. When the two vowels disagree in frontness or non
frontness they are likely to be left intack e.g. kaigɔ
〈/ka-ig / ' a small heap', [koinera]〈/ko-in-era/ 'to
sing   for.' The reason for the change of the vowels, in
examples 19 and 20, may be due to the fact that the same
part of the tongue has to be used in their production.
This makes their production ahbit problematic if they
have to be kept distinct.

When the two vowels of the same feature in backness
or frontness are changed into one the result is easier to
produce than the input. The same is true of the two vowels
that colapse into a third vowel e.g. /a/+/e/[ɛ:]/a/+/o/[ɔ:]
etc. The force behind the changes is the problem of
articulation of the two different vowels.

As noted above these rules have an important role in
fixing dialect boundaries. The rules that colapse /a/ and
/e/ into[ɛ:] do not operate in Eastern dialects while the
rule that assimilates /e/ into [i] does not apply in
Western dialects. The same is true of the collapsing of
/a/ and /o/ into[ɔ:] which operates in western dialects
only.

4.1.5.1 Consonantal dissimilation

Dissimilation is a process by which sounds become
unlike each other. As with assimilation this happens,
in most cases, when the sounds involved in the process are

in contact. The word most, is used because there are cases
when dissimilation may involve two sounds that are not in
contact. In cases where the sounds are not in contact
they are usually in adjacent syllables. In this section
we shall discuss both cases of dissimilation i.e. sounds
in contact and sounds at a distance.

First we shall discuss consonantal dissimilation. The
only rule of consonantal dissimilation that we know of is
Dahl's law. This is a rule of voice dissimilation which
occurs in many Bantu languages. The rule in its most
general form occurs as in 21.

21. C

$$
\begin{bmatrix} +\text{back} \\ +\text{high} \\ +\text{stop} \\ -\text{voice} \end{bmatrix} \longrightarrow [+\text{voice}] \quad / \quad \# - V+ \begin{bmatrix} C \\ -\text{Voice} \end{bmatrix}
$$
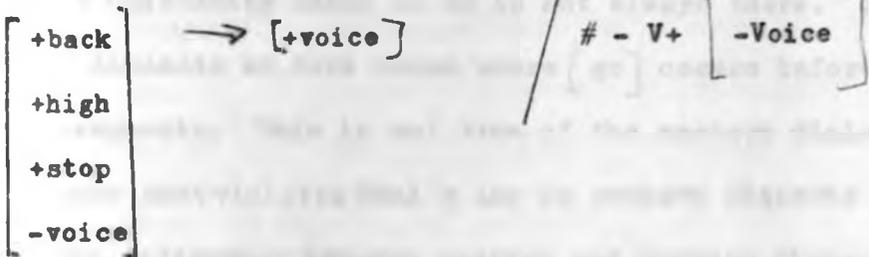
Rule 21 voices a /k/ any time it occurs in prefix
positions if the following syllable begins with a voiceless
consonant. In languages that have no voiced velar stop
changes into a voiced velar fricative. In order to
understand this rule let us look at the examples given
in 22:

22.	underlying	W. dialects	Gloss
	/ko-kama/	gokama	to milk
	/ko-tara/	gotara	to count
	/ko-ruga/	koruga	to cook

/ko-ina/   koina   to sing

/ko-rara/   korara   to sleep.

As stated earlier, /ko/ 'to' changes to ɣo and not
to * ɣo . This is because the dialects of this study have
no voiced velar stop. This may be a minor point but it
makes rule 21 incorrect in that the voiceless velar stop
does not only become voiced but it also weakens to a conti-
nuant. The fact that the dialects have no voiced velar
stop should be stated somewhere in our grammar soas to
take care of this change. This can be taken care of by
inserting a statement in the sound inventory.

The uniformity shown in 22 is not always there. In
western dialects we have cases where [ɣo] occurs before
voiced segments. This is not true of the eastern dialects.
The sounds that violates Dahl's law in western dialects is
/d/. The difference between western and eastern dialects
is shown in 23.

23. underlying   eastern   western   Gloss

/ko-daka/   kodaka   ɣodaka   to play

/ko-dira/   kodira   ɣodira   to finish

/ko-dika/   kodika   ɣodika   to burry

/ko-dura/   kodu:ra   ɣodu:ra   to select.

The occurence of ɣ- before /d/ raises a number of
questions. These questions include: (a) Why should this
sound be treated as a voiceless sound? (b) What led to

the split between the dialects? The first question is
more important to us than the second. It is important because
this study is concerned with sound change and some sound
change must have been responsible for the above treatment.

In order to account for this strange behaviour of
/d/ we need look at its history. The history is revealed
by a corparative study of the words that have this sound.
The following words come from Kiswahili, Duruma, Tharaka
and Western dialects of S. Mt. Kenya.

24. | PB | Kiswahili | Duruma | Tharaka | W. dialects | Gloss |
|---|---|---|---|---|---|
| CE | nči | - | nde | de | land, world |
| CANGA | mčaŋga | mutsaŋga | moeaŋga | modaŋga | sand |
| CODI | čozi | tsozi | reɵɔri | reidɔri | tear of eye |
| YICI | MČI | mutsi | moɵe | mɔ:de | pestle |
| PACA | pača | - | ma:ɵa | maɪada | twin |

These words have the same meaning in all the above
languages but differ in sound structure. Assuming, as has been
assumed in earlier works, that these languages originate from
one mother language we have a clear picture of a possible
change from the original sounds to their present day forms.
The changes are different in different languages. In the
dialects of S. Mt. Kenya the original sound has been voiced
while in Duruma Kiswahili and Tharaka the sound is still
voiceless. Even in our dialects of study there are some forms

which retain the voiceless sound. For exemplification of
this we have forms in 25:

25. <u>PB</u>   <u>Kiswahili</u>   <u>S. Mt. Kenya</u>   <u>Gloss</u>

    CƐNG   CƐŋga   SƐ:ŋga   cut at once

    CƐC -   -   déða   pierce

    CAAC   Canja   éasa   chop up

The presence of these forms suggest that there occured
a split of the PB* C into /d/ and /ʃ/, in S. Mt. Kenya. The
latter shifted to /ð/. This presence, of /d/ and /ð/ may have
come in two ways. The first possibility is that all the PB
*/C/s shifted to /d/ in some dialects with later borrowings
of */č/ from neighbouring dialects. The second possibility
is that some PB */č/s shifted to /d/, in certain restricted
environments, which resulted into the phonemic split of
the original sound. The latter possibility can be confirmed
by Tharaka examples from Lindblom (1914).

According to Lindblom the only environment in which
*C becomes /d/ is after a nasal. If, by any chance, the
nasals drop out we are likely to get a split in Tharaka.
If this happened, in Tharaka, we should have /d/ and /θ/.
Neither of the two possibilities has been proved wrong in
sound changes.

                                          led
Regardless of whatever changes/to the present day
surface forms we still trace the original sound in the

following stages.

26.   *C   č   ts   θ   d
        1   2   3   4

It is not necessary that all the languages and dialects
should take the same line of change. In the dialects of
our study we have no proof that /θ/ ever existed.

From the preceding discussions and examples it is
evident that /d/ historically comes from a voiceless
consonant. This explains why it is treated as a voiceless
sound, for the purposes Dahl's law. The behaviour of this
sound orders the change from *ts to /d/ after the introduction
of Dahl's law in the region. The violation of this rule
in W. dialects means that the above change is a recent
innovation. If all the dialects had a general operation of
Dahl's law we would find it hard to fix its order in relation
to the change.

If Dahl's law had come into the region after the shift of
*/ts/ to /d/ no dialect would have developed any exceptions.
Exceptions developed as a result of the failure to reanalyze
the situation after the sound change had occured. Failure
to reanalyze the forms may have been caused by some confusion
as to what was the nature of the underlying sound. This
was especially so where the root had a voiceless sound but
the derived forms had voiced sounds e.g.

27. Embu   W. dialects   Gloss

    So:ka   ɗoka   go bad.

    ŋɗoku   ɗo:ku   bad cl ilio

    Sokora   Sokora   make good (Rev.)

Note that KiEmbu has an underlying voiceless consonant
while western dialects have two underlying sounds. In
w. dialects the verb and the noun have voiced sounds while
the reversive has a voiceless consonant. The Embu forms will
all take go as their prefix in the operation of Dahl's
law but western dialects should if Dahl's law was equally
general, take both [ko] and [go]. This kind of behaviour
of sounds is deplorable in that one morpheme has two
underlying forms with two different prefixes. To avoid
this deplorable situation all the western dialects take
go for both underlying forms e.g.

28. Underlying   w. dialects   Gloss

  / ko-ɗoka /   [goɗo:ka] not koɗo.ka 'to go bad

  / ko-sokora /   goSo:kera +   to make good.

These morphemes show that restructuring was not
completed. The result was lack of uniformity in underlying
forms which led to lack of uniformity on the surface.
The speakers in their efforts to maintain uniformity violated
Dahl's law. Uniformity of the prefixes is a deliberate
effort on the part of adults - who keep on correcting children
who begin by learning a general rule of devoicing initial

sound if the root begins with a voiced sound. For the
young language learners examples in 28 are [kòdó:kà] and
[gòšó:kòrá] but their parents and elder brothers and
sisters keep on harassing them until theiry violate the
rule.[4]

Having established the reasons for the exceptional
markings on /d/ we should now turn to our grammars and
see how this violation of a phonological rule is to be
accounted for. In order to account for this change we
have to accept one of the followings:-

1. Rule ordering

2. Restructuring.

with a grammar that allows extrinsic rule ordering like
Transformational Generative Grammar (TGG) as exemplified
by Chomsky and Halle 1968, we shall have the following two
rules:

29. C

$$\begin{bmatrix} + \text{back} \\ + \text{high} \\ + \text{stop} \\ - \text{voice} \end{bmatrix} \longrightarrow [+ \text{voice}] \quad / \ \# - V \ \text{voice}$$

30. C

$$\begin{bmatrix} + \text{cor} \\ + \text{ant} \\ - \text{stop} \\ - \text{voice} \end{bmatrix} \longrightarrow [+ \text{voice}]$$
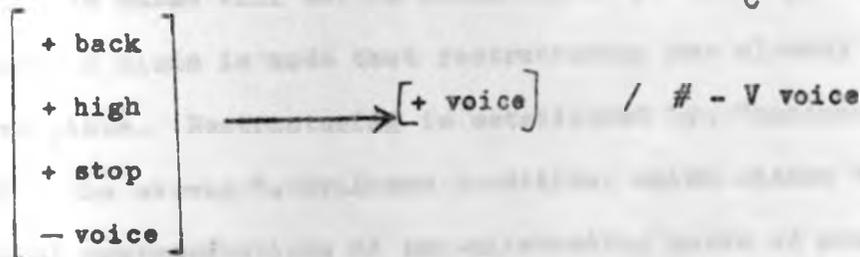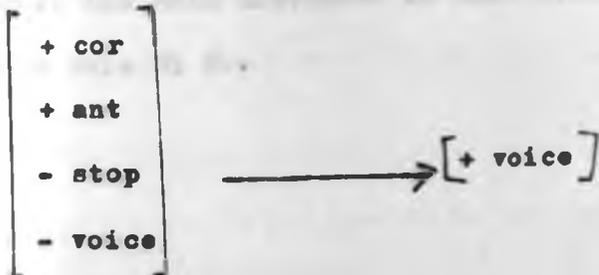
Rule 29 voices /k/ in initial positions if the root begins
with a voiceless consonant and rule 30 changes /θ/ to ð
in all environments.

While rules 29 and 30 are adequate for the data given
one finds serious shortcomings with their claims. Note
that in this type of grammar /θ/ is taken as underlying
sound but never surfaces in any environment. The choice
of this sound as the underlying form for /ð/ is based
on the principle of the shortest distance but the realities
of the examples given are different. We noted earlier
that there is no proof that /θ/ ever existed in this region.
We also noted that there is an alternation between /ð/
and /s/ < *tʃ within the dialects that have violated Dahl's
law. The examples prove that the motivation for positing
/θ/ is formal elegance and not linguistic realities.

If we have a grammar that disallows extrinsic rule
ordering as exemplified in Vennemann (1973) and (1974)
the above rules will not be acceptable. In this type of
grammar a claim is made that restructuring has already
taken place. Restructuring is established by, Vennemann's
(1973) the strong Naturalness condition, which claims that,
'Lexical representations of non-alternating parts of morphemes
are identical to their phonetic representation'. For this
grammar the data discussed in this section will be accounted
for by rule 31 #:-

31.

$$
\begin{bmatrix} C \\ - \text{voice} \\ + \text{back} \\ + \text{high} \\ + \text{stop} \end{bmatrix} \longrightarrow [+ \text{voice}] \ / \ \# \ -V \begin{bmatrix} \begin{bmatrix} C \\ - \text{voice} \end{bmatrix} (i) \\ \begin{bmatrix} \ + \ \end{bmatrix} (ii) \end{bmatrix}
$$
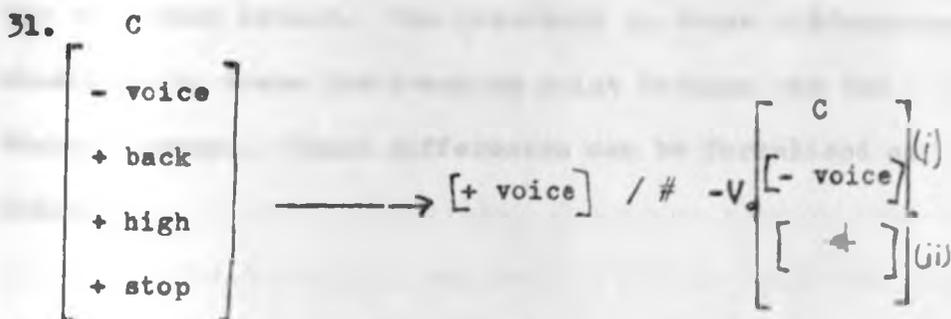
Rule # 31 voices all /k/s occuring in initial positions
if the root begins with either a voiceless consonant
or with a voiced alveolar fricative. This type of grammar
i.e. Natural Generative Grammar (N.G.G.) has formal
complexities but reveals the actual linguistic realities.
The realities of this rule are that the present day speakers
of western dialects have more complex grammars than their
forefathers. This formal complexity predicts that for
uniformity to be achieved the special markers on /ɗ/
have to be erased. The NGG's prediction contradicts with
TGG,'s prediction which claims that uniformity will be
achieved by the loss of the voicing rule (i.e. rule 30)

The occurrence of $[k]$ before /ɗ/ in eastern dialects
shows that the special markers that were placed on /ɗ/
were lost thus treating it like any other voiced consonant.
Notethat it is not the loss of the voicing rule that took
place. This to $_{us}$ is a good proof that /ɵ/ is not the
underlying sound of /ɗ/. The realities of this change is
that NGG had the correct prediction which proves that formal
elegance and right predictions do not go together.

The eastern dialects have gone back to the original
uniformity of Dahl's law while the western dialects keep

the violation intact. Our interests in these differences
should be to trace the breaking point between the two
dialect groups. These differences can be formalised as
follows:-

32. <u>Stages</u>   <u>E. dialects</u>   <u>W. dialects</u>

1	C	V	+	C	V	C	V	+	C	V
<u>Voice</u>		+		-			+		-

2.	C	V	+	C	V	C	V	+	C	V
<u>Voice</u>		+		+			+		+

3.	C	V	+	C	V	C	V	+	C	V
<u>voices</u>		-		+			+		+

In stage 1 Dahl's law was uniform but at stage 2 certain change
occurred that led to the voicing of the initial consonant
of the root. At this point Dahl's law was violated. Speakers
of eastern dialects reanalyzed their Dahl's law and devoiced
the consonant in the prefix position. The speakers of western
dialects did not reanalyze this rule and the violation was
made a permanent reality. As a result of the failure to
reanalyze this rule western dialects have a more complex
grammar than their eastern neighbours. This complexity
should be revealed in our grammar and any theory that allows
us to write a uniform grammar for the whole region should be
questioned.

The next question that we ought to ask ourselves is
what the motivations for this law are. Many linguists have
discussed the law and have all agreed that this is a rule of
regressive voice dissimilation. They have not however
discussed the motivations behind it. To us this rule seems
to be explainable in terms of the inertia of human vocal
organs.

In these dialects it seems that human vocal organs are
greatly disturbed when called upon to produce voiced and
voiceless sounds in rapid succession. This may not be
true of all human languages but we note that different
languages have different constraints, on what sounds will
occur in a given sequence. In the dialects of S. Mt. Kenya
it seems that a sequence of two syllables that begin
with voiceless consonants is undersired. This explains
why many borrowed words have their sound structures
modified e.g.

33. __Kiswahili__   __S. Mt. Kenya__   __Gloss__

    tikiti ⟶ tigiti   ticket
    karatasi ⟶ karatadi   paper
    sokota ⟶ dogɔta   twist, weave etc.
    khaki ⟶ gɛki
    akeka ⟶ mogeka   mat (floor)

Faced by an undersired sequences of sounds the vocal
organs have a number of options to choose from. The

radical option is to throw out some of the sounds i.e.
hyplology. Other options include assimilation, metathesis,
dissimilation etc. All these processes can be used to
maximise the ease of production of speech sounds. These
strategies, also, help to maximise the communicative
role of human languages.

In these dialects the aim of Dahl's law is to reduce, to
the minimum, the number of alternations. The surface forms
indicate that a sequence of voiced sounds is more acceptable
than any other sequence. It can be claimed that what the
law aims at is to make sure that no two adjacent syllables
are allowed to begin with voiceless consonants. This can be
confirmed by looking at the following examples.

34. Underlying (1) /ko-kama/ (2) ko-ruta/ (3) /kotaratata/
    S.D. (voice) - + - + + +   - + + + ■ +   - + - ++ + - +++
    S.C.   [gokama]   [koruta]   [gotaratara]
        (voice) ++-+++   -+++-+   ++■+++-+++
    Gloss   'to milk'   'to take out' 'to count' ($_{rep}$)

It is obvious from the above analysis that where a
voiced syllable intervenes no change is needed. Since
no examples of two adjacent syllables can be found to
disaprove this claim we are bound to conclude that the
syllable boundary is crucial to the application of Dahl's
law (cf.4 .1.1.) The adjacent syllable constraint explaine
why /koruta/ has not been changed to [goruta]

Constraints on the structure of adjacent syllables are not limited to the feature voice nor are they limited to bantu languages. We find similar examples that affect other features in other language groups. The example that most closely resembles Dahl's law is Grassman's law in Greek and Sanskrit. This is a law of diaspiration which can be stated as 'Whenever two aspirated sounds occur in two adjacent syllables, diaspirate the first one.' The aspirated sounds of these languages include:- /bh/, /th/ /dh/ etc. The diaspiration rule disallows any occurence of these sounds in two adjacent syllables. In features the rule can be formulated as:-

35. $C \begin{bmatrix} \\ +asp. \end{bmatrix} \longrightarrow [- asp] \quad / \quad - V \ \$ \ \begin{bmatrix} c \\ +asp. \end{bmatrix}$

Rule 35 generates the following surface forms

36.   <u>Greek</u>   <u>Sanskrit</u>
       /the/   'put'   /dha/   'put'
       S.D. /thi-the-mi/   /dha-dha-mi/
       asp. + - + - - -   + - + - - -
       SC.[tithemi]'I put'   [dadhami]'I put.'
       asp. - - + - - -   - - + - - -

The similarities between the two laws is revealed by the surface forms which have no rapid succession of the undersired features. It is clear from these two laws that production of different sounds in rapid succession is

serious problem. Whether the problem is the keeping of the
sounds distinct or in the articulation, is not known at this
stage.

4.1.5.2.   Vowel dissimilation

As defined in 4.1.5.1. dissimilation is a process
by which sounds become more differentiated. The motivations
for dissimilation have been said to be both conceptual
and articulatory. The first involves the efforts of a
speaker to make two sounds more distinct while the second
involves his inability to produce two similar sounds in
a sequence. These motivations contradict the reasons for
assimilation - which aim at making the sounds more alike.
One important fact about rules of assimilation and those of
dissimilation is that none of them is universal to all
languages.

One language or group of languages allows a given
sequence of sounds, e.g. voiceless sounds which is disallowed
by another group or language. Another language allows a
given clustering of sounds that may be disallowed by other
languages. We cannot therefore talk of any universal rule
of neural ease, conceptual ease or articulatory ease
without finding some linguistic data to contradict our
claims. These contradictions reveal the varying complexities
of human languages. Some of these complexities differ from
language to language and cannot be accounted for in linguistic

universals. They have to be accounted for on language specific basis.

In the dialects of S. Mt. Kenya we find processes that cannot be accounted for in terms of regional universals. These have to be explained on a dialect specific basis. One of these processes is the change of /u/ to [i] after [ɔ] that is generated from /a + u/. This is an interesting case of vowel dissimilation because it changes a derived form. An earlier rule generates [ɔu] from /au/ but this later rule changes [ɔu] to [ɔi] which on the face of it seems more complex than u.

At first sight [ɔu] looks like an easier sequence of vowels to pronounce than au because of the difference in height and the point of articulation of these two underlying vowels. The first one i.e. (a) is a low nonback vowel and the second one is a high back vowel. The change into u makes the two vowels similar by changing the first one to a back position. The two are now nearer to each other than their input.

On the surface ' ɔu looks easy but when we consider the parts of the tongue used in the production of these two vowels we find that this sequence creates certain problems. The problems include articulation of [ɔ] and [u] in a sequence. Note that [ɔ] is produced by the back of the tongue at a low position but [u] requires that the back of the tongue be raised to a high position. Their difference

in height demands that the back of the tongue shifts from
a very law to a very high position within a very short time
(almost the same time). This type of shift seems most
difficult hence the dissimilation of /u/ from /ɔ/ to make
their production easy.

With the change of *[ɔu] to [ɔi] the whole picture
is changed drastically. [ɔ] remains as a back, mid low vowel
while /u/ changes to a front, high vowel. The first is
produced by the movement of the back portion of the tongue
and the second is produced by the movement of the front
portion of the tongue. The two vowels have no direct
interference because in producing [ɔ] the back portion of the
tongue has nothing to do with the tip of the tongue. In
other words the tip of the tongue could be raised while
the back of the tongue remained low. Here dissimilation has
a simplificatory role.

With the above discussions it should now be easy to
see the processes at work. The following examples are from
western dialects where the rule operates:-

37.

Underlying	Assimilation (a)	Dissimilation (b)	Gloss
/a-a-ur-a/	*ɔːura	ɔːira	he has bled
/a-ug-i/	*ɔugi	ɔigi	'sayers
/a-uⁿ-i/	*ɔiⁿi	ɔiⁿi	out goers
/a-un-i/	*ɔuni	ɔini	'breakers'

To my knowledge no dialect ever uses forms in (a). We have
the dialects using either (b) or surfacing the forms in
their underlying forms. The Eastern dialects surface

underlying forms while Western dialects use forms in (b)
The two groups of dialects have generalized different forms.
In Eastern dialects one never hears (b) forms while in
Western dialects the surfacing of the underlying forms in
the same form is more unusual than usual (cf. 4.1.4.)

To account for the surfacing of (b) forms in Western
dialects we need two rules. These are 38 and 39.

38. $\begin{bmatrix} V \\ - \text{back} \\ - \text{front} \end{bmatrix}$ _____ $\begin{bmatrix} + \text{midlow} \\ + \text{back} \end{bmatrix}$ / ___ $\begin{bmatrix} V \\ - \text{low} \\ + \text{back} \end{bmatrix}$

This rule generates forms in (a) that nobody pronounces.
Now we need rule 39.

39. $\begin{bmatrix} V \\ + \text{high} \\ + \text{back} \end{bmatrix}$ $\longrightarrow$ $\begin{bmatrix} - \text{back} \end{bmatrix}$ / $\begin{bmatrix} V \\ + \text{midlow} \\ + \text{back} \end{bmatrix}$ _____

This rule changes all forms in (a) to those of (b). No
extrinsic order is needed for these two rules.

Another rule that is dissimilatory is that of glide
formation. This rule changes front vowels /i/ and /e/ to
/j/ if they occur before nonfront vowels. It also changes
/o/ into $\begin{bmatrix} W \end{bmatrix}$ if it occurs before Lonhigh vowels. The
dissimilatory nature of this rule is seen in the switching
of features from $\begin{bmatrix} + \text{voc.} \end{bmatrix}$ to $\begin{bmatrix} - \text{voc.} \end{bmatrix}$ when the following

sound is vocalic. This switching of features must be seen
as a strategy to change structures from /v v / to CV

The case of /O/ changing into [w] when it occurs
before nonhigh vowels has two aspects of dissimilation.
These are the changing of a vocalic segment into a
nonvocalic one and becoming higher than the neighbouring
vowels. Note, for example, that by changing /O/ to a [w]
When followed by /ɔ/ makes these sounds become more differentiated
than before the change.

The gliding rule occurs in its most general form in
initial syllables. In this position all dialects glide
but in final positions Western dialects are not known to
glide. Glinding is also blocked where the two vowels are
identical e.g. /O/ + /O/ → [o:] .

4.2.1.   Vowel harmony

Vowel harmony is one of the rare cases of distant
assimilation i.e. assimilation involving sounds that are
not in contact. In our dialects the vowel in the verb
root determines the vowel in the suffix. Among the two
positions the root has more freedom than the suffix. In
the root any of the seven vowels will occur but in the suffix
only two vowels are allowed. Each of these two suffix vowels
i.e. [ə] and [ɛ] takes a number of vowels, as indicated in 40

40.	Underlying:	Surface:	Gloss
(i)	/kim-Vra/	kimera	'mash for ....
(ii)	/ug-Vra/	ugera	'say on behalf of...
(iii)	/oker-Vra/	okerera	'stand for....
(iv)	/rong-Vra/	rongera	'straighten for.....
(v)	/kan-Vra/	kanera	'(refuse) deny for...
(vi)	/kɛn-Vra	kɛnɛra	'be happy for.....
(vii)	/rɔg-Vra/	rɔgɛra	'bewitch for.....

From these examples we find a strange type of vowel
harmony in that the suffix vowels combine vowels that
have no common phonetic feature. Note that $[e]$ is the suffix
vowel of $/i/$, $/u/$, $/e/$, $/o/$ and $/a/$. The first four of this
vowels share a common feature of highness whether midhigh or
high. The fifth vowel is an extremely low vowel hence no
phonetic grounds can be seen as the basis of the grouping.
The other two vowels i.e. $/\varepsilon/$ and $/ɔ/$ take $[\varepsilon]$
as their suffix vowel. These two can be said to have a
common phonetic feature because they are both midlow.

The above examples lead to the following vowel classification:

41.	Set I		Set II	
High	i	u	-	-
midhigh	e	o	-	-
midlow	-	-	ɛ	ɔ
low		a		-

The vowel harmony experienced here differs from other
vowel harmonies in that in other cases where vowel harmony
is phonetically determined all front vowels go together while

all back vowels go together. Such a system exists in
Turkish where front vowels i, j, e, ɛ harmonise while back
vowels i, u, a, o harmonise. It may also be possible to
imagine a system in which high vowels harmonise with other
high vowels and low vowels harmonise with low vowels. In
either of these two cases such a harmony can easily be
discussed in terms of phonetic motivation.

Our examples from S. Mt. Kenya lack any direct common
basis especially in the five vowels of set I. I do not
think that any linguists would want to account for this type
of harmony by positing some abstract common feature. We
suggest that we look at it, as an unusual system and try to
find how best we can account for it. The best solution to
us seems to be bassed on the concept of morpheme. This
suggestion would list the applicative morpheme as er- and then
generate - r- by a rule. The rule would be as formulated
in 42.

42. /e/ ⟶ [ɛ]   /   [+ midlow]   C $\overset{V}{\underline{\quad\quad}}$
    [suffix]

Rule 3 will only change /e/ to [ɛ] when the last
vowel of the verb root is   / ɛ / or / ɔ / which are the
only midlow vowels in our chart.

Our vowel harmony rule does not need any justification
for the grouping of the five vowels in one set. This approach

is justifiable in that the rule is not wholly phonological
but is a morphophonological. Its reference to the suffix
means that the rule is more than a phonological rule. We
also have examples from other languages e.g. Kiswahili. In
Kiswahili /i/, /u/ and /a/ take [i] as their suffixal
vowel while /ɛ/ and /ɔ/ take [ɛ].

The Kiswahili harmony has been discussed both formally
(e.g. in classes) and informally. Some people use features
such as [+ extreme] in order to find a common feature for
/i/, /u/ and /a/. These three vowels will be marked as
[+ extreme] which means that /i/ and /u/ are extreme in
being high while /a/ is extreme in being low. This argument
leads to the following chart:-

43. | | i | u | e | ɔ | a |
|---------|---|---|---|---|-------|
| High | + | + | - | - | - |
| mid | - | - | + | + | - |
| back | - | + | - | + | -(+) |
| extreme | + | + | - | - | + |

The feature extreme has not to my knowledge been
phonetically justified. It would seem therefore that no
phonetic feature exists to justify the phonetic classification
of /i/ /u/ and /a/ into one set. As such one wonders if
this is not another trick to account for the unknown.

We have yet another factor to support this morpheme
theory. The factor is that in the same dialects there are
other suffixes that do not attract the rule of vowel
harmony. One of these morphemes is the consitive i.e. -idi-
This morpheme never changes its form in any environments e.g.

44.	underlying	surface (N. dialect)	Gloss
i	/in-idi-a/	inidia	cause to sing
ii	/ug-ido-a/	ugidia	cause to say
iii	/omb-idia /	ombidia	cause to mould
iv	/et-idi-a/	etidia	cause to call
v	/kɛn-idid	kɛnidia	cause to be happy
vi	/rɔg-idi-a/	rɔgidia	cause to bewitch.

Here we do not get *kɛnɛdia or *rɔgɛdia, for 44 (v)
and 44(vi) respectively, the forms that a trully phonological
rule would generate. This to us is a good proof that the
type of harmony that we have here is not phonologically motivated.

The claim that synchronically the harmony rule is not
phonologically motivated should not be taken as a denial of
its diachronic status. The division of the vowels into two
sets suggests that there may have been a historical rule
that was phonologically motivated. The harmonising vowels
may have been all high or all low. The first + group of
/i/ /e/ /u/ /o/ may have taken [e] as their suffixal vowel
while /ɛ / / ɔ/. took [ɛ] . The third group may have been
that of /a/ alone. Since /a/ does not, phonetically, belong

to any of the two groups it may have been left on its own.

What is likely to have happened is that the suffixing of
/a/ roots with [e] was based on derivational morphology
rather than on phonetic features. These /a/ roots were
therefore marked for [e] suffix and the marking remained
intact. This claim may sound strange but there are many strange
things in human beings and in their languages.

The time factor is also doubtful especially in view
of the fact that other related languages have equally
intriguing rules. It may have been a feature of some
proto-language from which both Kiswahili and these dialects
originated. Whatever its source may have been the rule must
have come into these languages at a very early date.

Before we conclude we should point out that this rule is
both morphological and phonological. As shown in rule 42
the changed vowel is a suffix but the environment in which
it changes do not refer to any morphological information. For
this reason the rule can be discussed in either morphological
or phonological sections. Since it must be in one section
and not in two sections we have chosen to discuss it under
phonological section.

In conclusion it is important to point out that this
rule has no significance in dialect classification. The only
reason for its discussion in this study is due to the writers'
commitment to discuss all major phonological and morphological

processes of these dialects. The rule can only be used as
one example of the common processes in all these dialects.
It therefore helps us to put these dialects in one group.

4.3.1. Deletion

Deletion can be generally viewed as an end result of a
weakening process. This is especially true where deletion
follows assimilation. In such cases one can always show
the weakening process that precedes deletion. There may,
however, be cases where deletion has taken place without
any evidence of weakening. Such cases are usually governed
by syllable structure constraints (hence S.S.θ.). Under
such conditions clusters may be reduced from /CC (c) VCv/ to
C (c) VCV without prior weakening of the deleted sounds.

There may be other weakening cases that on the surface
look like cases of strengthening. I magine a case of a
liquid and a stop changing into a sequence of two stops
i.e. LC $\rightarrow$ CC. If one of the derived sounds drops out one
might be tempted to think that deletion was preceded by
strengthening. Even when the two derived stops are
retained, on the surface, we have to treat this as a weakening
prpcess. Note that even though the surface segment is stronger
than its underlying segment its surface features are
redundant.

Hooper (1973) gives examples of what she calls
context-sensitive weakening. She gives the following
examples (which are reproduced for clarification) from
Spanish:-

45. /verde/ ⟶ vedde [bedde] 'green'

/carga/ ⟶ cagga [kagga] 'charge' etc.

These examples show quite clearly that the derived sounds
have lost their identity. I do not think that any linguist
would want to call this a case of consonantal strengthening
I therefore agree with her that this is a process of
context-sensitive weakening.

4.3.2. Nasal deletion

In Southern Mt. Kenya we have both nasal deletion and
nasal reduction. The first occurs in initial positions when
the following segment is a voiced consonant and the second
affects medial homorganic nasals. The first of these two
rules must be preceded by the rule of voiced stop formation.
The latter rule generates voiced stops from voiceless
consonants and voiced continuants. The nasal deletion rule can
be synchronically formulated as in 46.

46.
$$C \atop [+ \text{nasal}] \rightarrow \emptyset \ /\# - \begin{bmatrix} C \\ + \text{stop} \\ + \text{voice} \end{bmatrix}$$

This rule operates anytime its S.D. is met i.e. in the
Western dialects.

As stated above rule 46 must be preceded by the voiced
stop formation which is formulated as in 47.

47.

$$\begin{bmatrix} - \text{voice} \\ \left\langle - \text{stop} \right\rangle \\ \left\langle + \text{voice} \right\rangle \end{bmatrix} \longrightarrow \begin{bmatrix} + \text{voice} \\ \left\langle + \text{stop} \right\rangle \end{bmatrix} /\# \begin{bmatrix} C \\ + \text{nasal} \end{bmatrix} \longrightarrow$$
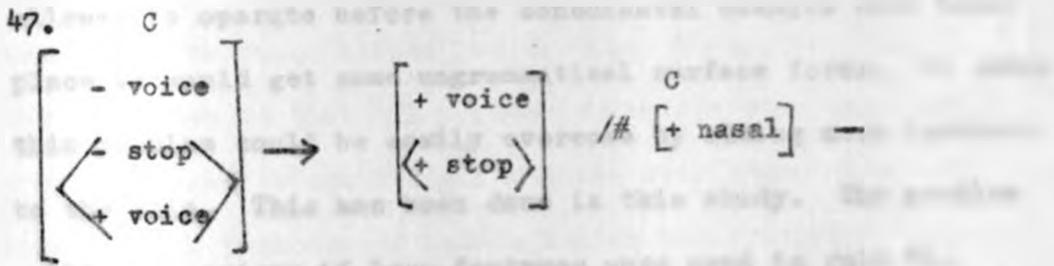
Rule 47 is made of two different phonological processes.
These are the weakening of voiceless consonants and the
strengthening of voiced continuants. The two processes
have different limitations depending on the dialect under
discussion. To exemplify this we have the following
examples:-

48	underlying:	stop form.	ki E -	KG -	West.	Gloss
	n-gor	ŋgorɛ	ŋgorɛ	ŋgorɛ	gorɛ	may I buy
	n-va:t-	mba:tɛ	mba:tɛ ɲvatɛ			may I sweep
	Ba:t-	mba:tɛ	-	mba:tɛ	-	" "
	n-rɛr -	ndɛrɛ	ndɛrɛ	ndɛrɛ	dɛrɛ	" " rear
	n-daka	nda:kɛ	nda:kɛ	nda:kɛ	da:kɛ	" " play
	n-tɛm	ndɛmɛ	ndɛmɛ	ndɛmɛ	dɛmɛ	" " cut
	n-kam-	ŋgamɛ	ŋgam	ŋgamɛ	gamɛ	" " milk
	n-ɓam-	ɲjamɛ	ɲjam	ɲjamɛ	jamɛ	" " taste
	n-de	nde	nde	nde	de	" " world

(For the surfacing of b,d,j and g in western dialects see chapter 3).

Looking at the above surface forms one can easily see why, in a given type of a grammar, nasal deletion should come after voiced stop formation. If nasal deletion was allowed to operate before the consonantal changes have taken place we would get some ungrammatical surface forms. Of couse this problem could be easily overcome by adding more features to the rule. This has been done in this study. The problem would have arisen if less features were used in rule 46.

In the western dialects the nasals are also deleted before /ɟ/ . This sound does not require the nasal because it is always voiced. We should therefore not worry about it in our rules. The rule may, however, be made more general by letting it delete any initial nasal that occurs before a voiced consonant. In order to make this rule more general we need to reformulate it as in 49.

49. $\begin{bmatrix} C \\ + \text{nasal} \end{bmatrix} \longrightarrow \emptyset /\# - \begin{bmatrix} C \\ + \text{voice} \end{bmatrix}$

As shown in the above examples this rule will be limited to western dialects. These are the only dialects that delete initial nasals after the voicing of the consonants. In these dialects rule 49 can be shown to be a generalization of an earlier one. The earlier rule deleted nasals when they occured in initial positions before/ɟ/ and /h/.

Among the two sounds the deletion of initial nasals before
/h/ must be historically ordered before its deletion before
/ɟ/. Two reasons lead to this claim. The first reason is
the lack of any traces of nasals before /h/ while some
dealects still keep nasals before /ɟ/. This to us implies
that the deletion of nasals before this glide occured earlier
than their deletion before the alveolar fricative. The
second reason is that all written materials show that nasals
are disallowed before the glide while some researches have
revealed the presence of nasals before the fricative. Some
of the written materials were recorded at the beginning of
this century which would mean that the initial nasal
deletion may have began during the last century.

The motivation for the rule lies in the identity of the
features (cf. Hinnebusch 1973)[6] The deletion is preceded
by a rule of reciprocal assimilation. Note that the
consonant following the nasal will have assimilated to the
nasals stopness or its voiceness and the nasal will have
assimilated to the point of articulation of the consonant
before deletion takes place. As a result of this reciprocal
assimilation the two consonants will share more features in
common than their input.

When the reciprocal rule has operated many features will
be redundant in that they are shared by the two sounds.
Since the initial consonant has already undergone some
changes the deletion of the nasal would not lead to any loss

of information. Retaining the two sounds looks like double marking of the same features. To avoid this double marking one sound is dropped.

Another possible couse of the deletion is the lack of contrast between voiced stops and voiced fricatives. In these dialects the contrasts exist between prenasalized consonants and voiced continuants i.e. mb/B; nd/r; ŋg/ɡ; mb/v or ɱv/v. There exists no contrast between [mb] and *[b] etc. This means that the reduction of a prenasalized consonant to an (simple) oral stop would create no serious perceptual problem.

Discussions and examples given above confirm what we said earlier about the operation of phonological rules. (Changes shown in 47 would not have been possible if the morphophonemic {n} had not been in the words. This is a further proof that all morphemes have to be combined into words before phonological rules begin to operate (cf. Hooper 1974). One might even go further and state that phonological rules should apply on words and not on smaller units.

The role of nasal deletion rule and other related rules in dialect classification is self explanatory. The Eastern dialects have no nasal deletion. They are grouped together by lack of this rule but have their own internal divisions. The internal devision in Eastern dialects

classifies Gichugu - Ndia region as one subgroup opposed
to Mbeere - Embu subgroup. The dividing line is River
Rupingaci. The dialects west of this river i.e. Gichugu
and Ndia have a general rule of strengthening of all the
continuants including /ɗ/. The subgroup lying to the
east of Rupingaci fails to strengthen all continuants. These
variations are shown in 50 (map 2)

50	underlying	K Gichugu-KiNdia		KiEmbu-KiMbeere	Gloss
	/n-d ngɛ/	ndɛngɛ	ndɛngɛ		he goat(s)
	/n-data/	ndata		ɲdata	baren cl 9/10
	/n-dakamɛ/	ndakamɛ		ndakamɛ	blood
	/n-doŋwa/	ndoŋwa		ɲdoŋwa	ankle
	/n-daka/			ɲdaka	youth cl 9/10

Whether Gichugu-KiNdia group will have nasal deletion
as in Western dialects is not yet established. The
important thing about the above forms is that they have
established a different grouping just like the metathesis did.

The dialect boundaries established by the above rule
should not be taken as indication that KiEmbu and KiMbeere
are identical in their surface forms. As we pointed out
in 3.1.1. KiEmbu has [ŋv] from /n-v/ while KiMbeere has [nb]
for the same underlying forms. What we should note is that
the two dialects agree in a number of ways e.g. generation
of [n d] from/n-d/but disagree in a number of rules. The
[nd]of KiEmbu - KiMbeere group separates this subgroup

from their neighbours i.e. Gichugu and Ndia who have
[nd] for the same underlying form.

As we mentioned at the beginning of this section
we have both nasal deletion and nasal reduction. The
latter is most evident in Western dialects where medial
clusters are reduced to almost single consonants. In
some areas e.g. KiMathira dialect there is a rule of vowel
nasalization. The rule operates when vowels occur before
nasal clusters or what is usually called prenasalized
consonants. This rule is formulated as in 51.

51. $V \rightarrow [+ \text{nasal}] \, / \, -\begin{bmatrix} nc \end{bmatrix}$

For KiMathira speakers this rule is general but for other
areas the rule is generally replaced by rule # 52.

52. $V \rightarrow [+\text{long}] \quad / \, - \begin{bmatrix} nc \end{bmatrix}$

The difference between rules 51 and 52 is that while
rule 52 does not, always, include nasalization the forms
derived by rule 51 are always long. On regional basis
rule 52 is more general than rule 51. We cannot however
do without rule 51 because rule 52 does not include
nasalization. The differences between these two rules
are revealed in # 53.

53. | underlying | KiMathira | S. dialect | Gloss |
|---|---|---|---|
| n-kanga | ga:ŋga | ga:ŋga | gunea fowl |
| idanwa | izɛnwa | idanwa | axe |
| mungu | mu:ŋgu | mu:ŋgu | turnel |
| dambera | da:mbera | dambera | swim |
| kanjore | ka:nɟore | ka:nɟore | Kanjuri |
| ne-n-kanga | ne:ŋga:ŋga | ne:ŋga:ŋga | It is a g. fowl |
| m da-ngoro | mɛza:ŋgoro | mɛda:ŋgoro | an old table |

Lengthening is limited to positions before voiced stops
(cf. 3.3.2.) In Mathira these nasal vowels are so distinct
from oral ones that they should be shown in our grammar.

One posible cause of this might have been the
influence of a nasal which has been lost but whose features
were assimilated by the vowel before it was deleted. This is
the evidence we get when we compare the following examples:-

54. | Gichugu | Mathira | N. dialect | source | Gloss |
|---|---|---|---|---|
| mɔ:ndɛ́ | mɔ̃:zɛ́ | ɔ̃:dɛ́ | *ɔ-ndɛ | all cl. 2) |
| mo:nde | mo:zé | mo:de | *mo:nde `pestle |
| jɔ̃:ndɛ́ | jɔ̃:zɛ́ | jɔ̃:dɛ́ | *e-ɔ-n-di all of it (cl.9) |

In these examples KiMathira's naslized vowels
correspond to long vowels of Northern dialect. They also
correspond to KiGichugu's nasals. From the above comparisons
it is obvious that KiMathira's nasal vowels are derived from
nasals and not an independent innovation. The above nasal

clusters must have been a feature of proto - S. Mt. Kenya.

4.3.3. Glide deletion

In the preceding section we have claimed that for
nasal deletion to take place we need certain feature
identities. We noted that these included identity in
point of articulation, identity in voice and in stopness.
In this section we shall examine the conditions under which
a palatal glide (i.e. [j]) is deleted.

In Southern Mt. Kenya a palatal glide is deleted
if it occurs before a front high vowel. In features
the rule is as follows:-

55.
$$
\begin{bmatrix} - \text{cons.} \\ - \text{voc.} \\ + \text{high} \end{bmatrix} \longrightarrow \emptyset \; / \; \underline{\hspace{1cm}} \; \overset{V}{\begin{bmatrix} + \text{high} \\ - \text{back} \end{bmatrix}}
$$

The above environment is created by the adding of the
nominalizing suffix $\{i\}$ to the verb roots. When such
verb roots end in a palatal glide the glide is deleted.
The root has, also, to be prefixed by other morphemes
which are not relevant to our discussion. The operation
of rule 55 is exemplified below:-

56.   <u>Western d</u>   <u>Gloss</u>

    n-gaj - i   gáí   shares cl. 9/10

    mo-hɔj - i   mohɔ́í   begger cl. 1

56		Western d	Gloss
ke - ɔj - i		keɔi	lifter cl. 7
mo - koj - i		mokoi	starter cl. 1

These examples differ from the following forms which are derived from the same roots.

57. [gàjá] divide gajaⁿɔ the dividing

    [hɔ̀jà] beg, pray ihɔ̀jà pray

    [ɔ̀já] lift ɟɔjanɔ lifting of each other

    [kòjá] start (song) gojanerɔ starting for each other.

A comparison between examples in 56 and those in 57 lead us to the conclusion that glide deletion is based on our earlier claim of feature identity. In these examples we see that deletion is allowed in 56 because [j] and [i] s share a number of common features while in 57 deletion is blocked because [j] and [a] do not share many common features. For further discussions on feature identity read Hinnebusch (1973).

It may look strange to some that we have glide insertion in one section and glide deletion in another section. Such people would, probably, try to posit the a high vowel instead of a glide so as to avoid the glide deletion rule. Such an approach would not be allowed in

the theory used in this study.

The theory used in this study would choose the glide because it has more freedom of occurence than the vowel. It is also true that this vowel carries morphologi and not phonological information. To change it into a glide in all cases except in nouns would be a strange thing. Such a rule would not be a phonological one. Another reason why this vowel cannot be posited as the root sound is that of historical changes. In chapter 3 we gave examples of *B changing to /j/in certain words. If we posited /i/ as the root sound for the above roots we would be claiming that this bilabial fricative changed into a high front vowel in certain words. This claim is not supported by any evidence. For these reasons we reject the positing of the vowel as the root sound in the above examples.

Our glide deletion rule works against the preferred syllable structure. It changes structures from /CVCU/ to[CUU]. Here we have a case of a phonetically preferred structure working against another phonetically preferred structure. This is a case/the conflicting constraints that we often find in human languages.

In dialect classification this rule has no internal relevance. It does not divide our region into any smaller divisions. Its role should be seen as that of classifying the whole region into one entity.

4.3.4. Liquid deletion

In Southern Mt. Kenya dialects we have one phonemic liquid. This is /r/ which in some people's speeches fluctuates between $[r]$ and $[l]$. In these speakers either of the two could be phonemic but for majority of speakers the phoneme is /r/. This phoneme is realised as $[l]$ when it occurs before front vowels or in initial positions while r is realized before back vowels and in medial positions.

In this section we shall deal with liquid deletion. This rule deletes a liquide when it occurs after a formative boundary. In features the rule is formulated as in 58.

58.   Liquid $\longrightarrow \emptyset$ / + - V (+)

The only examples available are those that generate a liquid from the mid-future tense marker i.e.   re.   Whether a similar situation would arise if the liquid came from another morpheme cannot be proved. It is assumed that the liquid will be deleted any time its structural description (SD) is met.

Another thing that we should point out is that there is another formative boundary that follows the vowel, in rule 58. Whether or not this second boundary has any role to play cannot be exemplified because we have no examples of liquid deletion before a formative boundary. For this reason we shall assume that this second boundary is not

important for the application of the liquid deletion rule.

Before we give examples for this rule we should note that this rule could be discussed under morphological changes. This results from its limitations to certain morphemes only. It is hard to prove that the rule is not phonological because no liquids are found to occur before a formative boundary, on the surface. Due to this lack of certainity the rule has been discussed under the phonological chapter. Its discussion in this chapter implies an assumption that all liquids will be deleted whenever they occur after a formative boundary.

Even if it was found out that the rule was limited to a given set of morphemes it would still be discussed under either phonological or morphological chapters but not in both. It is for this reason that we have chosen to put it in this chapter. We do however agree that there may be equally good reasons to discuss it under morphology.

Having decided to discuss this rule under phonology we should now go ahead and show how the rule operates. This will be shown by the following examples:-

59. underlying 3 N. dialect S. dialect Gloss

/to+re+die	toredie	twedie	'we shall go'
/a+re+kama/	arekama	ɛ:kama	'He will milk'
/mo+re+rea/	morerea	mwerea	you(pl.) will eat

These structures are not found in KiEmbu, KiMbeere
and many KiGichugu speakers. The lack of these forms
comes from the replacement of $\{re\}$ tense marker with $\{ka\}$
tense marker. In Ndia many speakers have forms that are
identical to the structures found in the Northern dialect.
Since reduction is limited to the Southern dialect this
rule is important in dialect classification.

Rule 58 is not motivated by the same constraints as
preferred syllable structure. The result of rule 58 is
changed by syllable structure constraints. Note that /O/
is glided after liquid deletion thus placing/O/ and /e/ in one
syllable. It may be that this reduction of $\{re\}$ tense is
related to its disappearance in Eastern dialects (cf. chapt. 2)

In rule 58 we have used a formative boundary and not
a word boundary because we feel that word boundaries have
nothing to do with this rule. To prove this point compare
the following structures. (see 60).

From these examples we learn that in word initial
positions the liquid is not deleted as it was in rule
58. The initial liquids tend to be generalised rather than
deleted. Note, for example, that Ki.Embu has the initial
liquids in all the above examples. In other dialects the
liquid is deleted if the root begins in a consonant.
The change from */re/ to $[e]$ can also be treated as a
diachronic change. (see 61)

60.

underlying:	KiMbeere	KiEmbu
/re+gima/	egima	legima
/re+nɛnɛ/	enɛnɛ	lenɛnɛ
/re+ɔru/	reɔru	ljɔru
/re+ɛga/	reɛga	ljɛga
/re+nge/	e:nge	le:nge

61. • /re/ > /e/ ___ $\longrightarrow$

KiGichugu	KiNdia	W. dialects	Gloss
egima	igima	igɪma	whole cl.5
enɛnɛ		inɛnɛ	big cl. 5
ljɔru		reɔru	rotten cl. 5
ljʌga		reɪga	good cl.5
lenge		re:ŋge	another cl. 5

$[\text{re}] \quad / \quad - \quad {}^{+} [\ {}^{c}\ ]$

Rule 61 presupposes a restructuring of the class marker from {re} to {e} in the couse of history. This is the only approach that can explain why the liquid is deleted before consonants i.e. changing /CVCV/ to [VCV]. This to us seems more diachronic than synchronic. For more details on the morphemes see 2.2.1.3.

After the change from °/re/ to /e/ occured another change took place in Western dialects. This new change raised e to i when this morpheme occured before a consonant i.e.

62. {e} cl. 5 $\rightarrow$ [i] / # - [^{c}]

The marking of /e/ as a morpheme is important because we have other identical vowels that do not change. For this reason /e/ should not only be marked as a morpheme but also as cl. 5 morpheme. The inclusion of morphophonemic features means that the rule is not wholly phonological but morphophonological.

The rules discussed in this section have separated our dialects on different lines. The [re] generalization has separated KiEmbu from all the rest and the raising rule has separated W. dialects from the rest of the dialects.

4.4.1.   Vowel lengthening

Vowels are always lengthened when they occur before prenasalised consonants. For those speakers that have dropped the nasal elements in such environment lenthening must be seen as taking place before voiced stops. Such would be the case in a number of speakers of both Northern and Southern dialects.

The vowel lengthening discussed here should not be confused with phonemic long vowels. The two types of vowels are quite different. Phonemically long vowels have as much freedom of distribution as short vowels. The derived long vowels, on the other hand, are limited to a number of environments. The first environment is the one mentioned above and which could be formulated as follows:-

63   $V \rightarrow [+ \text{length}] / -[^{n}C]$

This rule generates the following forms.

64. underlying:	Eastern	Western	Gloss
/ranga/	ra:ŋga	ra:ŋga	step on
/mokonga/	moko:ŋga	moko:ŋga	eel
/ŋombɛ/.	ŋo:mbɛ	ŋo:mbɛ	cow
/moramba/	mora:mba	mora:mba	bahana tree
/mokanda/	moka:nda	moko:nda	rope
/getanda/	geta:nda	geta:nda	bed

Some speakers in Western dialects will produce the
above structures without the nasals. For these speakers the
vowel lengthening will require a voiced stop and not a
prenasalised consonant.

Except for the nasal reduction that occurs in the
Western dialects this rule has no effect on dialect
classification. We do however have another vowel lengthening
rule that has effect on dialect divisions. This is the rule
that lengthens the first vowel of the perfect tense $\left\{ et\epsilon \right\}$.
This rule cannot be formulated in features because there
are other occurences of /e/ before $[t]$ that are not
lengthened. For this reason the rule must be formulated as:-

65. /e/ $\rightarrow$ [+ length] / $- \left[t \epsilon \right].$

Rule 65 operates in Southern dialects and the southern
edges of Northern dialect only (see map   ). With rule
65 we have the following forms:-

66. underlying;   southern   northern   Gloss

/ne-a-ok-etɕ/	neɔke:tɛ	njɔketɛ	He has come
/ma-ti-etɕ/	madie:tɛ	madietɛ	They have gone
/ne-ma-tar-etɛ/	nematare:tɛ	nemataretɕ	They have counted

In order to understand the nonphonological nature of the above
rule compare the forms in 65 with those in 67.

			Southern	Northern	Gloss
67.	(i)	/get /	getɛ	getɛ	throw it away cl.7
	(ii)	/geta/	geta:	ɐeta	
	(iii)	/kerema	kerema	kerema	mountain

These examples and especially 4'i) show that /e/ does
not lengthen before any [-+ɛ]. It has to be a given typ-
of /e/ in order to lengthen. Since no phonetic arguments are
available for this rule we have to simply put it down as it
is without any phonological explanations.

An alternative to this anlysis could be found in
underlying representations. If we take that different
dialects have different underlying representations we shall
not need to have this arbitrary rule. This alternative is
discussed in chapter 5 (5.3). In that chapter the reasons for
different underlying representations have been given.

Footnotes to Chapter 4

1.   Kisseberth (1969) discusses the Yawelmani

        epenthesis. He showed that by positing the echo

        verbs as ₋CCVC   it was easy to apply (and justify)

        vowel epenthesis to break up the clusters. Positing

        of these verbs as CVC or CVCC would lead to

        dificulties because the language had other similar

        clusters that did not attract epenthesis. He

        compared the following examples:

        (i) /?ṻ: hin/ 'found'   (i) /xil/   'tangle'

        (ii) /hyo:hin/ 'named'   (ii) ?ilk/ 'sing.'

        Morphemes in la attracted epenthesis but those of

        1b did not. The examples in la surfaced as

        (?ile:hin) and hojo:hin respectively. Kisseberth

        concludes that what is restricted is the initial

        consonant clusters. To get rid of such clusters a

        given vowel has to be inserted. This claim is well

        founded especially when we compare this with what

        happens in other languages (cf. footnote 3.)

2.   Byarushengo (1973) stated that the Haya's palatalization

        and affrication rules were applied differently by

        different age groups. He found that one age group

        applied the two rules on /k/ and /g/ while another

        group applied palatalization only. The group that

palatalized but never affricated the velars ended
with (k) and (g) while the other group ended with
palatal affricates.

3. Hooper (1973), 'Aspects of Natural Generative
Phonology,' proved, quite convincingly that the
Spanish epanthetic rule was needed to break certain
consonantal clusters. Any Spanish word that has
initial clusters are subject to an epanthetical
rule that breaks structures from CCV to VC & CV
These words are borrowed from other languages
that do allow the type of clusters that Spanish
disallows. The borrowed words include.

        esnob   'snob'
        esmoking   'tuxedo, (smoking jacket)
        eslavo   'slaw'

After the epenthesis a syllable boundary is
inserted between /s/ and the following c. This
is a clear case of the constraints imposed of
syllable structures. Note that these Spanish
examples correspond to the Yawelmani clusters
given in footnote 1.

4. One of my informants cited an examples of the typeg
of insults that young people or speakers of small
dialects receive from those who think that the
dialect(s) is not good enough. She recalled an

experience with her elder brother in Nairobi.
She had spoken in her Mathira dialect and used
certain local morphemes and pronaunciation.
One of the morphemes used was { mɔɲ for cl. 2
objective marker. Her brother asked her, 'When
will you grow up to speak as an adult?'

   Her brother expected her to say [ɔ] which is the
written mprŋ but she did not. Other reprimands
and corrections include the violation of Dahl's
law. When children fail to violate this rule they
are always corrected by the adults. These children
first learn to place [k] before [d] e.g. kadingi
'a man's name' kedenji) 'a man's name' etc. The
adults tell them that they should be saying
Gadingi and Gedenji. These are the standard norms.

5.   Vennemann (1973) 'phonological concreteness in
          Natural Generative Phonology. In this article
          Vennemann sets out certain principles that are
          supposed to constrain our phonological theory.
          One of these principles is the, 'Strong Naturalness
          Condition,' which requires that the underlying
          representations of non-alternating morphemes be
          identical to their phonetic forms. For the alternating
          morphemes the underlying representations should
          identical to one of the surface forms. This
          constraint rules out any abstract representations.

6.   Hinnebusch (1973)

Augues that for °/mu/ syncopation to take place
in Kenyan Coastal languages the two segments
have to agree 'positively', in respect to cover
feature [+ labiality]·   When such an agreement
has been achieved there is a tendancy for one
of the segments to delete. This happens because
the features of the two segments are redundant.

CHAPTER 5

5.0.   Underlying and surface forms

In chapters two, three and four we dealt with dialectal
differences that exist in morpholexical and phonological
structures of the dialects of S. Mt. Kenya. In this chapter
we shall focus our attention on the relationship between
underlying and surface representation. The purpose for
this analysis will be to show when and where restructuring
occurs.

Our discussions on restructuring will be necessary in
justifying whether or not all the dialects have the same
underlying forms for the given morphemes. Any theory of
sound change that fails to show restructuring does not
reveal the actual process of change. One of the reasons
for such failures   is   rule ordering in synchronic
grammars. It will therefore be necessary to relate
rule ordering and restructuring in this chapter.

In 4.1. we discussed a number of components in our
linguistic theory. These components will be examined in
this chapter so as to reveal the components, if any, which
all or some dialects have common underlying forms. We shall
also be able to show clearly the components in which common
underlying forms should be ruled out.

In cases where a common underlying form exists it will
be necessary to show how the surface forms of different
dialects are generated. The generation of surface forms
without rule ordering imposes a serious constraint on what
rules can do. For this reason the formulation of rules will
have to be examined and evaluated on the basis of what the
rule predicts and whether the predicted change is a natural
one. The test for the correctness of the rules will, in this
case, be based on the changes found in the dialects. In
other words, do changes experienced in the dialects and the
rules written agree? If they do not agree then the linguistic
theory used in the writing of such a grammar should be
rejected.

The above paragraph touches on two important aspects
of sound change. These are rule interpretation and the
diachronic sequence of the rules. These two aspects will
be scrutinized in this chapter. In 5.3.2 rules of each of
the two linguistic theories discussed in this study will be
interpreted and reason for or against the rules given.

5.1 The relevance of a proto-language.

A number of factors lead us to the conclusion that
the dialects of S. Mt. Kenya come from a common proto-
language. These factors include mutual intelligibility
between all the dialects, a very clear system of sound
correspondences between the dialects and a very high
percentage of common vocabulary. Mutual intelligibility

may, of course, come as a result of constant interaction
between two different dialects or languages. This happens
when the two are adjacent to each other but this is not
the case in S. Mt. Kenya.

In S. Mt. Kenya dialects that have no common boundary
have not shown any problems of interaction. A comparison
between KiMbeere and KiMathira or between KiEmbu and Southern
dialect shows that the major differences are in sounds and
of
tones but not in lexical items. Speakers such two dialects
get along without any need for an interpreter. My own
research is a clear indication of this mutual intelligibility.
I conducted it in my dialect i.e. Northern dialect and
nobody ever complained of not understanding me.

Despite what has been said in the above paragraphs we
would still insist that the reasons for claiming that
there was a common proto-language should be based on all
three factors listed above. All three given us a firmer
base for our claims. They also reduce the probability of
borrowing as a reason for the present state of affairs.

5.2 Underlying lexical differences:

In 2.1 we discussed and exemplified lexical differences
between our dialects of study. In this section we want to
ask whether or not all these dialects have an identical
underlying structure.

We take the view that a lexical item exists or does

not exist within a given dialect or group of dialects.
If the lexical item is not used in one dialect then it is
not part of the lexical structure of that dialect. In
S. Mt. Kenya we have words that never surface in some parts
e.g. the words for 'dog' is Kúró and tótó, in eastern
dialects but ŋguí or ŋgíté in western dialects. The last
two words are also found in eastern dialects but the
reverse is not true. This to us means that the words
Kúró and tótó do not exist in western dialects.

Other words could be given to show dialectal variation
but we feel that a long list of words will be unnecessary.
What is important is the claim we have already stated i.e.
the lexical structure of a dialect consists of the words
used by the speakers of that dialect. Any word that does
not surface anywhere does not exist in that particular
dialect.

For any linguist to claim that the word gáká 'grandmother'
exists in western dialects even though nobody uses it is to
go too far. It is unjustifiable to posit such a word and
then claim that it is lost by a given rule. If such claims
were to be accepted in our linguist theories that would
be denouncing innovation, borrowing and semantic shifts.
These are already established phenomena of linguistic
changes.

Our claim that the dialects do not have a common
lexical structure should not be taken as a refusal of a

common origin for all these dialects. A given word could
have been borrowed from a neighbouring language of one of
the dialects. It may have been a part of the proto lexical
structure that is retained in one dialect or group of
dialects but lost in other dialects. The change could also
occur through semantic shifts. These pehenomena have to
be taken into account when we discuss lexical structure.
For further lexical differences see appendix 3.

5.3 Morphological representations:

The morphological structure of these dialects reveals
quite interesting differences and similarities. There are
those morphemes that come from different proto-roots and
which are so far apart that nobody would want to relate
them. The most interesting case is that of the locative
marker. This morpheme is re in KiEmbu and KiMbeere,
{ine} or {ni} in other dialects. Among these three surface
forms {re} and {ine} are the most common. The third i.e.
{ni} occurs in Ngariama location of KiGichuga dialects.

The surface realization of the locative morphemes are
as follows:-

1.	KiEmbu-KiMbeere	The rest (except Ngariama location)	Gloss
	mogonda:re	mogondaine	'in the Shamba'.
	gete:re	geteine	'on the chair'.
	nduka:re	ndukaine	'at the shop'.

From these examples it is clear that the Embu - Mbeere
morpheme is not derived from the same source as the morpheme
for the other dialects. Here we need not debate whether
or not the two have a common origin. What we have to
investigate is the origin of {re}.

The source of {re}locative is *re verb to be.
This {re}verb to be is still found in these dialects
(cf. 2.2; 4.2.3). This morpheme was split (i.e. in Ki-
Embu and Ki-Mbeere) into two separate morphemes. One
of the two morphems stood for the verb to be while the
other became locative. As shown in 2.2.1 the verb to be
morpheme was later reduced to {e} in both Ki-Embu and
Ki-Mbeere but the locative was not. In Sourthern dialect
{re}verb to be was reduced in the same way as in these two
dialects. All other dialects have retained the {re}
verb to be.

All other morphemes discussed in this study can be
derived from the same proto-form. One such morphemes
is the plural suffix discussed in 2.2.1. We argued that
this morpheme was *-ni in the proto-language. In
western dialects this suffix has been reduced to -i but the
eastern dialects have kept it unchanged. Before discussing
the form of the present day plural suffix let us have
a look at other morphemes.

Other morphemes have also been reduced or their

domains restricted by the expansion of the domains of
other morphemes. Among the reduced morphemes we have
{re}class 5 marker. In KiMbeere this has been reduced
to{e}but other dialects have not changed it. In 2.2.1.
we gave examples of{re}future tense marker which has been
replaced by {ka} in eastern dialects.

In all these cases one can show that the different
surface forms are diachronically derived from one common
proto-form. Except this common origin the different
dialectal forms do not always have a common underlying form.
There may be some early generative grammarians (e.g. Chomsky
and Halle 1968) who still hold that the surface differences
are generated by phonological rules. This school of
linguistics argues that underlying forms are 'very resistant
to changes'. This was the group that M.Y. Chin and W.S.Y. Wang
addressed when they said,

> Current generative theory would have us believe
> that the phonological component of rules is in
> constant flux as time passes, but that the
> underlying forms remain relatively constant
> throughout the ages ... language 51 No. 2.

The two scholars continue to say,

> The chrolonology implied by this view is implausible
> to say the least. language 51 No. p266.

With the above quotation in mind one would find it
totally unacceptable to suggest that in KiMbeere we still
have{re} as class 5 marker which, on the surface, changes

to [e] in all environments. The same could be said of
the plural suffix *ni in western dialects. In cases where
an old morpheme has been reduced it is obvious that
restructuring has taken place. The only reason why
T.G.G. would insist on having an abstract form is because
it has no mechanism to detect restructuring.

N.G.G. rejects the positing of any form that never
surfaces because it does not exist. The positing of an
abstract form tends to mix the diachronic forms with
synchronic ones. A more concrete approach reveals the
synchronic reality and makes more accurate predictions.
In a concrete approach complexities in synchronic grammars
are formally revealed.

Before we conclude this section let us look at two
more morphemes that T.G.G. might claim have common underlying
forms in all the dialects. These two morphemes are the
perfect tense morpheme *etɛ and the morpheme for all
*ɔtɛ. The first of these two morphemes surfaces as
[e:tɕ] in Sourhtern dialect. In all other dialects it
surfaces as [etɛ]. In 4.2.5 we lengthened /e/ by a
phonological rule i.e. rule 75 (4.2.5).

As we stated in 4.2.5 there is no rule that lengthens
all /e/s before [t]. To posit /e/ underlyingly and
then change it to [e:] in one morpheme only is phonologically
unmotivated. This amounts to neutralization of /e/ in
one morpheme. Such a neutralization is in no way a

phonological rule. We must therefore reject rule 75 of
chapter 4 (4.2.5) i.e.

$$/e/ \rightarrow [+\text{length}] / - [t\epsilon]$$

This leaves no other alternative except to posit
/e:tℓ/ in S. dialect and /etℇ/ in other dialects.

Identical arguements are given for the *ɔ+ℇ 'all'
morpheme. In KiEmbu and KiMbeere this morpheme is ɔndℇ,
in KiGichugu ɔndℇ , KiMathira ɔ̄:Ƶℇ and other dialects
have ɔ:dℇ For KiEmbu KiMbeere and KiMathira we can have
one common underlying form /ɔndℇ /. For Ndia, Northern and
Southern dialects we have ɔ:dℇ but for Gichugu we posit
-ndℇ .

The reasons for positing ɔndℇ in the three dialects
mentioned above are obvious. In these dialects the nasal
is quite evident. In the other three dialects no nasal
is present. We cannot claim that lengthening is caused
by the loss of the nasal because long vowels are phonemic
in these dialects (cf. 3.2).

For KiGichugu the underlying form is not *ɔndℇ
but /-ndℇ /. This happens to be the case because [ɔ]
can te replaced by other vowels if the class changes e.g.
undℇ 'all' cl. 14. For other dialects this will be
wɔndℇ, wɔ:Ƶℇ or wɔ:dℇ 'all' (cl. 14). These surface
differences make it clear that Gichugu does not treat
as part of the root. Note that all other dialects

prefix this[ɔ]with the class marker.

As with the perfect tense marker we cannot posit
a single underlying form for all these dialects. What
we need is a single proto form which in proto - S. Mt.
Kenya must be * ɔndɛ. From this proto form we can generate
the present dialectal forms through a set of sound changes.
To exemplify these changes we have the following rules:-

2. KiGichugu

$$
\begin{bmatrix} C \\ +voice \\ +cont. \\ +cor. \end{bmatrix} > [-cont.] \Big/ \begin{bmatrix} C \\ +nasal \end{bmatrix} \underline{\quad}
$$

3. KiMathira

$$
V > [+nasal] \Big/ \; [+nasal]_C \; \underline{\quad} \; \begin{bmatrix} C \\ +voice \\ +cont \\ +cor. \end{bmatrix}
$$

4.

$$
\begin{bmatrix} C \\ +nasal \end{bmatrix} > \emptyset \Big/ \; [+nasal]_V \; \underline{\quad} \; \begin{bmatrix} C \\ +voice \\ +cont. \\ +cor. \end{bmatrix}
$$

Rules 2, 3 and 4 are enough to generate the surface
forms of Gichugu and Mathira. Embu and Mbeere need no
rule. For Ndia, Northern and Sourthern dialects we
have rule 5.

5.   C $>$ ∅ / — C

$$\begin{bmatrix} +\text{nasal} \end{bmatrix} \qquad \begin{bmatrix} +\text{voice} \\ +\text{cont.} \\ +\text{cor.} \end{bmatrix}$$
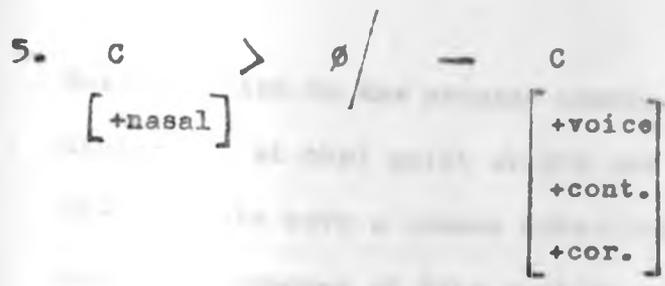
Note that in all the above four rules restructuring is claimed to have occurred. We do not, therefore, need any common underlying form for all the dialects. This is the only solution that will be allowed by a grammar that disallows abstract underlying forms.

In this case our theory posits one of the surface forms as the underlying forms and cannot deviate from the above claims. These claims are strong but their interpretations are testable within each dialect. The dialects that show no traces of nasals do not have them underlyingly. Those that have them can be easily generated by the above rules.

With all the above examples and discussions it is clear that not every morpheme can be generated from a common synchronic underlying form. Some may be derived from common proto-forms but the same is not true synchronically. In short we reject the claim that underlying forms remain constant throughout the ages.

5.4   Proto sounds and the synchronic sounds:

In 3.1 we saw that proto S. Mt. Kenya had fifteen consonants and two semivowels. This makes a total of seventeen nonvocalis sounds. We then discussed the changes

that have led to the present sound differences between the
dialects. At that point we did not ask ourselves whether
the dialects have a common underlying sound structure or
not. The purpose of this section is to answer that question.

If we argue that these dialects have different underlying
structures we shall have to address ourselves to a more
serious question i.e. at what point did restructuring
occur? For those, if there are any, who would argue that
these dialects have a common underlying sound structure
the question of restructuring does not arise.

By invoking the Strong Naturalness Condition
(cf. 4.1.4) N.G.G. has rejected the positing of a common
underlying sound structure. Remember that this condition
limits the underlying forms to one of the surface forms.
If a dialect has no surface forms with a given sound then
that sound is not a part of the sound structure of that
dialect. As stated in the preceeding sections of this
chapter this is a formal way or establishing restructuring
in sound change.

The above paragraph has shown that N.G.G. does not
accept a common underlying sound structure for all the
dialects. This is possible because this theory has a
definite method of showing where restructuring has taken
place. T.G.G. on the other hand recognises this process
of sound change but lacks enough constraints to
establish it. These differences between the two theories

have serious implications in our analyses of the synchronic
sound structures of S. Mt. Kenya.

N.G.G. would posit different underlying forms for
different groups of sounds. KiEmbu and KiMbeere would
have the same underlying sound structure but different
rules to generate surface forms (cf. chapter 4). Gichugu
and Ndia would have a common underlying structure different
from that of KiEmbu and that of western dialecgs. Western
dialects would have certain common underlying forms and
certain different forms. One such different forms would
be the nasal element in *Ɔndɛ which is still traceable
in KiMathira but not in other western dialects. There
would be different forms for /B/ in Southern dialect and
/f/ in Mathira and Northern dialects.

The above discussion does not imply that these dialects
will not have many cases of identical underlying forms.
Such a claim would be wrong because many sounds are
common to all the dialects. The paragraph simply says
that looking across the board, one would find more in
common in each group of dialects than in all dialects.

It is also important to state that the discussions
in/section have nothing to do with the diachronic process.
this
Diachronically all these dialects have the same origin
and each sound can be traced from a common proto source
(cf. chapter 3). The present system of sounds in the
dialects are accounted for by a set of sound restructurings.

The claims made in this section cannot be formally
established by T.G.G. as exemplified by Chomsky and Halle
(1968). T.G.G. (as in S.P.E.) is, mainly, interested in
formal elegance. This elegance obscures the complications
that arise from sound changes. Until this theory establishes
formal mechanism to deal with such things as restructuring
we are bound to conclude that it does not correctly
deal with sound changes.

5.5 The sequence of historical rules.

In 4.1.4 we rejected the extrinsic ordering of
phonological rules in our synchronic grammars. In this
section we shall discuss rule ordering in a diachronic
perspective. The constraint on extrinsic ordering of rules
is meant to disallow the positing of abstract forms in any
synchronic grammar. Consequently the constraint
disallows absolute neutralization (cf. rule 30 in 4.1.5.1).
These are necessary restrictions if our grammars are to
account for the intuitions of native speakers.

The restrictions placed on synchronic grammars
cannot be applied on diachronic sound changes. The two
have quite different operations. In diachronic sound
change analysis we are dealing with changes that have
occurred in different stages. The different stages may
have occurred at different periods. One change may be
separated from the next one by a number of years. Some
changes may overlap thus blocking or accelerating each

other (Wang, 1969). Where possible the changes can be
ordered in a historical sequence. This is different from
extrinsic rule ordering.

To begin our discussion let us look at the relationship
between *B and *P. In 3.1.2 we argued that *B loss must
have been historically ordered before P- lenition in all
the four dialects. It is also true that */B/ loss was
completed before P- lenition. Had this not been the
case we would find many remnants of *B surfacing in
nonnasal environments. It should be remembered that in our
discussions on these changes we did not have any examples
of *B surfacing in nonnasal environments of any
synchronic grammar. All the /B/s and /V/s that surface in
the four dialects of Gichugu and Ndia and Embu and Mbeere
are derived from *P. There is no overlapping between these
two sounds except in nasal environments.

These four dialects seem to favour a process that
weakens the bilabial consonants. This process began with
the loss of the bilabial fricative then there followed the
lenition of the bilabial voiceless stop. In Gichugu and
Ndia the lost fricative is replaced by /B/ from *P. In
KiEmbu and KiMbeere we have a shift from a bilabial
position to a labio-dental position i.e. *P >/V/. Both
of these processes hav happened through weakening.

After p-lenition *B loss was repeated in all these
four dialects. These new fricatives have began to drop

out. The only examples that we can give are ava and aBa
'here'. The first one occurs in KiEmbu and KiMbeere while
the second one occurs in KiGichugu and KiNdia. Both
of these words come from *papa. For further discussions
on this see 2.2.0 to 2.2.3.

Another example of an intrinsic diachronic rule
ordering is Dahl's law that we discussed in 4.1.4. In
that section we ordered the introduction of Dahl's law
before its reduced to /d/. We claimed that the only
reason why Dahl's law was violated by this change was
because it was already in the dialects. Had it come
after the change from *nt to /d/ the rule would have been
general in all the dialects. There would have been no
need for any dialect e.g. western dialects to violate this
rule.

These examples of ordered historical rules were
intended to show that certain sound changes cannot be
explained unless we first establish the historical sequence.
These examples, also, exemplify the difference between
diachronic and synchronic phonology. This is a
necessary distinction in our theory of sound change.

5.6 Rule interpretation; and Sound change.

Up to this point this chapter has been discussing the
relationship between underlying and surface forms. We
shall now turn to the rules and the implications any
rule or set of rules has for the whole theory of sound

change. Many sectiom of this study will have made certain
claims and implications that we shall discuss in this
section. Before we address ourselves to rule interpretation
we must understand what a linguistic theory is supposed to do.

A linguistic theory is supposed to enable us to
write explanatorily adequate grammars. A grammar attains
explanatory, adequacy if it accounts for the intuitions
of an idealized speaker of the language for which it is
written (cf. Chomsky 1965). Chomsky goes on to claim that
such an explanatorily adequate grammar should be the best
among all possible grammars written for the given data.
All these claims are made within T.G.G. as exemplified by
Chomsky and Halle (1968).

This section will evaluate these claims by interpreting
rules written to account for given phenomena. The first
example is that of Dahl's law discussed in 4.1.5.1. As we
noted in that section this rule has been violated by the
surfacing of [ɡ] and [d] in adjacent syllables. We traced
/d/ backwards and found that it came from *ts. We also
found out that no dialect in this region has shown any signs of
/θ/ whether as an allophone or as a phoneme. It was therefore
concluded that there was no justification for positing
/θ/ as underlying form of /d/ (cf. rules 29 and 30 in
4.1.5.1.). Rule 30 is repeated here for ease of reference:-

6. C

$$
\begin{bmatrix}
+\text{cor.} \\
+\text{cont.} \\
-\text{stop} \\
-\text{voice}
\end{bmatrix}
\longrightarrow
\begin{bmatrix} +\text{voice} \end{bmatrix}
$$
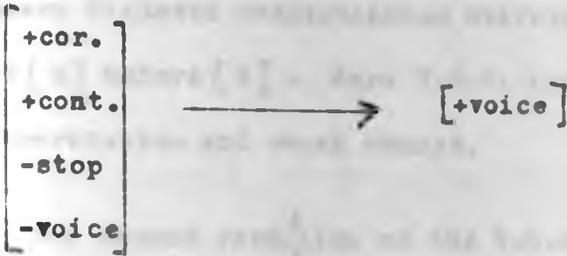
The reasons for positing /Θ/ as the underlying phoneme of [d] were based on the principle of minimum distance between surface and underlying forms. According to T.G.G. only one feature changes i.e. -voice to +voice . This rule is, in T.G.G., a highly valued rule because it has the minimum number of features and also because it enables us to write one exceptionless Dahl's law.

Rule 30 in 4.1.5.1 is possible because T.G.S. allows abstract representation. This abstraction can be best explained by the following quotation from Chen and Wang (1975). They say,

While the abstract approach tends to lead to surreptitious internal reconstruction, the concrete approach makes more accurate predictions about the future course of linguistic change.

There cannot be a better summary of T.G.G. than the above quotation.

Turning to our examples we can now see why T.G.G. would go wrong by positing /Θ/ as the underlying form of /d/ . This was wrong because the sound does not exist in these dialects. The absence of this sound meant that no dialect

would reestablish uniformity by losing the voicing rule.
Eastern dialects reestablished uniformity by replacing [g]
with [k] before [d]. Here T.G.G. has failed the test of rule
interpretation and sound change.

The second revelation of the T.G.G.'s failure is
language acquisition. Children from the western dialects
always begin by placing [k] before [d]. They only adjust
this after long periods of corrections by old speakers.
If we take this example of language acquisition we
shall find that children do not acquire abstract forms.
They acquire concrete sounds.

Another example that proves that abstract approach
wrong is that of Yawelmani. This Yawelmani example is
discussed by Vennemann (1973) and Kisseberth (1969). This
case involves the echo vowel harmony. Before we look at the
examples let us see what the old Yawelmani vowel harmony
was. Vennemann calls this rule Pre-Yawelmani Harmony
(PYH). The rule is as in 7.

$$
7. \quad V \rightarrow \begin{bmatrix} +\text{high} \\ B\ \text{back} \\ \gamma\ \text{round} \\ -\text{long} \end{bmatrix} \Big/ \underline{\quad} \begin{bmatrix} \alpha\text{high} \\ B\text{back} \\ \gamma\text{round} \end{bmatrix} \begin{matrix} \text{within echo} \\ \text{roots.} \end{matrix}
$$
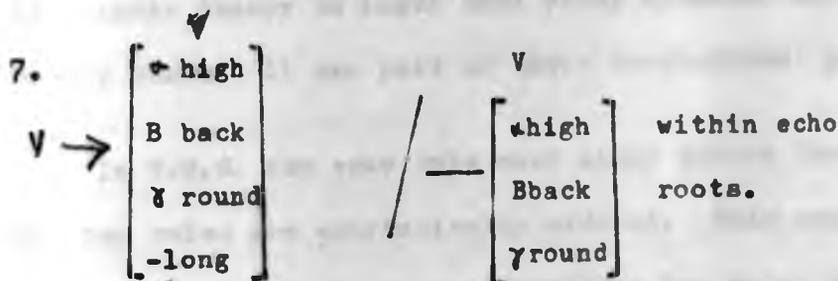
In course of history rule 7 has been violated by a
more recent change in the language. As a result of this
recent change Yawelmani has the following surface forms
(only the roots are glossed).

8.   ?ile:+hin   fanned.

     čuyo:+hun   urinated

     hoyo:+hin   named.

These examples do not agree with rule 7. The first
two examples show that [i] and [u] harmonise with [e:] and
[o:] respectively. On this Kuroda (1969)[7] suggests that
some O s should come from /u/. The same will apply to
[e]s i.e. coming from /i/. In T.G.G. framework the above
forms will be generated as shown in 9 .

9.   <u>Underlying</u>   ?vli:+hin čVyu:+hin   hVyo:+hin

      <u>Echo:</u>   ?ili:+hin čuyu:+hun   hoyo:+hin

      <u>Lowering</u>   ?ile:+hin čuyo:+hun   -

      <u>Surface</u>   ?ile:+hin čuyo:+hun   hoyo:+hin

Apart from the theoretical question of abstraction we
have a more practical question to ask. The question is
whether or not the present day Yawelmani speakers have the
Pre-Yawelmani rules. It seems unconvincing for any
linguistic theory to imply that young speakers have a rule
simply because it was part of their forefathers' grammar.

In T.G.G. the echo rule must apply before lowering.
The two rules are extrinsically ordered. This analysis is
rejected by N.G.G. because it violates two major principles.
These are, the no-ordering constraint and the Strong
Naturalness Condition. According to N.G.G. the present
day Yawelmani grammar is more complex than this. This

complication should be formally reflected within our grammar. Any grammar that retains the old simple grammar fails to account for the intuitions of a native speaker.

N.G.G. claims that the former high vowels have been restructured. They are no longer high but for purposes of echo vowel harmony they function as high vowels. This is the complication that we want reflected in the grammar. For this reason we reject rule 7. Rule 7 is replaced by rule 10 which shows special markers on low vowels that function as high ones. These markers will triger the vowel harmony rule. The rule is as follows:-

10.
$$V \rightarrow \begin{bmatrix} \alpha\,high \\ B back \\ \gamma round \\ -long \end{bmatrix} \Big/ -C \left\{ \begin{matrix} V \\ \begin{bmatrix} -high \end{bmatrix} \\ HH \\ \begin{bmatrix} +high \end{bmatrix} \\ B back \\ \gamma round \end{matrix} \right\} \text{ within echo roots.}$$
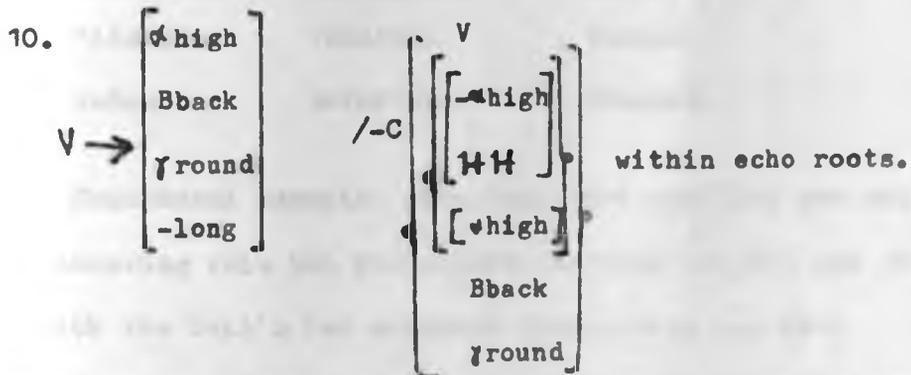
Rule 10 has two rules within it. The first rule applies when echo vowel harmony rule is trigered by low vowels that are marked HM. This is a triger that these nonhigh vowels will operate like high vowels in vowel harmony. The other section deals with the actual high vowels that operate like the PYH.

Rule 10 does not only show formal complexities but also reveals the complications in real language. These,

complexities can be lost by a reanalysis of the echo
harmony rule. In N.G.G. the special markers will be lost
so that low vowels harmonize with low vowels and high
vowels with high vowels. T.G.G. claims that the speakers
will lose the lowering rule thus going back to the Pre-
Yawelmani situation.

In order to test which of these two predictions is
right we shall appeal to comparative studies. A comparison
between Yawelmani and Chukchansi (a closely related
dialect) reveals the following:-

11. **Yawelmani**   **Chukchansi**   **Gloss**
    ?ile:hin   ?ele:hin   fanned
    Sudok'hun   sodok'hun   removed.

Chukchansi examples show that what was lost was not
the lowering rule but the special markers on /e:/ and /o:/.
As with the Dahl's law examples abstraction has been
proved wrong. These are enough examples to show that a
theory that posits abstract forms does not account for
the intuitions of native speakers. Note that these abstract
forms are posited so as to achieve formal simplicity that
can neither be tested nor proved right by either comparative
studies or language acquisition.

Examples given in this section show that both abstract
representation and absolute neutralization should be
rejected in our theory of sound change. By rejecting

these concepts we also question the linguistic theory
that advocates them. The theory lacks enough constraints
to disallow it from such wrong predictions of sound change.

Our theory of sound change should be limited in a
way that it will only make claims and predictions that
are accurate. These claims and predictions should be
testable in either comparative studies or language
acquisition. This is the only way to find out if our
theory of sound change is correct. To rely on formal
elegance and on untestable generalizations is to divorce
our grammars from the native speakers.

Footnotes:

1.   Kuroda, S-Y. (1969) Yawelmani, Phonology; Kuroda at
     Page 11 finds that there are two types
     of /Oʸ/ s. There are those that harmonize
     with [O] and those that harmonize with
     [u], to this he says: "This makes us
     suspect that [o] in [ʔo·t] may be generatively
     different from [o] in [goˑb] and may actually
     be derived from /u/, which, as has been
     noted, is missing on the phonetic
     level."
     It is not surprising that Kuroda should
     suggest that [o] should be generated
     from /u/ which never surfaces. He was
     writing in T.G.G. framework which allows
     context free neutralization but which
     N.G.G. has disallowed.

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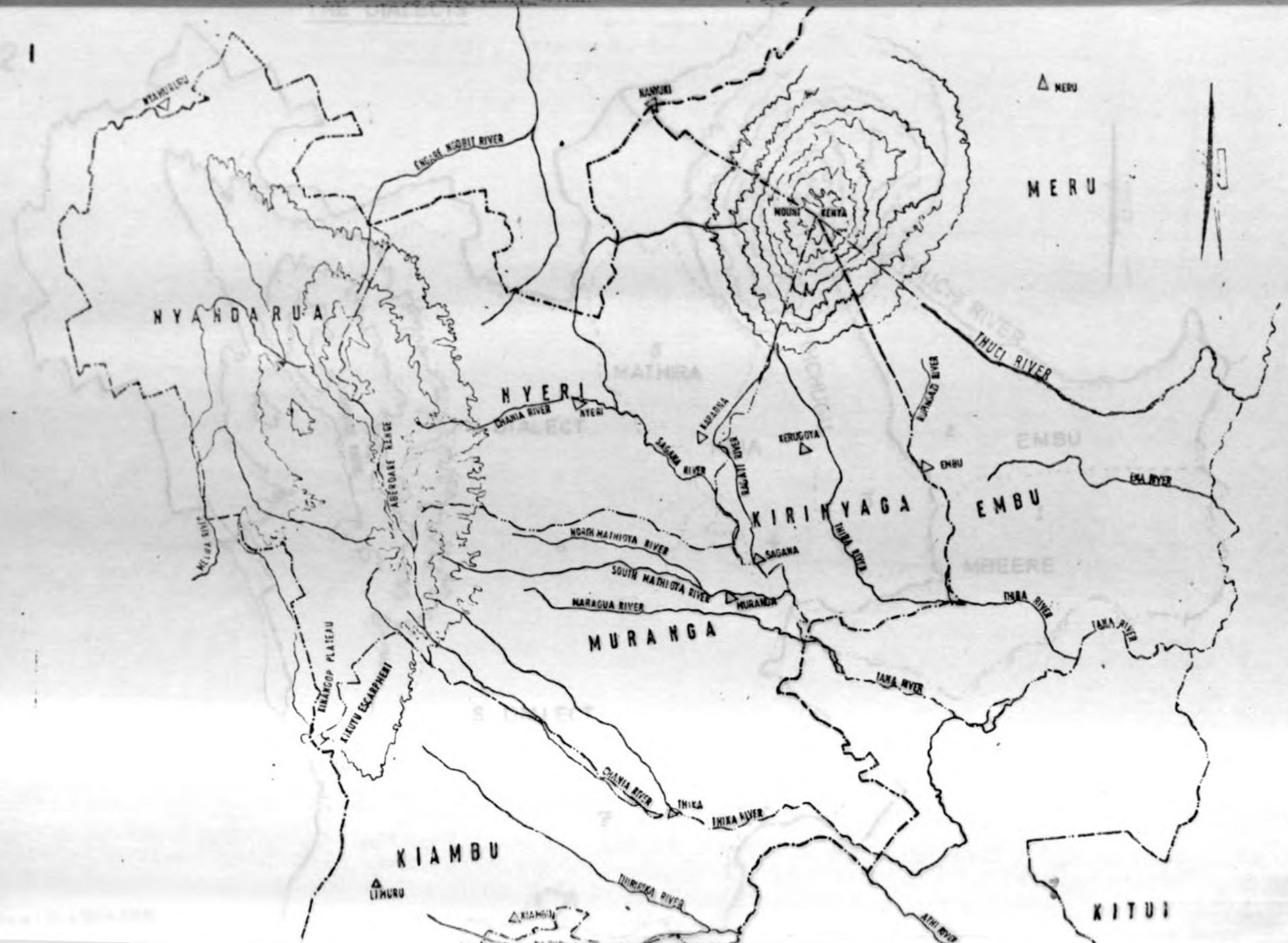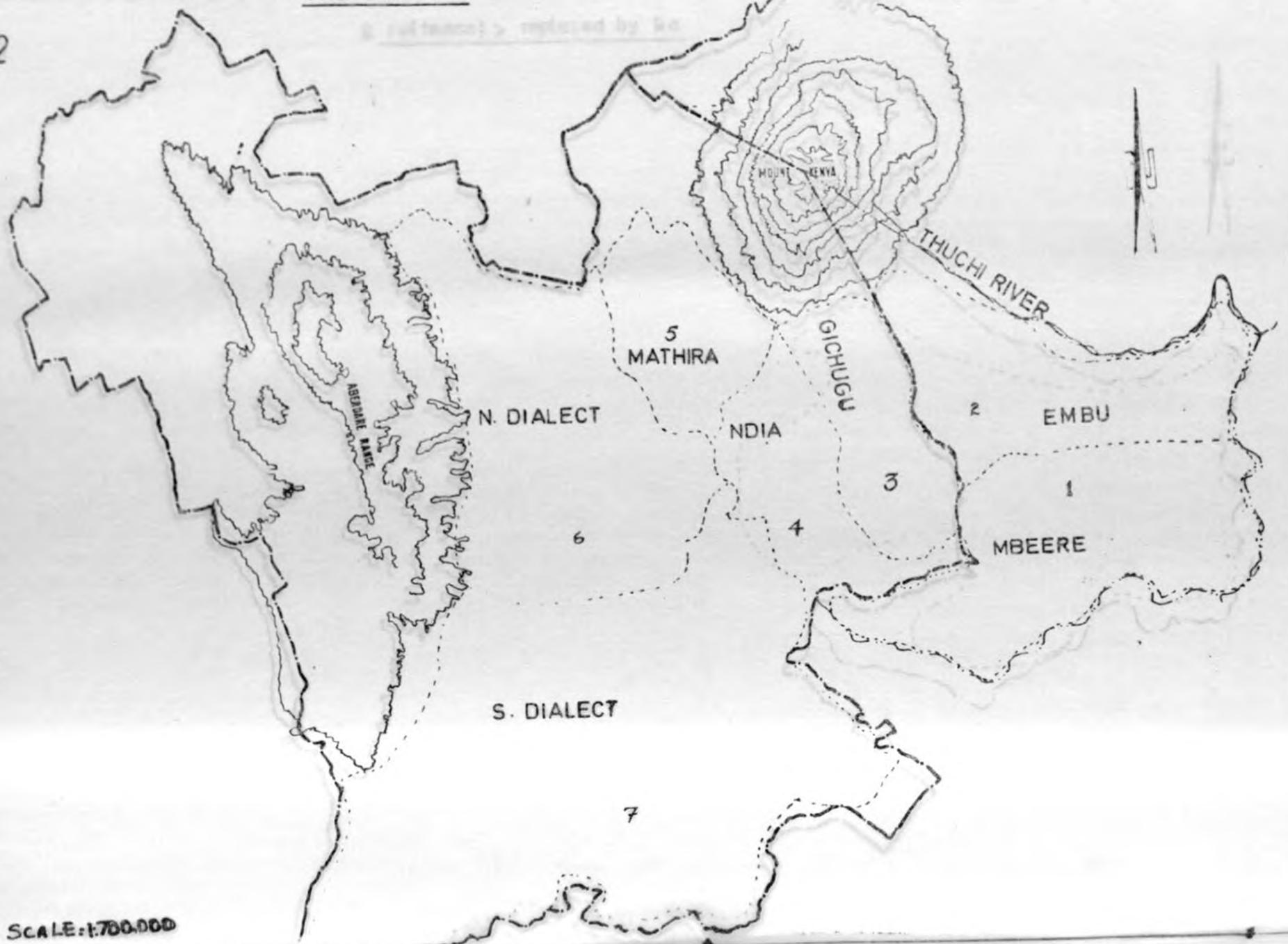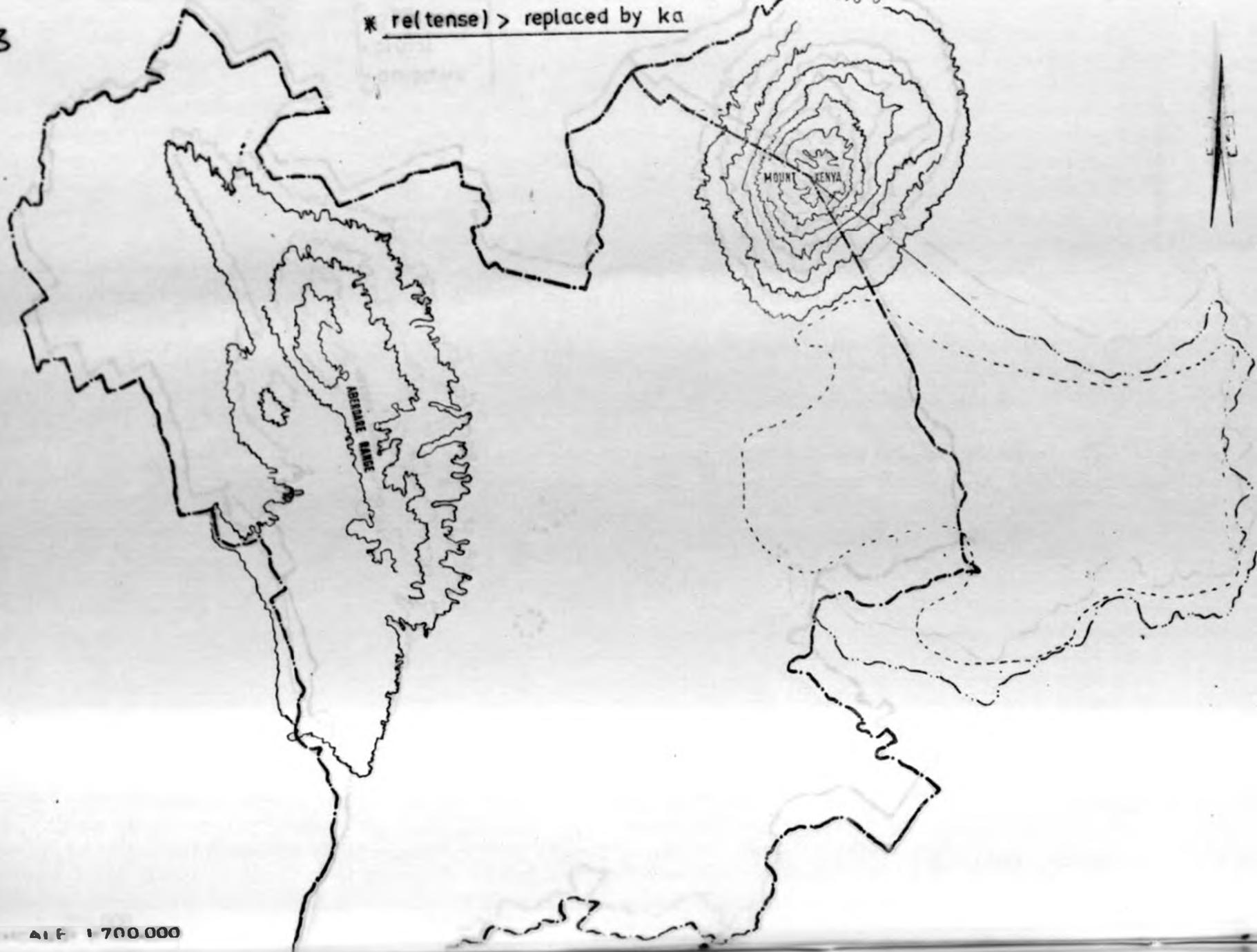
MAP 2

THE DIALECTS

ɡ voiceless] > replaced by ka

THUCHI RIVER

5
MATHIRA

N. DIALECT

NDIA

GICHUGU

2   EMBU

3

1

4

MBEERE

6

S. DIALECT

7

SCALE: 1:700,000

MAP 3

* re(tense) > replaced by ka

MOUNT KENYA

ABERDARE RANGE

SCALE 1:700,000

MAP 4

MOUNT KENYA

ABERDARE RANGE

- 254 -

1:500.000

MAP 5

ne > nde

ABERDARE RANGE

SCALE 1 : 700 000

MOUNT KENYA

KIAMBU

NYANDARUA

MURANGA

NYERI

KIRINYAGA

EMBU

MERU

KITUI

MAP 7

ABERDARE RANGE

MOUNT KENYA

+10W
[-10W]
[-back]
[-front]

MAP 8
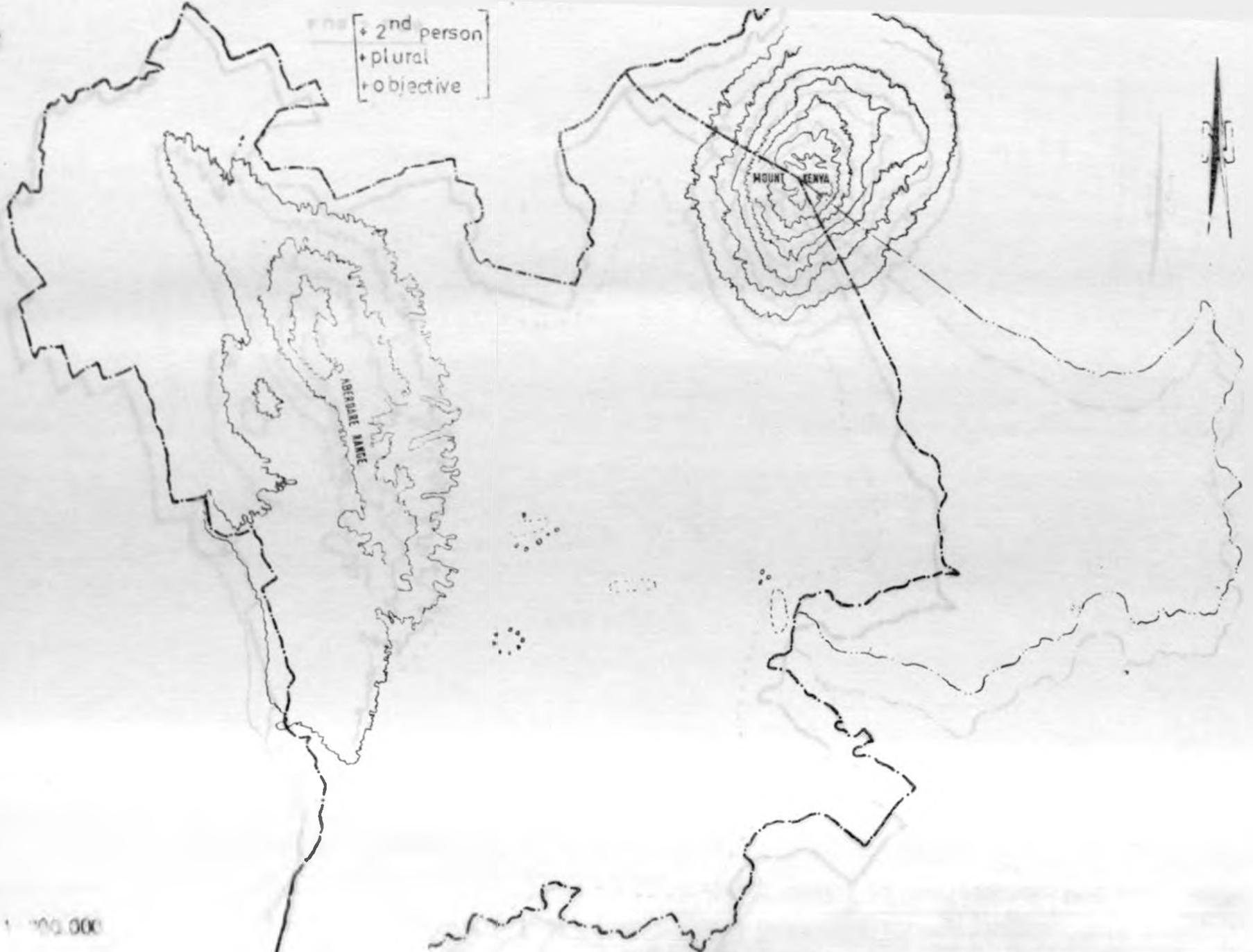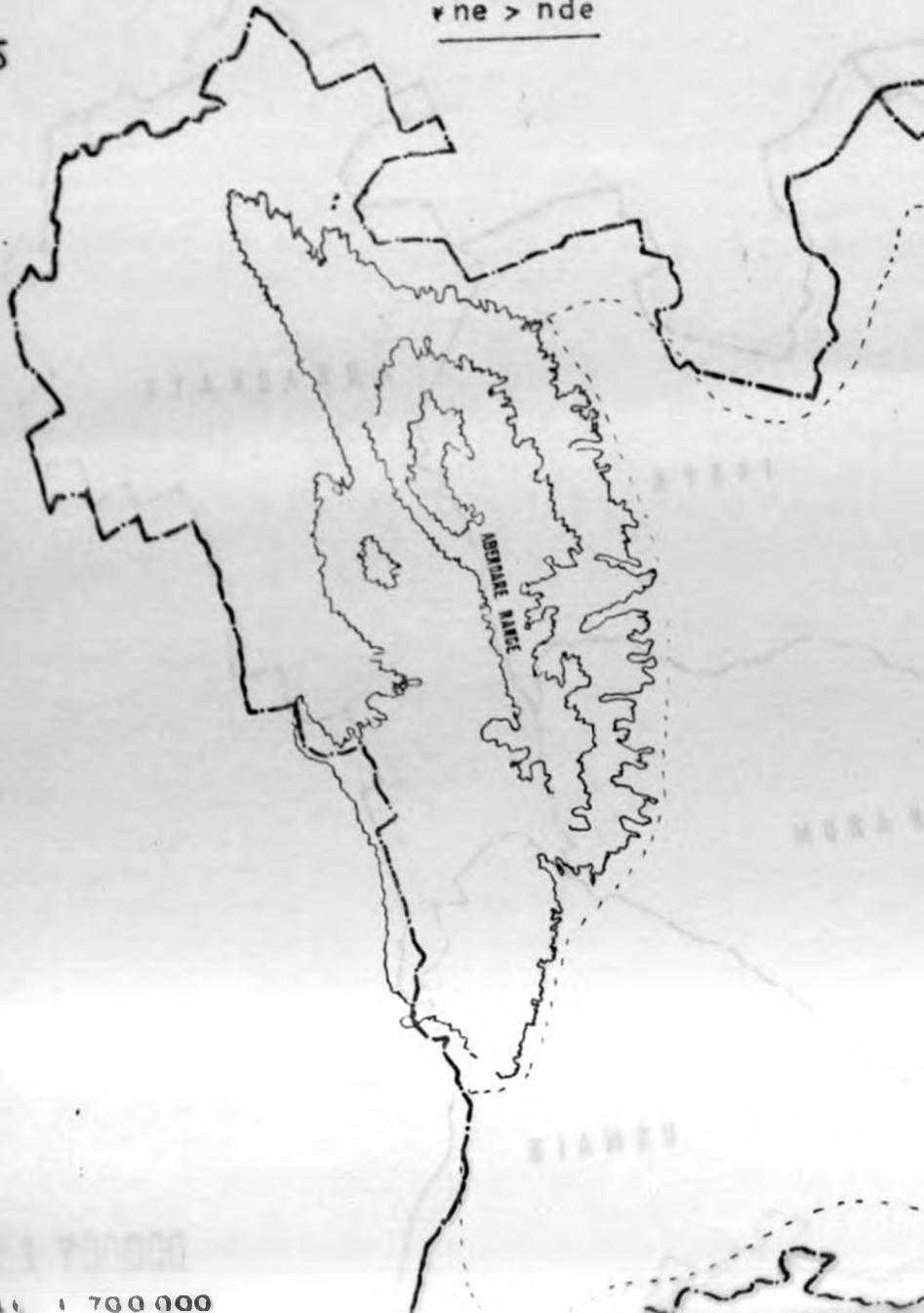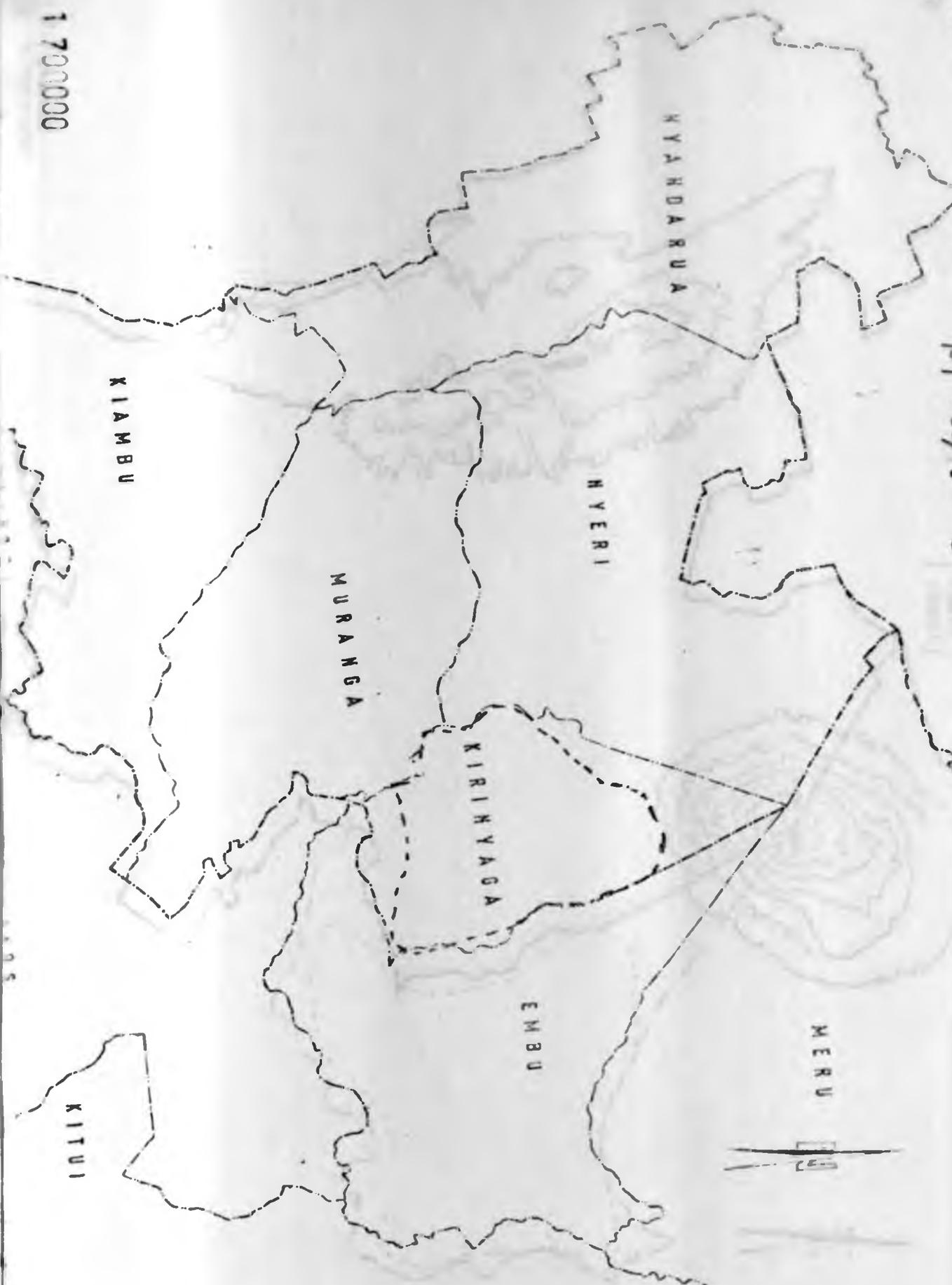
$v \rightarrow [+ \text{length}] /- \rightarrow [+ \epsilon]$
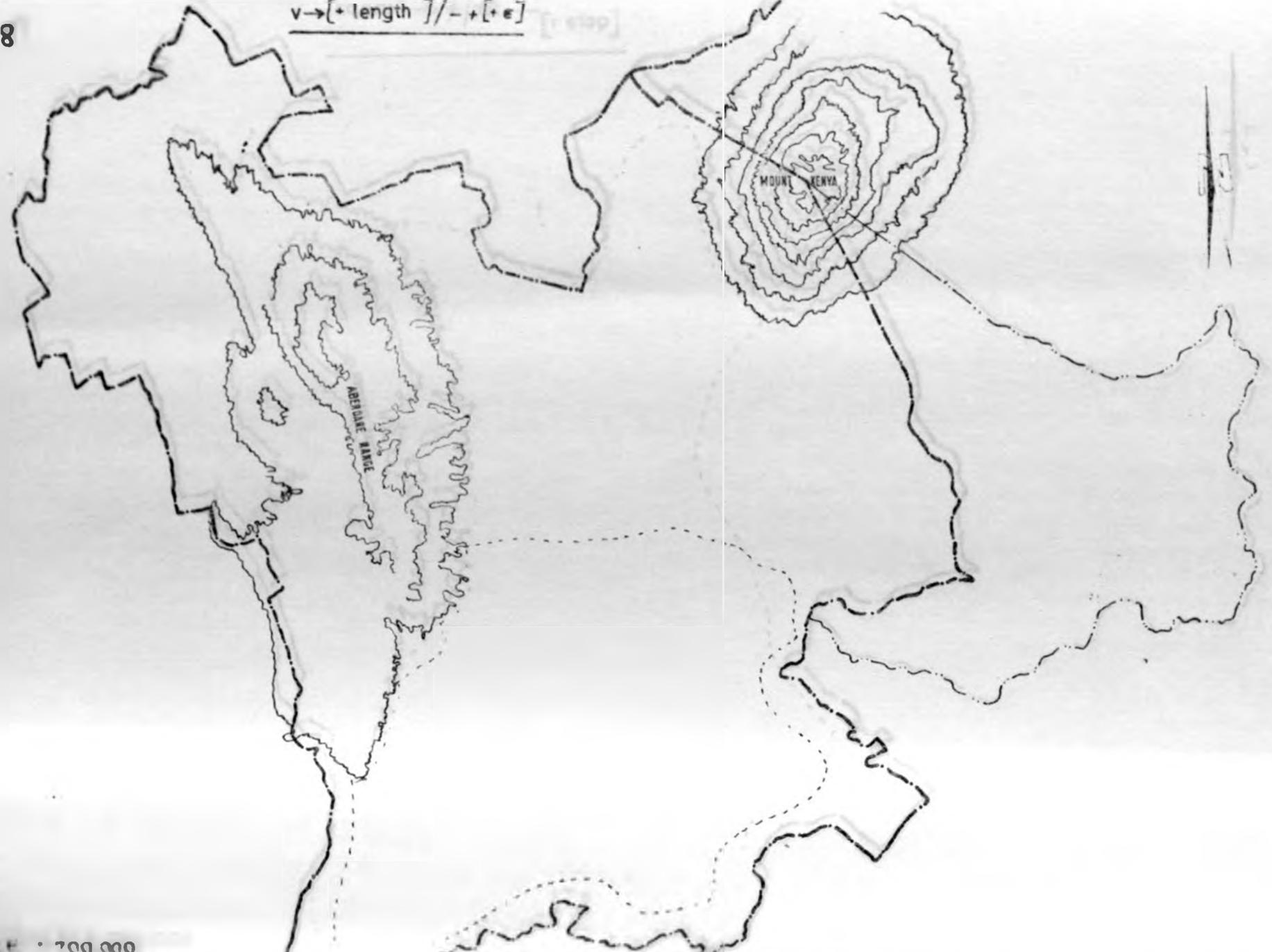
MOUNT KENYA

ABERDARE RANGE

MAP 9

nasal $\longrightarrow \phi \, / \, \# \, \longrightarrow$ [+ stop]

ABERDARE RANGE

MOUNT KENYA

MAP 10

GENERALIZATION OF DAHL'S LAW

ABERDARE RANGE

·00.000

MOUNT KENYA

MAP II

1 : 1 000 000

β > 1 v/φ
2 β
3 f

ABERDARE RANGE

MOUNT KENYA

MAP 12

SCALE 1: 700 000

ABERDARE RANGE

MOUNT KENYA

3

3

2

1
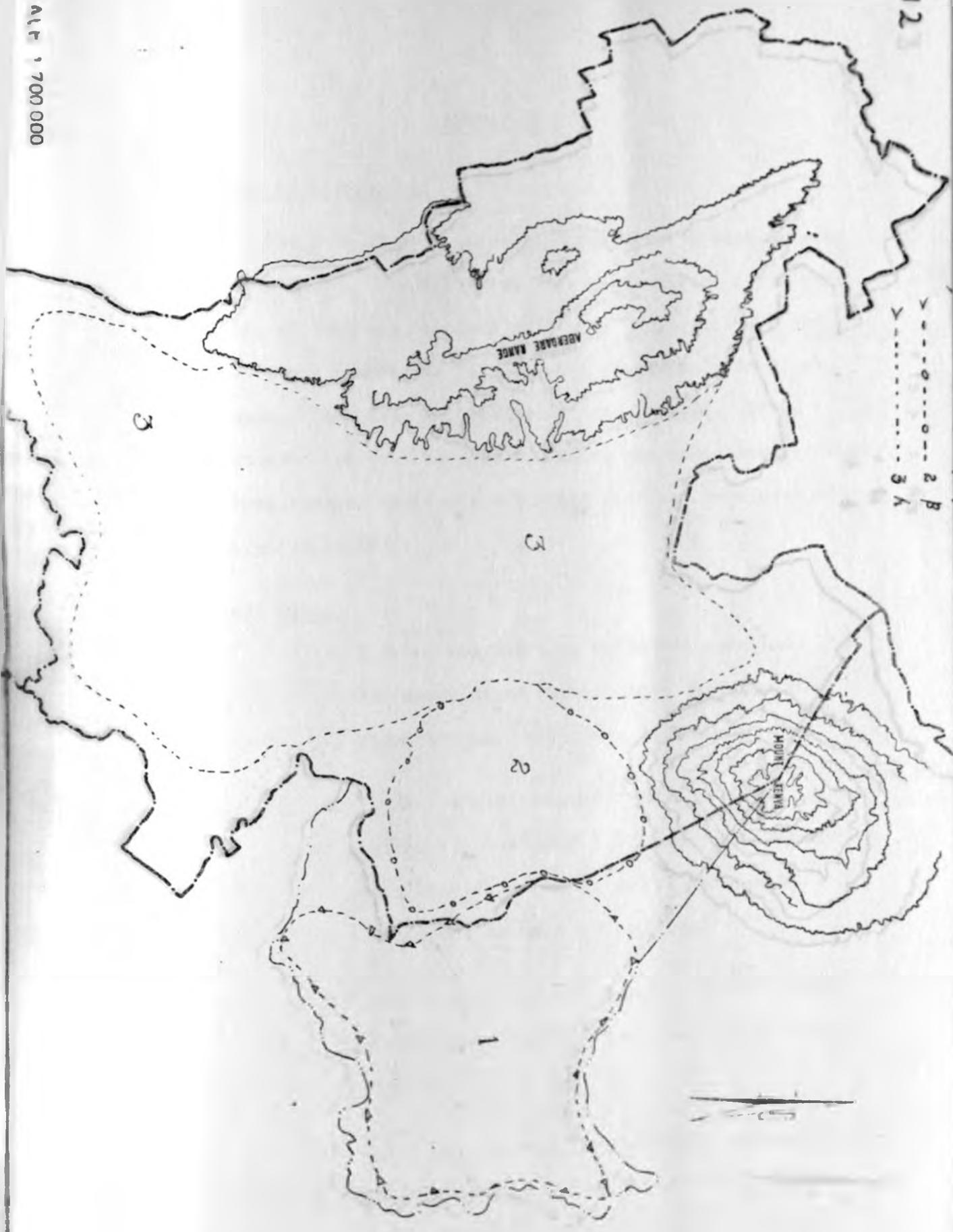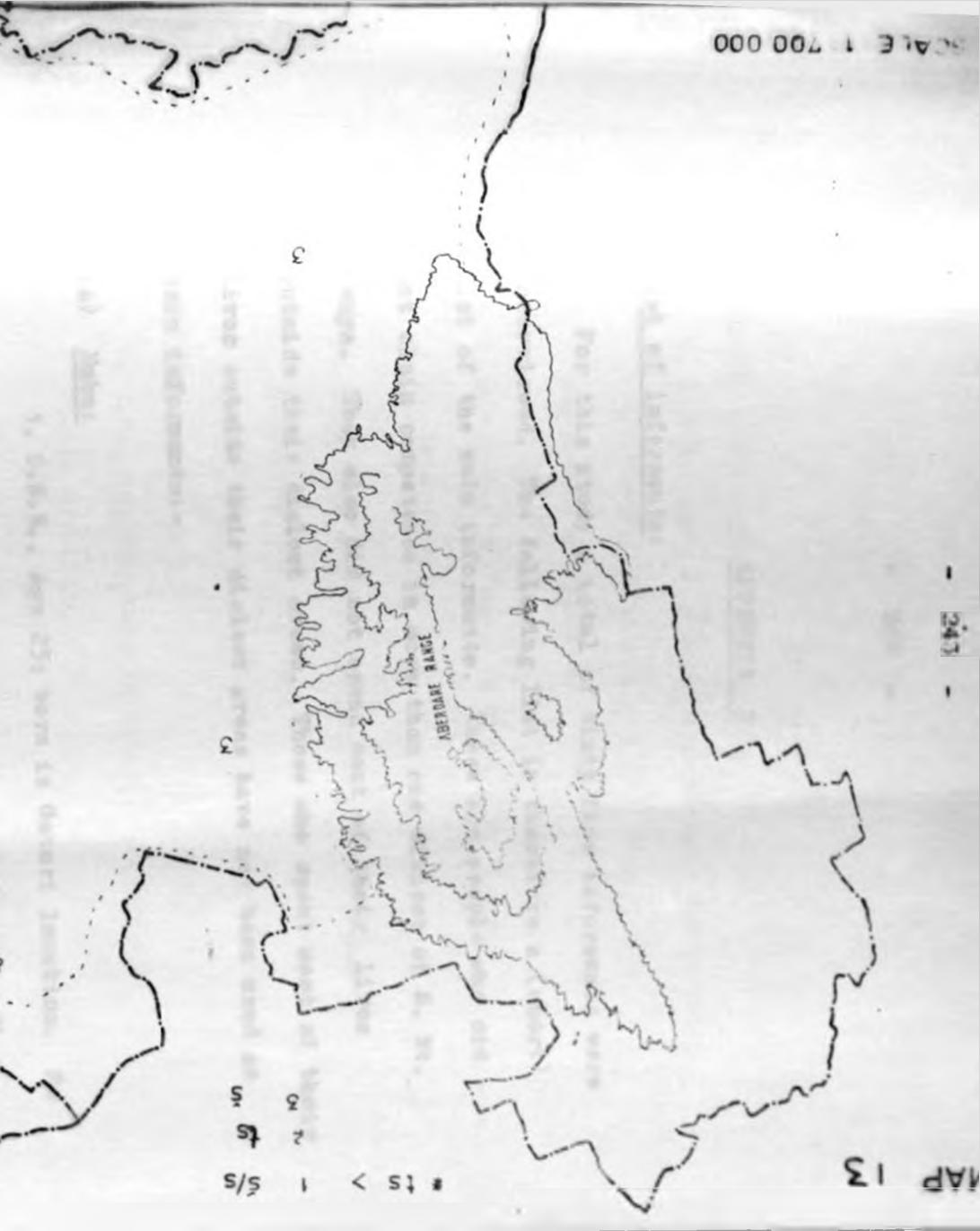
1
2
3

APPENDIX 2

<u>List of informants:</u>

For this study a total of sixty five informants were interviewed. The following list is therefore a (short) list of the main informants. These are people who did not claim competence in more than one dialect of S. Mt. Kenya. They also did not spend most of their lives outside their dialect areas. Those who spent most of their lives outside their dialect areas have not been used as main informants:-

(a) <u>Embu:</u>

    1. C.N.R., age 25; born in Gaturi location. He has never lived outside Embu for more than three months. He speaks Ki-Embu and English.

    2. A.W.K., age 23; born in Mbeti and grew up in Ngandori. She never left her home area for more than three months until she was 20. She speaks Ki-Embu and English.

    3. E.W., age 21; born in Kjeni. She has never lived outside Embu. She speaks Ki-Embu and English.

    4. J.N., age 18; born in Ngandori. He has lived all his life in Embu. He speaks Ki-Embu and some English.

(b) <u>Mbeere:</u>

    1. L.M.M., age 24; born in Gachoka. She never

       left Mbeere until she was 21. She speaks

       Ki-Mbeere and English.

    2. S.K., age 18; born in Mbeti. He speaks

       Ki-Mbeere only.

    3. I.N., age 19; born in Gachoko. She speaks

       Ki-Mbeere and English.

(c) <u>Gichugu:</u>

    1. J.M., age 10; born in Kabari. He speaks

       Ki-Gichugu only.

    2. N.M., age 80; born in Kabari. He speaks

       Ki-Gichugu only.

    3. M.W.N., age 22; born in Ngariama. She has lived

       all her life in Kirinyaga. She speaks

       Ki-Gichugu and English.

    4. I.M., age 35; born in Ngariama. She spent

       two years in Embu. She speaks Ki-Gichugu,

       English and Kiswahili.

(d) <u>Ndia:</u>

    1. S.K., age 75; born in Mwirua Location. He

       speaks Ki-Ndia only.

    2. S.N., age 55; born in Mwirua Location. She

grew up in the same place. She later moved Tebere. She speaks Ki-Ndia only.

3. J.N.K., age 23; born in Mutira Location. She lived in her area until she was 20. She speaks Ki-Ndia and English.

4. J.K., age 25; born in Kiine. He speaks Ki-Ndia English and Kiswahili.

(e) Mathira:

1. K.M., age 60; born near Karatina. Left his area during second world war. He speaks Ki-Mathira and Kiswahili.

2. M.M., age 20; born in Kirimukuyu. She has lived all her life in Mathira. She speaks Ki-Mathira and English.

3. J.W., age 18; born near Karatina. She speaks Ki-Mathira.

4. E.G., age 23; born in Ngandu Location. She has spent most of her life in Mathira. She speaks Ki-Mathira and English.

(f) N. dialect:

1. B.W., age 11; born in Thigingi. He speaks Kikuyu only.

2. L.W.K., age 24; born in Mahiga. She has lived in Mahiga for all this time. She speaks Kikuyu and English.

3. R.W., age 20; born in Kiru. She has spent all her life in Kiru. She speaks Kikuyu and English.

4. L.W.M., age 22; born in Tetu. She has spent all her life in Tetu. She speaks Kikuyu and English.

5. W.I., age 80; born in Gikondi. She speaks Kikuyu only.

(g) S. dialect:

1. J.N., age 28; born in Mugoiri. He has spent all this time in Mugoiri. He speaks Kikuyu and English.

2. M.K., age 13; born in Muruka. He speaks Kikuyu only.

3. W.K., age 26; born in Githunguri. She has spent all her time in Githunguri. She speaks Kikuyu and English.

4. H.N., age 23; born in Kinoo. She has lived all her life in Kinoo. She speaks Kikuyu, Kiswahili and English.

5. M.N., age 35; born in Ndeiya. He has spent
   all his life in Kiambu. He speaks Kikuyu,
   Kiswahili and English.

A SAMPLE OF THE WORD LIST.

	Embu	Mbeere	Gichugu	Ndia	Mathira	N. Dialect	S. dialect	Gloss
1.	ɓoɗo/ gaka	ɓoɗo	tsòtsó/ gaka	tsòtsó	ɓoɗo	ɓoɗo	ɓoɗo	grandmother
2.	maitò	ɲa:ɲa	ɲa:ɲa/maitò	maito	maitò	maitò	maitò	mother
3.	mbiriviri/ ndoro	kaɲiɲɛ	mbereɓereɓ/ mbotswá	mbiribiri/ mbotswá	mbirifiri	firifiri	biribiri	pepper
4.	ta:ra/dura	tɔ:rá	ta:ra/du:ra	ta:ra/dura	ɓagora/dura	ɓagora/du:ra	dura	select
5.	djé	djé	di	die	djé	djè	djè	go
6.	etɔjɔ̀	evɔruvá	kebɔruba	kebɔruba	kerɔruha	kerɔruha	kerɔruha	blister
7.	erɛ:ŋgɛ̀	eriŋgɛ̀	eriŋgɛ̀	moreŋgɛ̀	moreŋgɛ̀	ireŋgɛ̀	ireŋgɛ̀	pumpkin plant
8.	moɓoku/ mwe:	motsoku/ mwe:	mwe:	mò:ru/mwé	mò:ru	mò:ru	mò:ru	bad cl. 1.
9.	wɔɲdɛ̀	guóɲdɛ̀ undɛ́	wɔɲdɛ ɔɲcw	wɔ:dɛ/ wɔɲdɛ	wɛ̀ɛ̀ɛ̀	ɔɲcw	wɔ:dɛ	all cl. 14

	Embu	Mbeere	Gichugu
10.	kàɲuá	kùɲuá	kàɲuá
11.	ɔgàvwá/	ŋgàvwá	ɲjɛ́rɛ̀hwà/
	mbɛɛ̀ɪkɪ		ɲjɛ̀rɛ̀ɪkwɛ
12.	kèdú	kèrú	kèrú/
			kegɔkɔ̀rɛ
13.	ròvé	kèvé	ròbé
14.	mòrúkúdù/	mòkúrúkùdú/	mòrúkúdù/
	ɟɔí	mòɡɔ̀ɲɡɔ̀	mòɡɔ̀ɡɔ̀
15	ndìdínà	ndìdínà	ndìdínà/
			ndìgínà
16.	ìnáínà	tɛtɪ̀ma	tɛtɪ̀ma/
			ìnáínà
17.	dàmbérà	vòtíá	tùbérà/
			dàmbérà
18.	èɲgátá/	vìɲórìà	èɲgátá

Ndia	Mathira	N. Dialect	S.Dialect	Gloss
kànuá	kànuá	kànuá	kànuá	mouth
ɲɟɛ́gɛkɛ̀	ɲɟɛ́gɛkɛ̀	ɲɟɛ́gɛkɛ̀	ɲɟɛ́gɛkɛ̀	armpit
keg̀ɔkɔra	gezú/	keg̀ɔkɔra	keg̀ɔkɔra	elbow.
	keg̀ɔkɔra			
ròbe/kèbé	ròhé	ròhé	ròhé	palm (of hand)
mokurukudu/	mokuruguzù/	mokurugudu	mog̀ɔ̀ŋgɔ /	back (
mòg̀ɔ̀ŋgɔ̀	mòg̀ɔ̀ŋgɔ̀	mòg̀ɔ̀ŋgɔ̀	mokurúgúdù	
dídína/	zizinɔ	dídínɔ	dídína/	sweat
ndídína			ndígína	
inaìnà	inaìnà	inaìnà	inaìnà	shake (with cold)
dàmbera/	zàmbera/	tufera/	tuberà/	swim
tubia	tuférà	dàmberà	dàmberà	
iŋgàta	iŋgata	iŋgatá	iŋgatá	chase away.

	Embu	Mbeere	Gichugu	Ndia
19.	rèwá	rèwá	rèwa	rèwɔ
20.	idɛmbɛ́/ ŋɡóda	ɟɡóda	idɛmbɛ́	ndɖrama/ idɛmbì
21.	sɔ́ka/ edánwá	edenwà	edamwà	idanwà
22.	gùtáŋà	ɡètáŋà	ŋɡárè	ɟɡare
23.	kèvwae	nàvwaé	ɓwàe:nè	ɓwàèinè
24.	ɟɡai	ɟɡai	ɟɡai/moruŋgu	ɟɡaí/ moruŋgu
25.	giturɔ	kjàndɛ́	kjàndɛ̀	kjàndɛ̀
25.	nɟàrà	nɟàra/mokənɔ	nɟara	nɟara /ɕwɔkɔ
26.	òrwàrù	mòrimò	òrwàrù	òrwàrù
27.	tà:rja	tà:rerja	ta:rerja	ta:rerja
28.	etorora	eta:	etorora	ita
29.	mokimɔ	mòɕdé	mondé	mò:ɖé/mònde
30.	mbɔrɔ	mbɔrɔ	mòbukɔ	nòbukɔ

Mathira	N.dialect	S.dialect	Gloss
rèɔ̀	rèɔ̀	reɔ́	be drank.
ihɩmbɛ/	ndárámà	ndárámà	drums.
ndàràmà			
izɔ̀kà/	ídánwà	ídánwà	axe
ìdánwà			
ŋgàré/ ɓuí	ŋgàré	ŋgàre	leopard.
hwaɛìnè	hwaɛìnè	hwaɛìnè	evening.
ŋgài	ŋgài	ŋgài	God.
kjàndɛ́	kjàndɛ́	kjándɛ̀	shoulder.
ɡwɔ̀kɔ̀	ɡwɔ̀kɔ̀	ɡwɔ́kɔ̀	arm
ndwàri/	ndwàri/	ndwàri	sickness.
mòrimò	mòrimò	mòrimò	
taɲrèjà	tà:rèrjà	tà:rèrjà	explain
ìta/ìtoróra	ìta:	ìta:	pour
mòːzé	mòːdé	mòːdé	pestle.
mɔ̀ːndɔ̀	mahukɔ̀/mɔ̀ːndɔ̀ chn	mohukɲ//mɔ̀ːndɔ̀	bag (old man's)

	Embu	Mbeere	Gichugu	Ndia
31.	ŋgité/ kùró/ŋguí	ŋgìté/ ŋguí	kùró/ŋgité/ totó	ŋgìté/ŋguí
32.	mù:ndá	mù:ndá	mù:ndá	mù:ndá
33.	ròma/ ɔɡʲɛ	ròma	ròma	ròma
34.	eɡona	eɡonà	noɡo	noɡo
35.	modíta	mosúde	motsude	motsúde/ motíɔɛ̀
36.	mosúde	modìta	modìta	modìta
37.	eke:ndò	mbea	mbea	mbea
38.	erumbo	erumbwa	erumbwa	ndinɔ̀ɔ̀
39.	mbee	mboè	mboé	ɲɔ́ɔ́
40.	eoroka	eoroka	eoroka	omboka
41.	mokwadì	ɔɡà:ɡá	ŋgà:ŋgá	ŋgà:ŋgà
42.	keɡe/ ɲvòngo	rweɡè	mboɡɡo	mbo:ŋgo
43.	aɓa/umiá	umia	atsa	atsòɓjà

Mathira	N.dialect	S.dialect	Gloss
kùró/ŋguí	ŋguí	ŋguí	dog
mùːndá	dɛ̀ɛ̀a	dɛ̀ɛ̀a	pierce.
zɛ̀ɛ̀a			
ʋɛ̀ɲá/	rómà	ròmá	bite.
roma			
nóɣɔ̀	nòɣó	nògó	monkey.
mòtíɲɔ̀ɛ́	mòtíɲɔ̀ɛ́	mòtíɲɔɛ	tail.
mòʃùzè	mòʃùdè	mòʃùdè	pennis.
mbea	mbea	mbea	rat
cʰcʰénɔ̀hɔ̀	ndínɔ̀hɔ̀	ndínɔ̀hɔ̀	snail
ɲìʤá	ɲìʤá	ɲòʤá	feathers
ɛòrókà/	òmbókà	òmbókà	fly
ómbóká			
ŋgàːŋgà	ŋɛ̀àːŋgà	ŋgàːŋga	guinea fowl.
hɔ̀ŋgó	hòːŋgò	hòːŋgò	hawk
ʃɔ̀ːŋga/	aʃóhjà	aʃóhjá	carve.
aʃóhja			

	Embu	Mbeere	Gichugu	Ndia
44.	vàà (yvaŋɓáŋɛ(ɛra))	vàá	bóːná	bóːna
45.	ɛgvɛkɛ́	ɛgvɛkɛ́	ɛkɛ́ra	ɛkɛ́ra
46.	ŋʋòtá/ ɟàraɡù	kàɡòtì/ yòrá	ɟàràɡù	ɟàràɡù
47.	manʃe	maɲʃɛ́	nàɛ́	nàɛ́
48.	mòɛ́ɛtù	ɛ́dɛtù	teːrí	teːri
49.	nʃɛ́ka/ nɟɔ̀ŋɡá	nʃɛka	nikà/wikà	vɛki
50.	ɛgòró	ɛgòró	ɛgòró	ìra
51.	ndànu	ɛgɛkɔ́	ɛnaɡɛkɔ́	ɛnaɡɛkɔ́
52.	ʃʃɛ́ro/imbjá	ʃʃɛ́ró	ʃʃɛ́ro	ʃʃɛ́ro
53.	ɛ́ma/ɛvɛ́rà	ɛvɛra	ɛma	ɛ́ma
54.	ɔkɟá	ɔkɟá/vevjá	bɔ̀bɟá	bɔ̀bɟá
55.	iŋgèrà/ gukuma	gukuma	tɔ̀ːɲa	tɔ̀ːɲa
56.	oɟɡanjà	oɟɡanjà	oŋganjà	oŋgonjà
57.	tunɛva	erua	érùà	érùá

Mathira	N.dialect	S.dialect	Gloss
ho:na	ho:na	ho:na	be satisfied.
wehu:mbɛ	wehu:mbɛ	wehu:mbɛ	dress
ɲaragu	ɲaragu	ɲaragu/ho:tá	hunger
mae	mae	mae	water
te:ri	te:ri	te:ri	soil
ʃika/ ɔika	wiki	(w)iki	I (alone).
ira	ira	ira	yesterday.
egekɔ:	erenagekɔ:	enagekɔ	dirty (cl. 10).
ɲɟɛro	ɲɟɛro/umbja	ɲɟɛro/umbja	new
ɛma/chɛrɛra	chɛrɛra	ʃhɛrɛra	dodge.
hehja/ʃina	hehja:	hehja:	roast.
iŋgera/gukuma	iŋgera/gukuma	iŋgera	enter.
ɓɔkanererja/oŋganja/oŋganja	oŋganja/ɓɔkanererja	oŋganja/ɓɔkanererja	gather
erua	erua	erua	ripen
irua	irua	irua	intiation

	Embu	Mbeere	Gichugu	Ndia	Mathira	N.dialect	S.dialect	Gloss
59.	die/ɛɛ:ndá	die/wɛ:ndá	ɛi:	die	die	die	die	go
60.	vɪta	dunja	ɔɪta	bɪta	hɛta	hɛta:	hɪta:	bend
61.	mvɛvɔ	mbɛvɔ	mbɛbɔ	mbɛbɔ	hɛhɔ	hɛhɔ	hɛhɔ	cold.
62.	va	va:	bɛ	bɛ	hɛ/ha	hɛ/ha	hɛ:	give
63.	motumumu	motumumu	motumumu	ndumumu	motumumu	motumumu	motumumu	blind(cl. 1)
64.	magɛka	kevare	mogɛka	mogɛka	mogɛka	mogɛka	mogɛka	mat (for floor)
65.	kevaṭi	kjɔnɛi	kebatɔ	kebatɔ	kehatɔ	kehatɔ	kehatɔ	broom
66.	eta:ra	eta:re	etarara	itarara	itarara	itarara	itarara	python.
67.	ʃaki	ʃa:ki		ʃɛki	ʃɛki	ʃɛki	ʃɛki	grass.
68.	ndurakM	nduraku	ndurɔku	nduraku/ duraku	duraku	duraku	duraku	safari antɛ.
69.	lɛtɛ	lɛtɛ	lɛtɛ	lɛbɛ	rɛhɛ	rɛhɛ	rɛhɛ	bring.
70.	nde	nde	nde	nde/de	de	de	de	world.
71.	ndɔni	ndɔni	ndɔni	ndɔni/dɔni	dɔni	dɔni	dɔni	shame.
72.	twe/HwE	ndwe	twi:o	idue	idue	idue	idue	us.
73.	erwa	manoa	manoa	manɛa	manɛa	magekea	magekea	dug out lumps of grass
74.	evu	evu	nda	nda	nda	nda	nda	abdomen.
75.	ʃi:twa	gwatwa	ʃitwa	gwatwɔ	ʃitwɔ	ʃitwɔ	gwatwɔ	be raped.
76.	gwata	gwata	gwata	gwata	gwata	gwata	ʃi:ta	hold.
			gɔra	gɔra	gɔra	gɔra	gɔra	go for.

	Embu	Mbeere	Gichugu	Ndia
78.	eɛera	eɛera	gera	gera
79.	nda:re	nda:re	ndeine	deine
80.	eni/etéma	etéma	eni	ini
81	tuma/aka	tuma	aka/tuma	aka
82.	ɲwti	mbiti	mbiti	mbiti
83.	mora:ɡi	mora:gi	morɛ:gi	kamote
84.	aneka	aneka	aneka	aneka
85.	dida	dida	bida	bida
86.	vwa	vwa	bwa	bwa
87.	vara	vara	bara	bara
88.	mbiɡɔ	mbiɡɔ	mbiɡɔ	mbiɡɔ
89.	madada	madada	mabada	mabada
90.	vuana	vuanana	banana	banana
91.	rikɔ	ga:ro	rixkɔ	rikɔ
92.	ki:ndwa/	ki:ndwa	ki:ndwa/	ro:ndwa
	ro:ndwa		rondwa	
93.	ndoɲwa	doɲwa	ndoɲwa	ndoɲwa/
				doɲwa
94.	movaka	movaka	mobaka	mobaka
95.	vetoka	veboka	betoka	betoka

Mathira	N.dialect	S.dialect	Gloss
gèrá	gèrà	ìyérà	come for.
dĕiné	ĕein(i)e	dĕiné	inside.
íni	ìnì	ìni	liver
áká	áká	áká	build.
hĭtĭ	hĭtĭ	hìtí	hyena.
mòkwaɲ̀jò/ moreiɛi	mòkwaɲ̀jó	mòkwaɲ̀jò	walking stick.
aneka	aneka	áněká	spread out to dry.
hídà	hídà	hídà	hide
hwa	hwá	hwá	dry (river)
hàrá	hàrá	hàrá	grape
híɛ́ɔ	hìɛ̀ɔ	hìɛ́ɔ	kidney.
máhádà	máhádà	màhàdá	twins.
huɲ̀ánà	huànánà	huànánà	resembles
rìkɔ̀	rìkɔ̀	rì:kɔ̀	hearth.
ròndwɔ̀	ròndwɔ̀	ròndwɔ̀	be knocked down
dòɲwá	dòɲwà	dòɲwà	ankle.
móhákà	móhákà	mòhàkà	border
hètòká	hètòká	hètòká	pass

	Embu	Mbeere	Gichugu	Ndıa	Mathira	N.dialect	S.dialect	Gloss
96.	ediɣa	ediɣa	ediɣa	idiɣa	ihiɣa	ihiɣa	ihiɣa	stone
97.	mavori	mavori	mobori	mobori	mohori	mohori	mohori	lungs
98.	etu:nda	etu:nda	etu:nda	itu:nda	itu:nda	itu:nda	itu:nda	fruit.
99.	mɔnja	mɔnja	ɲɔnja	ɲɔnja	ɲɔnja	ɲɔnja	ɲɔnja	show me.
100.	erima	erima	erima	irima	irima	irima	irima	hole.
101.	maɣuta	maɣuta	maɣuta	maɣuta	maɣuta	maɣuta	maɣuta	oil/fat