

# KENYATTA UNIVERSITY

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF ENGLISH AND LINGUISTICS

## PHONOLOGICAL VARIATION AND CHANGE IN GĪKŪYŪ: A CASE STUDY OF MATHĪRA DIALECT IN KENYA

BY

MACHARIA, D. MUTHONI

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Macharia, D. Muthoni  
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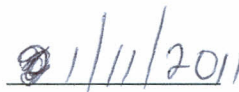
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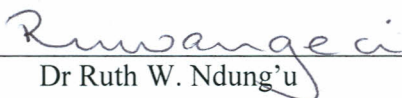


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Dr Ruth W. Ndung'u

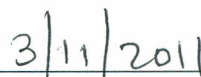


Date

Department of English and Linguistics,  
Kenya University



Dr Martin C. Njoroge



Date

Department of English and Linguistics,  
Kenya University

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**DEDICATION**

This work is dedicated to my loving husband Macharia Kibe, and my lovely children Miriam and Kibe, with love.

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**DEFINITION OF TERMS**

- Apparent – time construct:** This is where only one set of interview is done on language at one point in time and the set of speakers interviewed is selected to be representative of all age groups in the community.
- Real –time construct:** This is where the ideal historical linguistic survey would take place in real time.
- Diachronic studies:** Study of a language system over a period of time.
- Linguistic variable:** A linguistic feature which has more than one variant, each of which has a sociolinguistic significance.
- Native speakers:** People using a certain language as their first language.
- Phoneme:** The smallest unit of sound in a language which can distinguish two words.
- Phonological variation:** Differences in pronunciation within a language.
- Synchronic studies:** Study of a language system at one particular point in time.
- Phonological change:** Systematic differences in pronunciation in apparent time.

ABSTRACT

## LIST OF ABBREVIATIONS AND NOTATIONS

ANOVA - analysis of variance

/ / - Used for phonemic transcription

( ) - Used to enclose a linguistic variable

[ ] - Used to enclose the variants of a specific variable.

## ABSTRACT

Language variation and change is an interesting sociolinguistic area of investigation. This study sought to investigate phonological variation and change in the Mathĩra dialect of Gĩkũyũ language in Kenya. The objectives of this study are: to identify and describe the phonological variation of the variable ( $\delta$ ) in the Gĩkũyũ spoken by the Mathĩra dialect speakers, to correlate the phonological variation of the variable ( $\delta$ ) with the social variables of age, gender and education, and to describe the direction of the phonological change in progress in the variable ( $\delta$ ) in the Mathĩra dialect. To achieve this, a sample of 36 informants (18 males and 18 females) was selected from the target population. This was done through judgemental sampling. A questionnaire was used to elicit bio-data. The informants were tape-recorded as they responded to interview questions and picture reading. The data collected were transcribed on paper and then correlated with the social variables of age, gender and education. The observations were then used to explain phonological variation and change. The Variationist Theory and the Cognitive Phonology Theory were used in the data collection, analysis, interpretation and discussion of the findings of the study. The data were analysed quantitatively using ANOVA and Pearson's correlation. In the data analysis, it was found that the ( $\delta$ ) variable was realised as two variants; [ $\delta$ ] variant (the voiced dental fricative) and [ $\theta$ ] variant (the voiceless dental fricative). [ $\theta$ ] Variant had higher scores than [ $\delta$ ] Variant. The major finding that emerged from the study is that there is a phonological change in progress in the Gĩkũyũ spoken by the Mathĩra dialect speakers. Age and gender were seen to influence the variation of the dependent variable, thus, there is a significant correlation between the phonological variable under study with age and gender which implies and this change is being led by adolescents and women. The social factor of education was also included and it emerged that respondents with secondary and tertiary levels of education identified more with variant [ $\theta$ ] which is the more prevalent form in the Gĩkũyũ language, an indicator that education also plays a role in the phonological change. The findings have implications for various groups involved in language studies, for example, teachers, students and researchers of variationist sociolinguistics, anthropologists, and sociologists among others. The study recommends further research to be carried out on other levels of language change such as morphological, syntactic, lexical and semantic among others. Further research can also be done in other African languages.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND TO THE STUDY

Variation exists in language (Tagliamonte, 2006). No two speakers of the same language speak alike, nor does the same speaker use his/her language in the same way all the time. It is true that an individual, if asked to say the same thing repeatedly will say it quite differently (Nurse and Heine, 2000). It is also true that speakers of a particular language speak it differently (Wardhaugh, 2010). Speakers of English in Britain, for example, speak the language differently from speakers of English in Kenya.

Studies on variation before the 1960s, when they were initially done at all, focused on regional and specifically rural dialectology. Variationist sociolinguistics had its effective beginning in 1963, the year in which Labov presented the first sociolinguistic research report at the annual meeting of the Linguistic Society of America and also the year in which he published “*The Social Motivation of a Sound Change*” (Labov, 2010). These events mark the inception of linguistic studies imbued by the identification of linguistic variants correlated with social factors. The incorporation of style as an independent variable and the apparent time apprehension of linguistic changes in progress are all hallmarks of the sociolinguistic enterprise to this day.

Historical linguists, the primary students of language change, simply relied on the examination of data from different points in history to infer that linguistic changes had occurred and to describe the outcomes of those changes. This is a diachronic approach. The

historical data provided little insight into how the changes had taken place or into what might have motivated them, (except of course, in the case of language contact). In his work on Martha's Vineyard and in New York City in the 1960's, however, Labov (2006) developed a set of methodological innovations that allowed linguists to take the progress of linguistic changes as they were taking place and thus established the basis for a synchronic approach to the study of language change. The synchronic approach to the study of language change forms one of the cornerstones of research in language variation and change. This approach has had an enormous impact both on our knowledge of the mechanisms of change and our understanding of its motivations. In fact, Chambers believes that the study of change in progress might be the most striking single accomplishment of contemporary linguistics (Chambers, 2004).

The most obvious type of language variation is geographical variation. People from different geographical areas are likely to display differences in their speech (Aitchison, 2001). This is known as dialect variation. This variation occurs in various levels including vocabulary, grammar and phonology (Coulmas, 2005). In North American English, for example, there are grammatical differences among the dialects. These differences are largely morphological in nature. For instance, the 'past tense' forms and 'past participle forms of certain verbs have variants, as in such verbs as: *dive* – *dived/dove/div* and *wake* – *woke/waked*. Variation in vocabulary may also be observed among the dialects. For example, there are different names for a window covering that can be rolled up – *blinds/shades/window blinds/window shades/roller shades* (Wardhaugh 1977:222).

Language also varies according to function. There are both formal and informal styles of speaking and writing. Writing also tends to be more formal than speaking in the sense that more conscious manipulation of vocabulary and syntax takes place (Macmahon, 1994). Again, language also varies according to social factors such as age, sex, occupation, and social class (Chambers, 2003). However, most studies on language variation have dealt with phonological variation because as Labov (1982) points out, variation in the sound system is the most amenable to quantitative studies.

Sociolinguistic variation is concerned with the study of how language varies in relation to its use and users. It is based on the observation that language varies and that the variants that occur in everyday speech are not only linguistically significant but also socially significant (Chambers, 2003).

Linguistic variation is inextricably linked with language change (Holmes, 2008). Language variation is a prerequisite to language change. Linguists have realised that language change is observable provided that one knows where to look (Aitchison, 2001). Labov recognised clearly one important fact: the variation and fuzziness which so many linguists tried to ignore are quite often indicators that changes are in progress (Labov, 1972). He examined linguistic variables which he correlated with social factors such as age, sex, socio-economic group and ethnicity to establish change in progress. Labov's methods are now widely used for studying language change in progress and these methods show that language change presupposes language variation.

Language is always in a flux. The English language today is not the same as it was 100 years or 400 years ago. For example, *ain't* used to be the normal way of negating in English, but

now it is stigmatised (Tagliamonte, 2006). This language change could be at the lexical, syntactic, semantic, morphological, or phonological levels. For example, lexical changes take place quickly as new words are borrowed from other languages or as words go through different word formation processes such as compounding, coinage, backformation, blending among others. For example, thousands of words such as: *afternoon*, *bigmouth*, *icecap*, *moreover*, *nursemaid*, and *x-ray*, among others, have entered the English language through the compounding process (Fromkin and Rodman, 2002).

Linguistic change can be said to have taken place when a new linguistic form, used by some sub-group within a speech community is adopted by other members of that community and accepted as the norm (Coates, 1992). This change can be as a result of social or political pressures such as invasion, colonisation and immigration. For example, English was influenced by the Scandinavian (Viking) raiders whose invasion and conquest led to both positive and negative influence; they made additions to the already existing English lexicon, and speakers of Norse languages helped erode the inflexional endings of Old English (Moore, 2002). English has also acquired many words from Spanish. Some of these came directly into English especially in the age of sea travel and conquest. For example, words such as *cigar*, *guerrilla*, and *mosquito* among others, originate from Spanish (Moore, 2002). Language also changes whenever speakers come into contact with each other. As such, when two language groups come into contact with each other, there is a likelihood of one group being influenced by the other or even both groups influencing each other, which can ultimately lead to language change.

The current study concentrated on phonological change. One example of a phonological change in English is the Great Vowel Shift which took place in the South of England between

1450 and 1750. The speakers of English modified their vowel pronunciations dramatically. This shift represents the biggest difference between the pronunciations of the so called Middle and Modern English (Fromkin and Rodman, 2002).

Languages exhibit changes in their phonology as the phonemes and phonological rules of a language are subject to change. The inventory of sounds in a language can change in various ways. Firstly, it can change by the loss of phonemes. For example, speakers of most Modern English dialects know that /X/, the velar fricative, is not part of their phonemic inventory. In the history of English, this sound was lost and this loss took place between the time of Chaucer and Shakespeare (Nathan, 2008).

Secondly, the inventory can also change by the addition of new phonemes. For example, Old English did not have the phoneme /ʒ/ of *leisure* /leʒə/. Through the process of palatalisation, certain occurrences of /z/ were pronounced as /ʒ/. Eventually, the /ʒ/ sound became a phoneme in its own right, reinforced by the fact that it is a common phoneme in French, which exerted a major influence on English after the Norman conquest (Moore, 2002)

Thirdly, a phonetically predictable allophone may become a distinctive phoneme. For example, in Old English, [f] was in complementary distribution with [v], and [s] was in complementary distribution with [z]. The voiced fricatives [v] and [z] occurred intervocalically as variants of two basically voiceless phonemes, /f/ and /s/ respectively. The weakening of the final unstressed syllables and their eventual disappearance placed [f] in contrast with [v], and [s] in contrast with [z] in word final position, that is, before a pause. At the same time an influx of French vocabulary items in which both initial [v] and intervocalic

[f] were prominent both hastened and consolidated the process of phonemic split. The eventual result was four phonemes in Modern English (/f/, /v/, /s/, and /z/) instead of the two in Old English (/f/ and /s/) (Wardhaugh, 2010).

One way of characterising certain variations is to say that speakers of a particular language sometimes speak different dialects of that language (Chambers, 1998) and even within a dialect, speakers vary in their speech according to their age, gender, social and educational background (Chambers, 2003). Before a language can change, speakers must adopt new words, sentence structures and sounds, spread them through the community and transmit them to the next generation.

A phonological change like any other language change can be studied 'diachronically' or 'synchronically', what Tagliamonte (2006) and Meyerhoff, (2006) refer to as 'real' and 'apparent time', respectively. Until the mid 1960's, most linguists concurred with Hockett's (1950) assertion that the actual process of language change is unobservable - it can only be detected through its results.

Many of the documented studies on variation and change are based on the English language (Labov, 1972). However, several studies on African languages, including Kenyan languages, have carried out. Nurse (1985), for example, looks at major changes in Kiswahili and observes that Swahili has been affected greatly by borrowing. The author posits that in the past, Swahili borrowed widely from neighbouring African languages as well as from Arabic, Persian and various Indian languages. Like it happens to many other languages, the continued borrowing ultimately led to adoption of foreign sounds such

as /ð/ and /ɣ/ in 'mawaidha' (advice) and 'ghali' (expensive) respectively in today's Kiswahili .

Several studies have also been carried out in Gĩkũyũ language. Karega (1983), for example, looks at sound change and the classification of the dialects of Southern Mount Kenya. Gĩkũyũ is a language in the Central Bantu branch of the Niger-Congo family spoken primarily by the *Agĩkũyũ* people of Kenya (Dwyer, 1997). Gĩkũyũ is mainly spoken in the area between Nyeri and Nairobi. It is one of the five languages of the Thagichu sub-group of the Bantu languages which stretches from Kenya to Tanzania. In the Gĩkũyũ phonological system, there are 7 vowels and 18 consonants (cf Appendix II). It has two level tones (high and low), a low – high rising tone, and a downstep. Gĩkũyũ has five dialects namely; Southern Gĩkũyũ (Kĩambu and Southern Murang'a); Northern Gĩkũyũ (Northern Murang'a); Mathĩra (Nyeri); Gĩchũgũ (Northern Kĩrĩnyaga); and Ndia (Southern Kĩrĩnyaga) (Dwyer, 1997).

This study focused on the Mathĩra dialect. Mathĩra dialect belongs to a group of dialects that Karega (1983) calls Western dialects. They include: Mathĩra, Northern dialect and Southern dialect. They are grouped together by a number of features which include; the surface realisations of [b], [d], and [g], a feature that is not found in any other dialect or group of dialects in the Southern Mount Kenya. The researcher describes phonological variability in only one phonological variable (ð) used by speakers of the Mathĩra dialect of Gĩkũyũ language. The rationale of the choice of this variable is that it is a salient feature in the said dialect. Karega (1983) observes that Mathĩra is alone in having /ð/ where the other dialects in the group have /θ/. This study, therefore, sought to look at phonological variation and change in the Mathĩra dialect of Gĩkũyũ language in Kenya.

## 1.2 STATEMENT OF THE PROBLEM

A language system is always in the process of change. These changes have been documented in a number of linguistic studies. The changes may involve the syntactic, lexical, semantic, morphological or phonological aspects. Research has been carried out on these levels. However, much of the research on phonological variation and change has not focused on African languages. From the literature reviewed, it was apparent that most of the research has been done on languages in the western world. Based on this, there is need to conduct further research on phonological variation and change in African languages and specifically in Kenyan languages. In Gĩkũyũ, for example, there is likelihood of some phonological changes in progress. To fill this gap in knowledge and by focusing on the phonological variable (ð), this study attempts to describe phonological variation and change in the Mathĩra dialect of the Gĩkũyũ language.

## 1.3 RESEARCH OBJECTIVES

- 1) To identify and describe the phonological variation of the variable (ð) in the Gikuyu spoken by the Mathĩra dialect speakers.
- 2) To correlate the phonological variants of the variable (ð) with social variables of age, gender and education.
- 3) To describe the direction of the phonological change in progress in the variable (ð) in the Mathĩra dialect.

## 1.4 RESEARCH QUESTIONS

- 1) What are the phonological variants of the variable (ð) in the Gikuyu spoken by Mathĩra dialect speakers?

- 2) What is the correlation between the phonological variants of the variable (ð) with social variables of age, gender and education?
- 3) What is the direction of the phonological change in progress in the variable (ð) in the Mathĩra dialect?

### 1.5 RESEARCH ASSUMPTIONS

- 1) There is phonological variation in the articulation of the variable (ð) in the Gikuyu spoken by the Mathĩra dialect speakers
- 2) There is a correlation between the phonological variants of the variable (ð) with the social variables of age, gender and education.
- 3) There is a direction of phonological change in progress in the variable (ð) in the Mathĩra dialect.

### 1.6 RATIONALE

Studies on language variation and change have been carried out by several people especially in the western world (Holmes, 2008; Chambers, 2003; Tagliamonte, 2008). For example, Labov's (1966) study in the speech of New York City was directed toward understanding sound change there. Labov's work on the variable [r] led him to conclude that lower middle class speakers behave 'hypercorrectly', that is, they tend to 'over-produce' [r] sound when they attempt to emulate what they perceive to be the kind of pronunciation favoured by those they aspire to equal.

Studies on language variation and change in African languages, including Kenyan languages, have also been carried out. Maundu (1980), for example, looks at the main

consonantal sound changes in Kikamba. He notes that the Kitui North dialect is the most conservative as it retained some proto-sounds such as /ɣ/ and /tʃ/.

Gĩkũyũ is a widely studied language and very many aspects of the language have been described. Mwihaki (1998) for example, looks at loan words in Gĩkũyũ language. She describes the phonological shapes of loan words using the metrical theory and the tier system. On Gĩkũyũ phonology, much has also been done. Kamau (1996), for example, looks at the major phonological processes of Kindia and Gichugu dialects of Gĩkũyũ language. He uses the Natural Generative Theory to discuss the phonological correspondences between the two dialects. Wanyoike (2002) looks at morphophonological processes of Gĩkũyũ speakers. Waithera (2006) looks at the phonological variation in the Gĩkũyũ spoken by Kamba traders in Thika District. However, from the literature consulted, no study has had a great impact on the history of the Gĩkũyũ language as the current one, that is, documenting a language change that changes the phonemic inventory of the Gĩkũyũ dialects, hence the need to fill this gap.

The findings of the study are hoped to provide vital information on language variation and change thus adding to the pool of knowledge on linguistics, especially in the Kenyan context. The findings will be a helpful source of information to students, teachers and researchers of language variation and change, particularly on phonological change in progress and the mechanisms of sound change especially in Kenyan languages. Again, the findings will greatly contribute to the theories of language change. Moreover, the findings will be helpful to students of African linguistics, anthropology and sociology who plan to conduct research on Kenyan languages. The data collected and the research findings can also be useful for comparative researches in phonological variation and change.

## 1.7 SCOPE AND LIMITATIONS

This study falls within the broad areas of dialectology and language variation and change. Language variation and change may be morphological, syntactic, lexical, and semantic among others. Cheshire (1991) notes that variation in a language is an extremely complex phenomenon and it would be quite unrealistic to attempt to analyse all its aspects. In this connection, the present study limits itself to analysis of phonological variation. The research will be based on spoken language data collected from speakers of the Mathīra dialect of Gīkūyū language. There may be many phonological variables, both consonant and vowel sounds, that exhibit variation in the Mathīra dialect. For example, /s/: /s/,/ts/,/s/. However, this study limits itself to one linguistic variable, (ð) since it is a salient feature in the Mathīra dialect. The left are left out in order to narrow the scope.

Different speakers may exhibit different patterns of phonological variability because the speech of speakers varies according to social factors such as age, gender, occupation, ethnicity, social class and education level (Chambers, 2003). This study limits itself to three social variables namely: age, gender and education level. Age is considered because in studying linguistic change synchronically, the researcher considers the use of language across generation cohorts (Wardhaugh, 2010; Chambers, 2003). Gender is considered since the idea that language change is not driven evenly by both sexes has been around since antiquity (Coulmas, 2005). Again, Labov notes, 'in linguistic change, one expects differences between men and women' (Labov, 1981: 181) thus justifying its inclusion. The education variable is also considered since as Jahangiri and Hudson (1982) note, the level of education a speaker has attained is one of the main influences on his or her speech. Social class is not considered since as Muthwii, (1994) observes, sociolinguists and sociologists find social stratification in

Kenya diffusive and difficult to establish. Other social variables have also been left out since, if included, the scope would have been too wide.

## 1.8 SUMMARY

This chapter has looked at the background to the study, statement of the problem, research objectives, questions and assumptions. It has also focused on the rationale, and finally the scope and limitations. The next chapter reviews the literature as well as theoretical framework.

## CHAPTER TWO

### LITERATURE REVIEW AND THEORETICAL FRAMEWORK

#### 2.1 INTRODUCTION

This chapter presents a review of related literature. First, it begins with general information on sociolinguistic variation, followed by the traditional view of language change. Studies on phonological change in progress are reviewed next. Phonological change and age, phonological change and gender, as well as phonological change and education follow in that order. Methodology in variationist studies follows and the theoretical framework completes the chapter.

##### 2.1.1 GENERAL INFORMATION ON SOCIOLINGUISTIC VARIATION

The earliest work on modern sociolinguistics was promulgated by Fischer (1958) when he noted the choice of the suffix /in/ for [ɪŋ] in words like 'talkin', 'walkin' and 'thinkin' in the speech of Boston school children. Variation sociolinguistics involves identifying a linguistic variable, collecting data concerning the variants of the linguistic variable and drawing conclusions about the social distribution of these variants. Labov developed the key notion of the sociolinguistic variable, which refers to a linguistic element which appears in different forms or varies in a speech community (Milroy and Gordon, 2003). Once the linguistic variable has been identified, it becomes the basic working tool which is then employed in an effort to see how linguistic variation relates to social variation. As such, the concept of the linguistic variable has been used by variationists to quantify linguistic data and correlate the

observed variation in data to social parameters such as age, gender, social class, ethnicity and education. The patterns of these correlations can be used to explain linguistic changes.

Labov's (1963) study in the island of Martha's Vineyard and (1966) in New York City brought out clearly the features surrounding sociolinguistic variation. These two Labovian studies demonstrated that the trajectories of specific linguistic changes could be inferred from the observation of patterns of variation in contemporary speech communities (Milroy and Gordon, 2003). The present study used this sociolinguistic variation since language variation is a prerequisite to language change.

### 2.1.2 THE TRADITIONAL VIEW OF LANGUAGE CHANGE

In the traditional view of language change, the only changes that are important in a language are those that can be demonstrated to have structural consequences (Wardhaugh, 2010). Consequently, over a period of time a distinction between two sounds may be lost in a language, as occurred historically in most varieties of English in the vowels of *meet* and *meat* and *horse* and *hoarse*. In most cases, these vowels have fallen together (or coalesced). This is also known as merger (Nathan, 2008:104). Alternatively, a distinction may be gained where there was none before. For example, the /s/ in *house* and *to house* was the same just as the /n/ in *thin* and *thing*. Over a period of time, a distinction was gained thus, *house* with an [s] but *to house* with a [z], or the [n] in *thin* and [ŋ] in *thing*. In this latter case, a single phonological entity became two: there was a structural split. So we find instances of *phonemic coalescence*, situations in which a contrast existed at one time but was later lost and instances of *phonemic split*; situations in which there was no contrast at one time but a contrast developed. According to this view of change, that is all you can really say because it is structural considerations alone that are all important. This is internal change in a language

and is observed through its consequences. Such change of course is not restricted to phonology. The morphology and syntax of a language change in the same way. External changes are also brought about through borrowing. Changes that occur through borrowing from other dialects or languages are quite clearly distinguishable, for a while at least. Through the use of the concepts of 'wave' and 'diffusion', we see the possibilities that the study of variation opens up to us for understanding the process of change; "If we believe that languages are changing all the time, and all linguists do hold that belief, we should also be able to see change in progress if we can recognize it" (Wardhaugh, 2010:197)

This view gives us a background to the study of language change and by extension, to the current study. Language change and particularly phonological changes goes further than this as it can be a result of other processes such as, epenthesis, elision, haplology, lenition among others (Campbell, 2004).

### **2.1.3 STUDIES ON PHONOLOGICAL CHANGE IN PROGRESS**

Chambers and Trudgill (1998:170) describe the spread of uvular /R/ in Western and Northern Europe. All the languages of this part of the world once had either an apical (i.e. tongue-tip), trilled, or flap /r/, but from the seventeenth century on, a uvular /R/ spread from Paris to replace these other varieties. This new /R/ crossed language boundaries, so that it is now standard in French, German, and Danish, and is also found in many varieties of Dutch, Swedish and Norwegian. The change from apical to uvular /R/ is also still continuing in Southern and Western Norway since young speakers use it but older speakers do not (Chambers and Trudgill, 1998) and there is no evidence that young speakers are about to give up their uvular /R/ pronunciations as they get older. Chambers and Trudgill's study is similar

to the current one in that it deals with change in a single consonant sound. Again, Chambers and Trudgill's study utilises both old and young speakers, just like in the current study.

Zeller (1997) describes a sound change in progress in and around Milwaukee, Wisconsin: many speakers pronounce words like *haggle* and *bag* to rhyme with *hegel* and *beg*, and *bank* and *benk*. This is another instance of the NCSS (Northern Cities Chain Shift). Zeller's investigation showed how it is both age and gender-related. The younger speakers she recorded, both male and female, have shifted completely and have lost the vowel contrast in such words. Older males and females are also participating in the change, with the older females leading so that older males are more likely to retain the vowel contrast than older females. The evidence strongly suggests a change in progress: the loss of contrast in these vowels before a voiced velar stop or nasal. Zeller's study is similar to the current study in that it utilises the social variables of age and gender, just like in the current study. Her study is, however, different in that it focuses on vowels while the current one focuses on a consonant.

In the African context, Habwe (2004) gives a historical perspective of sound change in the Kiswahili language. He gives an example of the deletion of /l/ over time. For example, *kioo* was *kilolo*; the /l/ was deleted where it occurred intervocalically. Other examples of this are *galagala* → *gaagaa* and *mulungu* → *mungu*. Habwe's study is similar to the current one in that it deals with only one consonant sound. It is however different in that it deals with the Kiswahili language while the current one deals with the Gĩkũyũ language. Again, Habwe's is different in that it focuses on only one position of the variable - intervocalic position, while the current study focuses on both word initial and intervocalic positions.

In Lulogooli, nouns start with a vowel, for example, umundu (person), abandu (people), uvuchima (ugali) and itsinguza (vegetable). Kebeya (1997) observes that the initial vowels are in the process of disappearing and in today's Lulogooli, these vowels are very rare, thus we have *mundu* (person), *bandu* (people), *vuchima* (ugali) and *tsinguza* (vegetable). Kebeya's study is similar to the current one in that it deals with a Bantu language (Luhya) just like the current one. Again, it considers the variables of age and gender just like in the current study. Kebeya's study is different in that it focuses on vowel sounds in nouns, particularly in initial positions whereas the current study focuses on consonant sounds in verbs, nouns and adverbs in both initial and medial positions.

An example of sound change from the Bantu branch of the Niger Congo language family, is where the Proto-Bantu sound represented as \*b regularly became a [w] in the daughter language Swahili and is dropped out of pronunciation entirely in another daughter language, Gĩkũyũ of Kenya (Karega, 1983). By other sound shifts, the Proto-Bantu consonant sequence \*nt changed into simple [t] in Swahili while becoming [nd] in Gĩkũyũ thus the Proto-Bantu root word 'Bantu' – 'people' is 'watu' in Swahili and 'andũ' in Gĩkũyũ. Karega's study is similar to the current study in that it deals with the same language- Gĩkũyũ, and also dealing with proto sounds. Karega's study is different from the current study in that the change he describes affects other languages including Swahili while the current study limits itself to Gĩkũyũ language.

#### 2.1.4 PHONOLOGICAL CHANGE AND AGE

Language change can be established by exploring the roles played by various social factors. Chief among these factors is age, since establishing that a pattern of variation represents a change in progress requires the consideration of speakers of different generations (Milroy and Gordon, 2003). Linguistic differences that differ from one another only in age can signal

either a regular maturational change or more likely a linguistic change in the community (Chambers, 2003) To differentiate between language change and use of speech appropriate to ones age, Wardhaugh (2010) suggests two ways. One way is to survey the same younger groups 20-30 years later to see if they maintain the innovations. The second way is to survey carefully chosen samples drawn from the same population at periods of 20-30 years to see if various sub-groups really have changed their behaviour. The second way seems to offer us better and immediate prospects but only if we can find data from a previous era that we can use for comparison with data we can collect now. The first way provides the most solid evidence of language change.

One study which was able to make use of roughly comparable sets of data from two periods of time is Labov's (1972) study of certain sound changes in progress in Martha's Vineyard. The survey conducted for the Linguistic Atlas of New England 30-40 years before him provided him with rich sources of data about the phenomena in which he was interested. Labov uses 5 generation cohorts: 14-30, 31-45, 46-60, 61-75, and 75+. He studied the frequency and distribution of phonetic variants of (ay) and (aw) in several regions, age levels, occupational and ethnic groups within the island. He found out that the centralization of (ay) and (aw) appeared to show a regular increase in the 31-45 groups. The explanation that Labov offers is that the change is merely an exaggeration of an existing tendency to centralize the first part of the diphthong.

Britain (1992) uses apparent time reasoning in his interpretation of international changes affecting New Zealand English. He examined the frequency of an intonation contour involving a sharp rise at its end (the high rise terminal) in the speech of several types of speakers. He compared speakers of three generations; 20-29, 40-49 and 70-79. The results

demonstrated a steady increase in the use of intonation pattern across the generations; it appeared in just 1.5 percent of the utterances of the oldest group, 3.1 percent of middle aged speakers and 7.9 percent of those of the youngest group. In the two studies above, the age factor is important. The two have used generation cohorts just like the current study. Labov's (1972) study is also similar to the current one in that he concentrates his attention on the pronunciation of the native Vineyarders. Likewise, the current study concentrated on the native speakers of the Mathira dialect. Labov's study used judgemental sampling to select subjects to fill pre-selected social categories, all locally born and raised (Feagin, 2004). The same sampling method was used in the current study. However, Labov's study is different in that it utilises five generation cohorts while the current one utilised three. The two studies are different in that they have not considered the social variable of education, which has been considered in the current study.

### **2.1.5 PHONOLOGICAL CHANGE AND GENDER**

Labov (1981:184) makes an interesting observation about the role that women play in linguistic change. He points out that whenever there is stratification by style and class in linguistic change, one can also expect differences between men and women, with women showing higher values for preferred variants than men, that is, a preference for forms that have more prestige in society. In his New York study, Labov found out that within the lower class, it is the middle aged who are at the leading edge of the hyper corrective behaviour of over-producing [r], with women rather than the men in the forefront.

Trudgill's (2002) work in Norwich, England, also appears to show certain changes in progress. He found that the distribution of the variants of the [ɪ] variable showed that there

were very marked differences between the usage of working class females and males. Working class males favoured the [n] variant, that is, pronunciations such as ‘singin’ rather than singing) much more than did females. He found similar results with other variables with women showing much stronger preferences for standard forms than men. Trudgill maintains that linguistic change in a direction away from the standard norms are led by men from the upper working class and middle working class, at least in Norwich. His general conclusion, therefore, is that non - standard working class speech forms are highly valued by males and females under 30, but these values are expressed covertly rather than overtly, that is, people may tell you they do one thing but actually do something else. Labov’s and Trudgill’s studies are similar to the current one in that each uses the Variationist Theory. Again, the two studies utilise the social variables of gender just like the current study. The two studies are different in that they consider the social variable of class which was not considered in the current study. The two studies also deal with the English language while the current study deals with Gĩkũyũ language.

### 2.1.6 PHONOLOGICAL CHANGE AND EDUCATION

Cassidy (1985) studies the degree to which variation can go - has actually gone - in respect to a single word in a limited area in The United States within the past few generations (Harold, 1986). No less than 40 phonemically different forms have developed (to say nothing of the sub phonemic variants). The word under consideration is *Catalpa*. The common *Catalpa* is an American tree (*Catalpa bignonioides* and *C. speciosa*), native to the lower Mississippi basin where it was brought east around 1730 and naturalised thereafter throughout the settled area of the Southern and Midland States. The tree is well known as a source of favourite fish bait, the *catalpa* worm, which infests the leaves appropriately in the early summer. The word which was ‘captured’ by *Catalpa* is *Catawba*, an Indian tribal name

applied to a native grape from which wine is made. *Catawba*, identified with *Catalpa* was therefore transferred to the tree and the worm.

Cassidy used three interview questions to interview 35 informants. He utilised the variables of age, gender, education and occupation. He found out that the 'capture' of *Catawba* and its variants more than doubled the number of variants. Cassidy observes that these could have developed by direct phonetic changes, but did not. *Catawba* was earlier known as *Catalpa* and then the sense was transferred to the tree and the worm. He also found out that sound changes, while not obviously systematic and in individual cases not predictable, follow certain expectable patterns; substitution of consonants, then intrusion of consonants, and variation of vowels: while these and other phonetic alterations are always latent, the structure of these two basic words, *Catalpa* and *Catawba* made them especially susceptible. An unusual array of variants was the result. Cassidy's study is similar to the current study in that it utilized the same variables that the current study used, that is, age gender and education. It is also similar in that it used only one entity (one word), just like the current study used one entity (one sound). The study is, however, different from the current one in that it considers the social variable of occupation which was not considered in the current study.

Al-wer's (1997) comments on the social significance of education in the Arab world suggest a clear relationship between changes in a speaker's social networks as he or she becomes educated, and patterns of linguistic variation. She notes that first a high level of education does not imply proficiency in Classical Arabic and, in agreement with Haeri (1997) and others emphasizes the marginality of classical Arabic to overall community patterns of language variation and change. The important point about education, according to Al-wer, is that it accurately indicates a speaker's degree of contact with speakers of other varieties

because “in most cases, college and university education involves leaving one’s hometown and interacting with speakers from different linguistic backgrounds. Educated speakers appear to be leading linguistic changes most often in the direction of urban and koineized regional standards” Al-wer (1997: 259).

### **2.1.7 METHODOLOGY IN VARIATIONIST STUDIES**

Mesthrie (2000) outlines the basic procedures in variationist studies. First he posits that the linguistic features which vary in a community are identified by the researcher who gathers data from the community by selecting a suitable sample of people. Second, an interview involving informal continuous speech as well as more formal dimensions of language use is conducted. Third, data is analysed. During this stage, the frequency of each relevant linguistic feature is noted. Fourth, the relevant social units like age groups, sex and social class are then selected. Lastly, significant correlations between the social groups and particular speech choices are ascertained. This study adopted the same procedure. However, since the study goes further to investigate phonological change the researcher considered the correlations between the linguistic variable /ð/ and all its variants with the social variables of age, gender and education and analysed the patterns exhibited with a view to describing phonological change in progress.

### **2.2 THEORETICAL FRAMEWORK**

The study was based on two theories: the Variationist Theory (Labov, 1972) to cater for the sociolinguistic phenomena and the Cognitive Phonology Theory (Lakoff, 1993), to account for the phonological phenomena.

The Variationist Theory, also referred to as the Quantitative Paradigm was propounded by William Labov (Labov, 1972). The theory is based on the premise that languages vary at all levels, whether phonological, morphological, syntactic or pragmatic. Variation is, therefore, an integral part of the linguistic system (Nurse and Heine, 2000). This variation can be in an individual speaker (intra - speaker variation) or across a group of speakers (inter - speaker variation) (Chambers, 2004). The theory also states that in different contexts, an individual will speak in different ways (Coates, 1992). The Variationist Theory comprises stylistic and social variations. Stylistic variation focuses on an individual's language depending on the social context of the language. Social variation focuses on language use depending on factors such as age, gender, ethnicity and social class among others (Chambers, 2003). These two variation types are what sociolinguists are interested in.

The variable is the key concept of the Variationist Theory. This is a linguistic feature that does not involve a change of referential meaning (Wardhaugh, 2010). Using this concept, sociolinguists have been able to quantify linguistic data. A speaker or different types of speakers will use more or less of a specific linguistic variant in a particular context (Chambers and Trudgill, 1998). At the inter - speaker level, the social differences of people will be reflected in the choice of variants that they use. The social differences include social class, gender, age, and social networks. Variationists are thus concerned with correlating the patterns of variable usage within language with the stratification in the society under study. For example, Labov in his New York City study correlated the occurrence and non-occurrence of post-vocalic [r] with the social class of the workers in the department stores (Labov, 1972).

The Labovian Theory calls for quantitative treatment of data using appropriate statistical techniques (Chambers, 2003). By collating, quantifying and applying statistical measures to linguistic data, variationists are able to study linguistic variability with greater precision and to describe the process of linguistic change (Labov, 1982). The general tenor of Labov's work throughout his career makes clear that he does not interpret patterns yielded by his quantitative methods primarily as an elucidation of the relationship between social and linguistic structure. His goal, shared by many variationists, is to obtain insights into processes of linguistic change and to challenge the theories that model language as a static entity identifying homogeneity with structure (Wardhaugh, 2010).

The apparent-time construct is of central significance to variation sociolinguistics. It was first introduced by Labov as a methodological tool to track the progress of linguistic change (Coulmas, 2005). The regular process of sound change can be isolated and recorded by observation across two generation cohorts. Systematic differences in apparent time are under certain conditions interpreted as evidence of change in progress, differences between generation cohorts being assumed to mirror changes over real time (Chambers, 2003). The present study fits into this paradigm because it collected data from speakers of the Mathira dialect, statistically quantified the data and correlated the phonological variants with the independent variables of age, gender and education level. The patterns of variability were used to explain change in progress.

The other theory used to account for the phonological patterns observed in the data is the Cognitive Phonological Theory. This theory was propounded by George Lakoff (1993). The theory stems from Cognitive Linguistics which assumes that languages are symbolic systems

that emerge through frequent usage. The sound system of a language is as much a matter of cognitive activity as are its grammar and lexicon.

Cognitive phonology assumes that phonology, like the rest of the language makes use of general cognitive mechanisms such as cross-dimensional correlations. The phoneme is the key element in cognitive phonology (Blum, 2009). Phonemes do not exist as discrete entities in speech due to several factors. One is co-articulation. Another has to do with different phonetic contexts involving different variants of the phonemes. There is also a great deal of inter - and intra - speaker variability due to speaking styles, dialects, age, gender foreign accents and pathologies; this means that the limits of variability of a given phoneme are impossible to demarcate (Blum, 2009).

Lakoff proposes three levels of representation and states that these are necessary and sufficient (Lakoff, 1993). The **morpheme level** (M-level) is the level that contains the lexicon with all the non-automatic allomorphs and the word schemas. The lexical morphemes are represented in terms of phonemes which are prototype centred, gradient classes of sounds. Certain morphemes may contain morpho-phonemes; otherwise the phonemes are fully specified for distinctive and non- distinctive features. The **phonemic or word level** (W-level) contains the morphological schemas and lexical stems that create words through unification; this includes selecting the relevant allomorphs from the lexicon. Words are phonologically fully specified for every feature, distinctive and non- distinctive. The **phonetic or utterance level** (P-level) is where words are concatenated to form longer utterances. At this level, the realisation of the utterances may range from highly careful hyper-speech to less careful hypo-speech (Lindblom, 1990).

There are two basic approaches as to the nature of the phoneme within the cognitive framework. One suggests that speakers store each phoneme in a form that is an abstract schematic summary representation of all its allophones, and in a speech event, this schematic form is then modified according to the phonetic contexts (Langacker, 1987). This schematic phoneme abstracted from actually observed instances of speech constitutes the prototype and the incoming stimuli are compared to it for similarity. The other approach to the phoneme stems from the 'exemplar' account which assumes that speakers store innumerable exemplars of observed phoneme tokens, the most frequent ones being more strongly 'implanted' in the mind and thus serving as the point of comparison with the incoming stimuli, and thus they form the prototype (Pierrehumbert, 2001). Exemplar theory proposes that human beings categorise and memorise their experiences in terms of so called 'exemplar clouds'; large clusters of remembered episodes of individual experiences. Phonological exemplar theory proposes that we do not form abstractions of the formal properties of the phoneme and words but remember individual occurrences of them just as they are perceived. These episodic tokens thus give rise to a mental lexicon containing highly detailed information of both the predictable and non-predictable properties of the sounds, and even data relating to individual speakers, speaking styles and dialects are conserved.

It is proposed that speakers store speech sounds in terms of labelled exemplar clouds. The prototype of each category is found in the part of the cloud that contains the greatest number of exemplars (Pierrehumbert, 2001); that is, where the most frequent tokens are concentrated. The number of memorised episodes is considerable and in a constant flux. With time, however, some exemplars will be forgotten and those tokens that are identical to one another, within the perceptual limits will consolidate into a single item in the cloud, for the exemplar clouds are 'granular' rather than 'powder-like' (Pierrehumbert, 2001). In this view then, a

labelled exemplar class of speech sounds largely corresponds to the traditional phoneme as a distinctive role and we may say that the label identifies the phoneme category.

To illustrate this phenomenon, Nathan (2008) uses the analogy of tracing a path through the park whereby several paths may be used but the path that is regularly used is visible since the grass is worn away. However, all the other paths are still there and available in case one would want to use them. Likewise, the more frequent instances of a phoneme are 'stronger' and hence more likely to be produced, and instances that are heard and are similar to the beaten path are likely to be assimilated to it. For example, the variable (ing) in words like *singing* and *fishing* may be produced as [ŋ] in *singing* and [n] in *singin'*. The two sounds will be stored in the cognitive mechanism of the speaker. The one with more frequent instances (instances that are heard) will be 'stronger' and hence more likely to be produced. This means that with time, one will be forgotten while the other will be dominantly used.

The current study fits into this theory as it is dealing with inter - speaker variability. Different speakers were expected to articulate the target sound differently depending on their age, gender and education levels. The variants, however, stem from a "prototype", meaning that they are all stored in the cognitive mechanism of the speaker, but there may be one variant that is dominantly used. These linguistic variants were then correlated with the social factors of age, gender and education and the patterns exhibited were used to describe the direction of the phonological change.

### **2.3 SUMMARY**

This chapter has presented the review of related literature. It has focused on the general information on sociolinguistic variation and the traditional view of language change. It has also looked at phonological change and gender, age and education, methodology in

variationist studies. Theoretical framework closes the chapter. In the next chapter, we focus on methodology.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter presents the research design, research site and population and sampling procedures. The chapter discusses data collection and data collection procedures, data analysis and interpretation and finally the ethical issues.

#### **3.2 RESEARCH DESIGN**

The study adopted a descriptive research design (Mugenda, 2008; Orodho, 2004). A descriptive research design determines and reports the way things are. Descriptive studies involve defining the questions to be answered, selecting the sample, collecting the data, examining the data for consistency and reliability, coding the data and then analysing it. The study elicited language variation data which was given numerical values. Statistical measures of mean, ANOVA and correlation were used to describe the data and correlate the patterns of observed variation with the social variables of age, gender and education in order to describe phonological change.

#### **3.3 RESEARCH SITE AND POPULATION**

The research was conducted in Mathĩra District (formerly Mathĩra Division of Nyeri District) of Nyeri County in Central Province, Kenya. Mathĩra District comprises of Konyũ, Karatina, Iria-inĩ, Magutu, Rũgũrũ, Kĩrĩmũkũyũ and Ngorano divisions (see Appendix V). Karatina town, located 26 kilometres from Nyeri town, along the Nyeri-Nairobi road is the district headquarter. Mathĩra has a population of 231,000 people (2009 census). This formed the

target population for this study. All the respondents sampled were born within Mathira district and are residents of the same place.

### 3.4 SAMPLING PROCEDURE AND SAMPLE SIZE

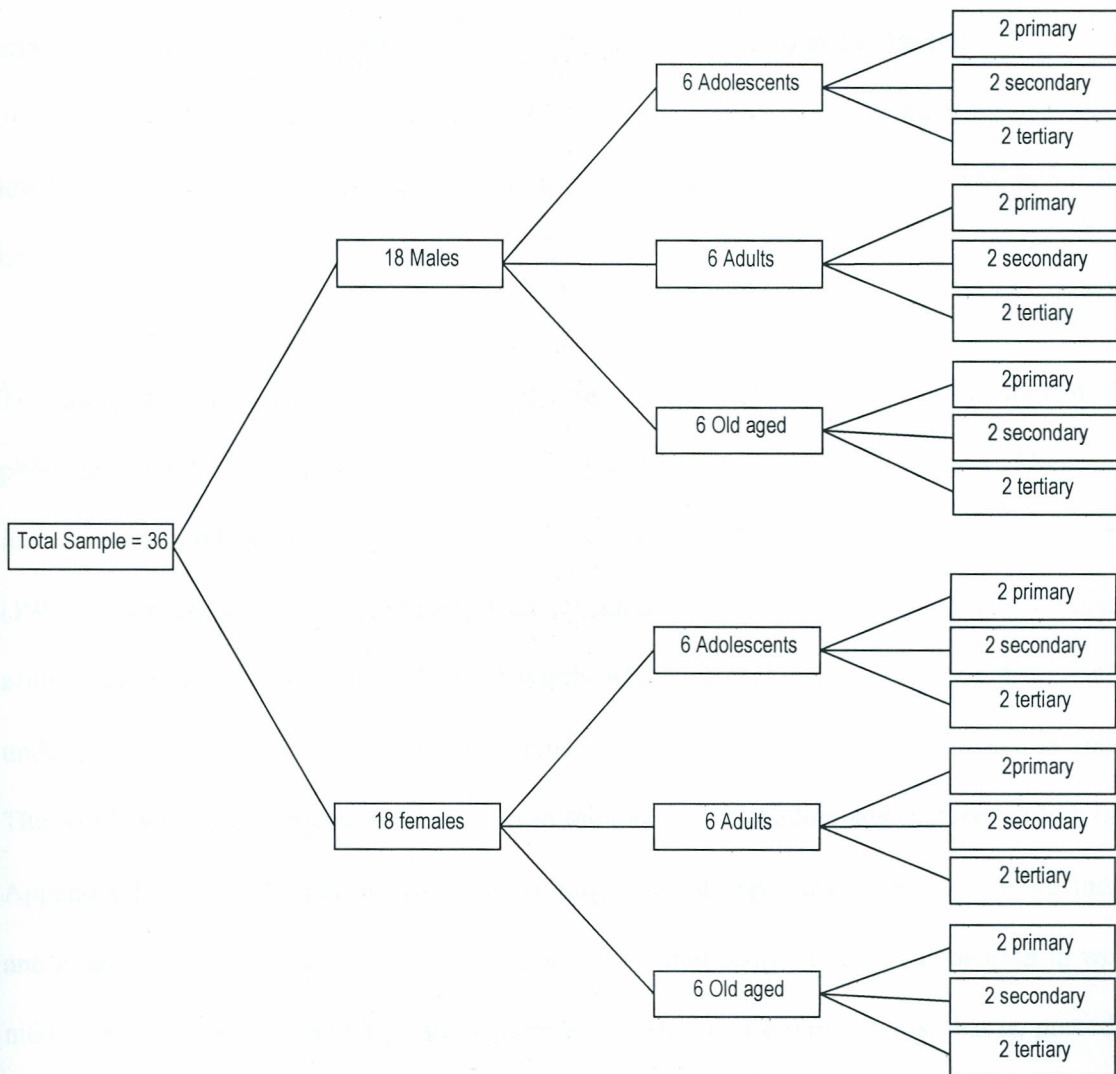
Since the study would not use all the 231,000 people, a small sample of 36 speakers was selected. This is because linguistic behaviour is relatively homogeneous and as several researchers have observed, large samples tend not to be necessary for linguistic surveys (Milroy and Gordon, 2003). Chambers, Trudgill and Schilling (2002) point out that variation in language can emerge from samples as small as 25 speakers. As such, the 36 informants were sufficient to enable an exhaustive study. The findings from the sample were then generalised to the larger group.

The researcher uses purposive sampling (Mugenda and Mugenda, 1999) to select rural areas that were to be covered: Kĩrĩmũkũyũ and Ngorano divisions since these were largely rural areas. This is because as McMahon, (1994) points out, rural areas tend to be more linguistically uniform than urban areas, and rural speakers are likely to have been in contact with fewer other varieties than their town counterparts.

To get a representative sample, the researcher used the social network approach (Milroy, 2004). A contact person (a resident of Kĩrĩmũkũyũ who works in Ngorano ) who had been identified in advance as a native speaker of the Mathira dialect was identified. The researcher developed rapport with this speaker who in turn led her to other native speakers. This was meant to ensure that only native speakers were sampled.

The 36 informants were divided into two categories; 18 males and 18 females. This is to ensure representativeness in terms of gender. Each of the two groups were further be divided into three age cohorts (6 subjects per cohort) namely; adolescents (12-19), adults (30-50) and old-aged 55 - 75) (Coulmas, 2005). Young children (below 12 years) were left out as at this stage, their language is still developing. Again, each of the groups was further subdivided into 3 educational levels: primary, secondary and tertiary as shown in Figure 3.1 below:

Figure 3.1: Sampling procedure



With this number of informants, each cell was filled with enough subjects to provide generalisations about the social groups.

### 3.4 RESPONDENT'S CODING

The 36 respondents were tape recorded as they responded to the interview questions and the data was transcribed on paper for each respondent. The respondents were coded for easier identification and also for anonymity purposes. Numbers 1-36 were used for both men and women. Letter F represents female and letter M represents male. Age was given letters A, B and C; A for adolescents (12-19 years), B for adults (30-50 years) and C for the old aged (55-70 years). Education was given the letters P, S and T: P for primary level, S for secondary level and T for tertiary level. For example, the respondent 1FCP is a female who is old and has primary level of education.

To collect the required language data, the researcher picked words that contained the phoneme under study from the Kikuyu-English dictionary (Benson, 1964). These are indigenous Gĩkũyũ words; they have not been borrowed from other languages since as Nurse (1985) observes, borrowing ultimately leads to adoption of foreign sounds which definitely affect their pronunciation. A total of 63 words which yielded 68 instances of the variable under study (since in some cases the phoneme occurs twice in a single word) were sampled. The words were the expected responses from the interview schedule and picture reading (see Appendix I Section 2). The words have the target sound appearing both in the word initial and medial positions, that is, 34 appearing in word initial position and 34 appearing in word medial position. Again, the target sound appeared in different environments, that is, preceded by different vowels as shown in Table 3.1 below.

Table 3.2: Position and environment of the variable (ð)

	Initial							Medial						
Before vowel	/a/	/ɛ/	/i/	/ɔ/	/u/	/e/	/o/	/a/	/ɛ/	/i/	/ɔ/	/u/	/e/	/o/
No. of words	10	3	10	2	4	2	3	9	3	11	1	3	4	3
Total	34							34						

Guy (1980) suggests that 30 tokens per variable is a reasonable objective, thus 34 tokens for each variable used in this study were considered adequate for making generalisations in a descriptive research. Any responses that were inadequate were also catered for by this number.

### 3.5 DATA ELICITATION PROCEDURES

The researcher used a tape recorder and an interview schedule to collect data. The tape recorder was used to record all the spoken data. Labov (1972:208) observes that the only way to obtain sufficient good data on speech is through tape-recording of the language data. Tape recording was also time-saving since it was simultaneously done with the interview schedule.

The responses were transcribed and analysed later.

The interview schedule had three sections. Section one (see Appendix I- Section 1) was to collect the informants' bio-data. The questions were read out to the informants by the researcher and the informants responded verbally as the researcher tape recorded them. In Section 2, the informants were provided with a list of 33 questions (see Appendix 1: section 2) which were read out by the researcher and the respondents responded verbally. The

questions had been designed to elicit the pronunciation of the target sound. All the variants produced by the informants were tape recorded. In section 3, the subjects were provided with pictures (see Appendix 1: Section 3). The respondents were required to read the pictures verbally as the researcher tape recorded their responses. Providing the subjects with similar questions and pictures enabled the researcher to ensure that contrasts of the same phonological variable were recorded for every subject. The choice of the interview schedule and picture reading was to ensure that those who cannot read word lists or texts through poor eyesight, illiteracy or other reasons were taken care of. In the event that the respondent could not read the pictures clearly due to various reasons as stated above, the researcher gave the respondent leading clues to help him or her correctly identify the pictures. The same applied to the questions.

### **3.6 DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

As stated earlier in the discussion of Cognitive Phonology Theory, the respondents were expected to exhibit a great deal of speaker variability due to age, gender and education. As such, all variable tokens were described on paper. As Labov (1982) directs, for the section of recorded speech being examined, all occurrences and non-occurrences of all variable variants were noted. Percentage scores were calculated for every individual speaker in both the picture reading and questions. Individual linguistic scores were collated into groups based on the independent variables of age, gender and education. The statistical measure of mean ( $\bar{x}$ ) was used to calculate the group percentage scores.

A further statistical test, analysis of variance (ANOVA) was applied to test the reliability of the research data. ANOVA is a parametric procedure used to test the significance of the differences between the means of the subgroups within the same population, for example,

age cohorts and men and women . ANOVA seeks to establish whether there is any significant variation between the groups in relation to variation within each group. It enables the analyst to ensure that the observed variability is not simply the result of chance and, therefore, the researcher can be reasonably certain that if the same speakers were recorded again, or a comparable group of speakers were recorded, similar patterns of variability would be observed (Milroy, 1989). A statistic known as the F-ratio is produced; which is then tested for significance using a T-test statistical technique (Mugenda, 2009). If a given level of F proves to be significant, one can be confident that even with very small groups, the difference observed is unlikely to be the result of chance. This study used the ANOVA on the data that was obtained. For ease and accuracy, all ANOVA data in the study was computed by use of the SPSS-ANOVA computer application program.

The linguistic scores were then correlated with the social variables of age, gender and education. Pearson's Correlation coefficient was used to establish the relationship between linguistic scores and social variables. The scores were presented in tables. Inferences were then drawn from the patterns manifested by the sample data. A discussion based on observations made in the analysis ensued and appropriate recommendations and suggestions for language pedagogy were made. This study adopts Hudson's (1980) method of presenting variables in curved brackets '( )' separated from variants (in square brackets) by a full colon.

### **3.7 ETHICAL ISSUES**

Mugenda and Mugenda (1999) observe that protecting the rights and welfare of the participants should be the major ethical obligation of all parties involved in a research study. As such the researcher put into consideration ethical issues especially in data collection and analysis. Before proceeding to the field, the researcher obtained the required approval from

the Kenyatta University Graduate School through the School of Humanities and Social Sciences, Kenyatta University. Again, human subjects live in areas that are governed by various government administrative units. As such, there is need to get written consent from the government representative of such areas. Towards this end, the researcher approached the area chiefs of the research site (Ngorano and Kĩrĩmũkũyũ ) in advance and sought written permission ( See Appendix VII).

One of the fundamental elements of ethical research using human subjects is the principle of informed consent (Milroy and Gordon, 2003). Subjects must voluntarily agree to participate in the research and must know what their participation entails. It is actually unethical to tape record respondents without their consent. As Labov (2003) observes, a hidden tape recorder and a hidden microphone produce data that is as dubious as the method itself. Towards this end, the researcher, through her contact person approached the respondents, created rapport with them and informed them of her intention to carry out a research on language use. This means that the subjects were allowed to voluntarily agree to participate in the research as a practice of research ethics. Creating a rapport helped minimize the observer's paradox since the respondents were briefed on what was expected of them, thus, making them relax for the interview.

Information provided by participants should remain confidential and the identity of the respondents should remain known only to the researcher (Milroy and Gordon, 2003). As such, the researcher used numerical codes 1-36 to identify the respondents so as to avoid using their names. The tape recordings were restricted to the researcher and the researcher's supervisors.

### 3.8 SUMMARY OF THE CHAPTER

This chapter has looked at methodology. Its focus was on research design, site and population, sampling procedure and sample size, respondents coding, data elicitation, analysis and interpretation. Ethical issues were also discussed. The next chapter focuses on data analysis, presentation and interpretation.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

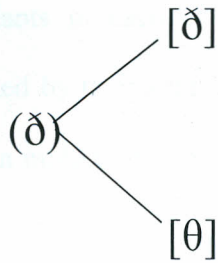
#### 4.0 INTRODUCTION

This chapter deals with the analysis and presentation of data. This is guided by the set objectives which are: To identify and describe the phonological variation, to correlate the phonological variants of the variable (ð) with social variables, and to describe the direction of the phonological change in progress. First, description of the variation is done, then correlation of the variants with the social variables and then the description of the direction of the phonological change.

#### 4.1 DESCRIPTION OF THE PHONOLOGICAL VARIABLE AND ITS VARIATION

This study has focused on the consonant variable (ð). The variable featured in 63 words giving a total of 68 tokens (since in some words the variable occurs twice). 34 of these tokens were at word initial position while 34 were at word medial position (cf Fig 3.1). As such, a total of 2448 tokens were expected from the 36 respondents. However, 8 tokens are missing as a result of some respondents either not being able to correctly identify the word or being unable to recognise the given pictures even after the researcher giving them leading clues. We therefore obtained a total of 2440 tokens.

The variable exhibited two variants in the Gĩkũyũ spoken by the respondents of the Mathĩra dialect, thus,



#### 4.1.1 THE VARIANT [ð],

This is a voiced dental fricative. It is one of the phonemes found in the Mathīra dialect phonemic inventory (see Appendix III). The variant occurred in both word initial and word medial positions as shown in the following examples:

(1): [ðaara] – nappier grass

(2): [riðo] – eye

#### 4.1.2 THE VARIANT [θ]

This is a voiceless dental fricative. It is one of the phonemes found in the Gīkūyū phonemic inventory (see Appendix II). The variant occurred in both word initial and word medial positions as shown in the following examples:

(3): [θaara] – nappier grass

(4): [riθo] – eye

#### 4.1.3 THE VARIABLE AND WORD POSITION

The variable (ð) occurred in two word positions: word initial and word final positions. It was, however, noted that irrespective of the position, there were only two variants observed.

Occurrences of the two variants in each of the two positions were calculated. Their percentages were also calculated by taking the tokens in each position and dividing this by the total number of tokens then multiplying by 100. The results were as shown in Table 4.1 below.

Table 4.1 Distribution of variants in terms of position of the variable

Position	Variant [ð]		Variant [θ]	
	Count	%	Count	%
Initial	315	12.9%	907	37.2
Medial	273	11.2%	945	38.7
Total	1218	50.1%	1222	49.9%

The variant [ð] had 315 occurrences which represent 12.9% at word initial position and 273 occurrences which represent 11.2 % at word medial position, giving us a total of 589 tokens.

The variant [θ] had 907 occurrences which represent 37.2% at word initial position and 945 occurrences which represents 38.7% at word medial position giving a total of 1851 tokens.

The two variants, thus, give us a total of 2440 occurrences

#### 4.1.4 THE VARIABLE, VARIANTS AND THEIR FREQUENCY OF OCCURRENCE

The frequency of occurrence and percentages for each respondent was calculated (cf Appendix IV). All the tokens for each variant elicited by each of the respondents were counted, totalling to 2440. This was arrived at by taking all the tokens of a specific variant by the respondents and dividing them with the total number of the tokens for both variants of variable (ð) and then multiplying the results by 100. The frequencies of occurrence of all the variants and their percentages are presented in Table 4.2 below.

Table 4.2 Distribution of the variants

Variable	Variant	Frequency	Percentages
(ð)	[ð] variant	589	24.1%
(ð)	[θ] variant	1851	75.9%
Total		2440	100%

Table 4.2 above shows that there are 2440 tokens that were elicited. Out of these, 589 are [ð] variant representing 24.1% and 1851 are [θ] variant representing 75.9%. This shows that [θ] variant scored higher than the [ð] variant.

#### 4.1. 5 THE VARIANTS AND THEIR PERCENTAGE IN TERMS OF GENDER

The percentages of the variants as elicited by the two categories of gender were calculated as explained above. The results are as shown in Table 4.3 below.

Table 4.3 Distribution of variants by gender

Gender	Variant [ð]		Variant [θ]	Total
	Male	Count	408	810
	%	16.7%	33.2%	49.9%
Female	Count	181	1041	1222
	%	7.4%	42.7%	50.1%

Table 4.3 above shows that male respondents have 16.7% of [ð] variant and 33.2% of [θ] variant. The female respondents have 7.4% of [ð] variant and 42.7% of [θ] variant. This reveals a pattern where female respondents have higher scores of [θ] variant than their male counterparts. The male respondents have higher scores in [ð] variant than the female respondents.

#### 4.1.6 THE VARIANTS AND THEIR PERCENTAGE IN TERMS OF AGE

The percentages of the tokens elicited by respondents in each of the three age categories were calculated. The results are as shown in Table 4.4 below:

Table 4.4: Distribution of variants and age

Age	Variant [ð]		Variant [θ]	Total
	Count	%		
Adolescents	Count	12	799	811
	%	0.5%	32.7%	33.2%
Adults	Count	121	700	821
	%	5.0%	28.7%	33.6%
Old	Count	456	352	808
	%	18.7%	14.4%	33.1%

Table 4.4 above indicates that in the [ð] variant, the old respondents had the highest score of 18.7%, followed by the adults with 5.0% and the adolescents had the lowest score of 0.5%. On the other hand, in the [θ] variant, adolescent respondents had the highest score of 32.7%, followed by the adults with 28.7% and then the old had the lowest score of 14.4%.

#### 4.1.7 THE VARIANTS AND THEIR PERCENTAGE IN TERMS OF EDUCATION

The tokens elicited for each of the variants by respondents in each of the three education categories were counted and their percentages calculated. This was done by dividing the total for each variant by the total number of tokens for the variable (ð) then multiplying the results by 100. The results are as shown in Table 4.5 below.

Table 4.5 Distribution of variants by education

Age	Variant [ð]		Variant [θ]	Total
	Count			
Primary	Count	328	487	815
	%	13.4%	20.0%	33.4%
Secondary	Count	106	714	820
	%	4.3%	29.3%	33.6%
Tertiary	Count	155	650	805
	%	6.4%	26.6%	33.0%

Table 4.5 above shows that in the [ð] variant, respondents with primary level of education have the highest score of 13.4%, followed by the tertiary respondents with 6.4% and those with secondary level of education have the lowest score of 4.3%. In the [θ] variant, respondents with secondary level of education have the highest score of 29.3%, followed by those with tertiary level of education with 26.6% and those with primary level of education have the lowest score of 20.0%.

## 4.2 CORRELATIONS

The second objective of this study is to correlate the phonological variation of the variable (ð) with the social variables of gender, age and education. First, the relationship between the variants and the social variables was established. The scores were then subjected to correlation analysis.

### 4.2.1 RELATIONSHIP OF THE VARIANTS WITH GENDER

This relationship is as shown and discussed earlier (cf 4.2.1)

#### 4.2.2 RELATIONSHIP OF THE VARIANTS WITH GENDER AND AGE

The tokens elicited for each of the variants by each of the three age categories were counted in either of the two gender categories. Their percentages were calculated by dividing the total for each variant by the total number of tokens for the variable ( $\delta$ ) then multiplying the results by 100. The results are as shown in Table 4.6 below:

Table 4.6 Variants and their distribution by gender and age

Age	Variant [ $\delta$ ]						Variant [ $\theta$ ]					
	Adolescents		Adults		Old		Adolescents		Adults		Old	
Gender	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Female	2	0.1	30	1.2	149	6.1	401	16.4	383	15.7	257	10.5
Male	10	0.4	91	3.7	307	12.6	398	16.3	317	13.0	95	3.9
Total	12	0.5	121	5.0	456	18.7	799	32.7	700	28.7	352	14.4

From Table 4.6 above, it can be observed that the male respondents have higher scores of [ $\delta$ ] variant, that is, 0.4%, 3.7% and 12.6% than their female counterparts who have 0.1%, 1.2% and 6.1%. On the same note, female respondents in the three age categories have higher scores of [ $\theta$ ] variant, that is, 16.4%, 15.7% and 10.5% than their male counterparts who have 16.3%, 13.0% and 3.9%. It is also clear that the difference between male and female adolescents in the use of [ $\theta$ ] variant is minimal, that is, 16.3% and 16.4%. Old male respondents have the highest score in [ $\delta$ ] variant with 12.6% while the female adolescents have the highest score in [ $\theta$ ] variant with 16.4%. Again, female adolescent respondents have the lowest score in [ $\delta$ ] variant with 0.1% while the old male respondents have the lowest in [ $\theta$ ] variant with 3.9%.

### 4.2.3 RELATIONSHIP OF THE VARIANTS WITH GENDER, AGE AND EDUCATION

The tokens elicited for each of the variants by respondents in each of the three social categories were counted and their percentages calculated. This was done by dividing the total for each variant by the total number of tokens for the variants of the variable ( $\delta$ ) in each of the categories then multiplying the results by 100. The results were as shown in Table 4.7 below.

Table 4.6: Variants and their distribution by gender, age and education.

		Variant [ $\delta$ ]						Variant[ $\theta$ ]					
Education		Primary		Secondary		Tertiary		Primary		Secondary		Tertiary	
Age	Gender	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Adolescents	Male	1	0.04	6	0.2	3	0.1	135	5.5	130	5.3	133	5.5
	Female	2	0.08	0	0	0	0	134	5.5	136	5.6	131	5.4
Adults	Male	69	2.8	12	0.5	10	0.4	67	2.7	124	5.1	126	5.1
	Female	11	0.5	18	0.7	1	0.04	125	5.1	123	5.0	135	5.5
Old	Male	127	5.2	64	2.6	116	4.8	9	0.4	72	3.0	14	0.6
	Female	118	4.8	6	0.2	25	1.0	17	0.7	129	5.3	111	4.5
<b>Total</b>		<b>328</b>	<b>13.4</b>	<b>106</b>	<b>4.3</b>	<b>155</b>	<b>6.4</b>	<b>487</b>	<b>20</b>	<b>714</b>	<b>29.3</b>	<b>650</b>	<b>26.6</b>

Table 4.7 above presents scores that indicate that all the adolescent female respondents with secondary and tertiary levels of education use [θ] variant. Old male respondents with primary level of education had the highest score in the [ð] variant with 5.2% and the lowest in the [θ] variant with 0.4%. Another finding here is that apart from the adolescent respondents with primary level of education and adults with secondary level of education, male respondents have higher scores in the [ð] variant than female respondents. On the same note, female respondents score higher than males in the [θ] variant apart from the adolescent respondents with primary level of education and adults with secondary level of education.

#### **4.2. 4 CORRELATION OF THE VARIABLE WITH THE SOCIAL VARIABLES**

This subsection presents statistically analysed information from the research data. All the tokens were counted and subjected to mathematical calculations. First the calculations on variability of the variable (ð) by gender, age and education are presented. Correlation analysis on the findings is conducted to establish the relationship between the phonological variations of the variable (ð) with the social variables. The statistical information is presented in tables and then interpreted.

##### **4.2.4.1 VARIABILITY BY GENDER, AGE AND EDUCATION**

Calculations on the variability of the variable by gender, age and education were calculated and the results are as shown in Table 4.8 below:

Table 4.8 ANOVA scores

		Sum Squares	df	Mean Square	F	Sig.
AGE GROUP	Between Groups	442.639	1	442.639	917.369	.000
	Within Groups	1176.357	2438	.483		
	Total	1618.996	2439			
GENDER	Between Groups	29.077	1	29.077	122.029	.000
	Within Groups	580.922	2438	.238		
	Total	609.998	2439			
LEVEL OF EDUCATION	Between Groups	65.126	1	65.126	102.119	.000
	Within Groups	1554.833	2438	.638		
	Total	1619.959	2439			

Table 4.8 above shows that there is a significant statistical difference between the means of the social variables of gender, age and level of education at 0.000 which is greater than 0.05.

#### 4.2.4.2 CORRELATING LINGUISTIC SCORES WITH THE SOCIAL VARIABLES

To establish the relationship between the phonological variations of the variable ( $\delta$ ) with the social variables, a Pearson correlation analysis was conducted on the findings. Table 4.9 below represents this.

Table 4.9 – Correlation of linguistic scores with social variables

		GENDER	LEVEL OF EDUCATION	AGE GROUP	CONSONANT PRONUNCIATION
GENDER	Pearson Correlation	1	.003	-.003	-.218**
	Sig. (2-tailed)		.901	.901	.000
	N	2448	2448	2448	2440
LEVEL OF EDUCATION	Pearson Correlation	.003	1	.003	.201**
	Sig. (2-tailed)	.901		.879	.000
	N	2448	2448	2448	2440
AGE GROUP	Pearson Correlation	-.003	.003	1	-.523**
	Sig. (2-tailed)	.901	.879		.000
	N	2448	2448	2448	2440
CONSONANT PRONUNCIATION	Pearson Correlation	-.218**	.201**	-.523**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	2440	2440	2440	2440

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.9 above is a correlation coefficient table indicating that there are significant correlations in all three social variables with the consonant pronunciation respectively at - 0.218, 0.201, and 0.523 for gender, level of education and age, at 0.01 level of confidence. This indicates that there was statistical significance between the variants and the social variables.

### 4.3 DIRECTION OF PHONOLOGICAL CHANGE

This section discusses the findings of the research based on the statistical data presented above. It gives a description of the phonological change and gender, age and education level.

The summary of the section closes this section.

### 4.3.1 DIRECTION OF PHONOLOGICAL CHANGE AND GENDER

In this study, gender was used as one of the independent variables and it was correlated with patterns of variability in the use of the variable ( $\delta$ ) in the Gĩkũyũ spoken by the Mathĩra dialect respondents. The statistical figures in ANOVA and Pearson's correlations indicate that gender indeed influences phonological variability. The emerging pattern was that there was a correlation between the phonological variation of the variable ( $\delta$ ) and gender. This is in line with the proposition of the variationist theory that the social differences of people are reflected in the choice of the variants they use. In our case, the findings indicate that more female speakers identify with the  $[\theta]$  variant, the more prevalent form, than the  $[\delta]$  variant (cf Table 4.2). This concurs with other studies that have been done in Kenya (Kebeya, 1997; Njoroge, 2006; Itumo, 2006 and Waithera, 2006) which note that female speakers identify more with the standard forms of language.

16.7% of the male respondents used the  $[\delta]$  variant while 33.2% used the  $[\theta]$  variant. On the same note, 7.4% of the female respondents used the  $[\delta]$  variant while 42.7% used the  $[\theta]$  variant. This clearly indicates that majority of the respondents irrespective of their gender are dropping the use of the  $[\delta]$  variant in favour of the  $[\theta]$  variant.

This is an indication that the dental voiced fricative ( $/\delta/$ ) in the Mathĩra dialect is slowly disappearing giving way to the voiceless dental fricative ( $/\theta/$ ), thus a phonological change is in progress. In terms of gender, the change here is being led by women. This means that the women who speak the Mathĩra dialect are moving towards the use of the phoneme  $/\theta/$  faster than the men. This concurs with Wardhaugh (2010:214) who notes that women may be more active participants than men in some changes.

#### 4.3.2 DIRECTION OF PHONOLOGICAL CHANGE AND AGE

From this study, it emerged that there was a significant relationship between the phonological variation of the variable ( $\delta$ ) with age. The adolescent respondents have the highest scores in the use of the  $[\theta]$  variant while the old respondents have the lowest in the same (cf Table 4.4). The old respondents, on the other hand, have the highest score in the  $[\delta]$  variant while the adolescent respondents have the lowest in the same. This concurs with Muthwii (1994) and Milroy and Gordon, (2003) who note that there can be marked linguistic variation that correlates with the age of the speakers.

This emerging finding could be explained by the fact that old respondents are conservative and tend to hold to their native forms, in this case, the  $[\delta]$  variant. The adolescents, due to their free interaction and schooling which enables them to interact with speakers of other Gĩkũyũ dialects using the  $[\theta]$  variant may have been easily influenced to use it. As Labov (1972:304) observes, “young people are easily influenced by their peers thus the fast spread of a linguistic change among them”. This means that during their interaction, they hear the use of the  $[\theta]$  variant more than the use of the  $[\delta]$  variant. This observation can be explained through Nathan’s (2008) assertion that when two sounds are stored in the cognitive mechanism of a speaker, the one with more frequent instances (instances that are heard) will be ‘stronger’ and hence more likely to be used (cf section 2.2). This means that with time, one will be forgotten while the other one will be dominantly used. In our case, the  $[\delta]$  will be forgotten while the  $[\theta]$  will be dominantly used.

The direction of change here shows that the adolescents are leading in the phonological change. They are moving away from the use of the  $[\delta]$  variant in preference of the  $[\theta]$  variant which is used by speakers of the other Gĩkũyũ dialects. Wardhaugh’s (2010) assertion that

the young are usually in the vanguard of most changes may be used to strengthen this observation.

The establishment that the phonological change is being led by the adolescents is a stamp that the change is sustainable. This is because with the exit of the old through natural attrition and the entry of more young people, the use of the [ð] variant will most likely disappear. The adolescents with time become adults and they will influence the incoming adolescents in their use of the [θ] variant hence the change.

#### **4.3.3 DIRECTION OF PHONOLOGICAL CHANGE AND EDUCATION**

The study found that respondents having primary level of education have the highest score in the [ð] variant while those with secondary level of education have the lowest in the same (cf Table 4.5). This can be explained that since most primary schools are localised, contact with speakers of other varieties is minimal hence the tendency to maintain the original sounds.

Although the respondents with secondary level of education have higher scores in the [θ] variant than those with tertiary level of education, it is evident that educated respondents, with secondary and tertiary levels of education have higher scores in the use of the [θ] variant than those with primary level of education. This concurs with Alwer (1997) who observes that college and university education involves one leaving his hometown and interacting with speakers from different linguistic backgrounds hence educated speakers lead in linguistic change. In our case, therefore, it can be observed that those with higher levels of education are moving away from the usage of the [ð] variant in preference of the [θ] variant, hence the change being led by the highly educated.

The observed direction of change in terms of the respondent's level of education is in line with Nathan's (2008) analogy of a path in the park that is regularly used being more visible hence used even more. He argues that the paths that are rarely used are still there in case one would want to use them. This explains why there are more respondents with secondary level of education using the [ð] variant than the tertiary group: because 'the paths are still there in case one would want to use them'. Nathan argues that with time, however, these paths will disappear since only a few uses them and the few will eventually join the rest in using the regularly used path. In our case, the [θ] variant is used more frequently thus is more likely to overshadow the use of the [ð] variant. Eventually, the [ð] variant will be forgotten and everybody will tend to use the [θ] variant.

#### 4.4 CONCLUSION

This chapter embarked on the analysis and interpretation of data. It emerged that the phonological variable (ð) elicited 2 variants: [ð] and [θ], irrespective of the position of the variable in a word. The statistical analysis done by use of the computer programmes found out that female respondents approximated more to the more prevalent form of the phoneme under study, the [ð] variant. It was also found out that most adolescent respondents are no longer using the variant [ð] thus they have changed to the use of [θ] (cf Table 4.4). Finally, it was found out that a more of the respondents with primary level of education, and especially old respondents still use the variant [ð]. The patterns that emerge thus indicated that there is a phonological change in progress, which is being led by women, adolescents and highly educated speakers.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 INTRODUCTION

This chapter presents a summary of the research findings as observed in the research, gives conclusions, and makes general recommendations for areas on which further research can be conducted.

#### 5.2 SUMMARY OF FINDINGS

The objectives of the study were to identify and describe the phonological variation of the variable (ð) in the Gīkūyū spoken by the Mathīra dialect speakers as well as to correlate the phonological variation of the variable (ð) with the social variables of age, gender and education. The phonological variable and the variants were statistically tested to determine whether there was a correlation between them. The patterns observed were used to describe phonological change.

The major finding that emerged from the study is that there is a phonological change in progress in the Gīkūyū spoken by the respondents of the Mathīra dialect. It involves a change from the use of the voiced dental fricative, /ð/, to that of the voiceless dental fricative, /θ/. There was no significant relationship between the phonological variation of the variable (ð) with the position of the variable thus position does not influence phonological variability in this study.

Gender, age and education seem to influence phonological variation and change. Gender influences phonological variation and change in that more female respondents use the [θ] variant than their male counterparts. On the same note, more male respondents use the [ð] variant than their female counterparts (cf Table 4.3). Age influences the variation of the variable (ð) in that the adolescents use more of the [θ] variant than the [ð] variant while the old use more of the [ð] variant than the [θ] variant (cf Table 4.4). This shows a trend where the use of the [ð] variant again decreases with age. Again, education seems to influence the variation. Respondents with primary level of education seem to use more of [ð] variant than the [θ] variant (cf Table 4.5).

### 5.3 CONCLUSIONS

From the findings of this study, we can conclude that there is a phonological change in progress in the Gīkūyū spoken by speakers of the Mathīra dialect. The phonological change here can be represented as:

$$\dot{\theta} > \theta$$

The unshafed arrow here represents a description of an event in the history of a language. This can be interpreted that with time the /ð/ in the Mathīra dialect has been, and is being phonologized to /θ/.

This change, therefore, involves devoicing, that is, the voiced dental fricative is changing into a voiceless dental fricative in the Gīkūyū spoken by the Mathīra dialect speakers.

Female speakers are in the forefront in this change. Again, speakers with high levels of education are adopting the change. However, it is the adolescent speakers that are in the

vanguard of the change. This means implies that the change is likely to be strongly adopted and sustained by the future generation. From this conclusion, we can predict that in future, the use of the [ð] variant in the Gīkūyū spoken by speakers of the Mathīra dialect will diminish since they will adopt the use of the [θ] variant like the rest of the speakers of the other Gīkūyū dialects.

#### 5.4 RECOMMENDATIONS

This study has established that there is phonological change in the Gīkūyū spoken by the speakers of the Mathīra dialect. It notes that many speakers are moving towards the use of /θ/ like the speakers of the other Gīkūyū dialects thus moving away from the use of their original /ð/. This implies that in the future, the [ð] variant, which is a stereotype of the Mathīra dialect, may not be in use.

A language that is losing its heritage phonemes and adopting those of others is in the process of pseudo extinction. Rampant pseudo extinction may in turn lead to language death and eventually language loss. To avoid this, this study recommends that recordings of articulations produced by native speakers of the Mathīra dialect should be preserved for historical purposes. This would enable teachers, students and researchers of native languages to make references with ease.

Again, language centres should be established where the different dialects of Gīkūyū will be taught. Taped records of the native speakers of these dialects should be availed in these centres for preservation and reference. These data would go a long way in providing comparative data for researchers of language variation and change who wish to carry out both synchronic and diachronic studies on the same. Phonetic and phonemic inventories of these

dialects should also be availed. This would assist the younger speakers of the coming generations to learn their original dialects as part of their cultural heritage.

### **5.5 AREAS FOR FURTHER RESEARCH**

The research looked into phonological variation and change in the Mathĩra dialect of Gĩkũyũ language. Further research can be carried out on other types of linguistic change such as syntactic, lexical, morphological and semantic among others. The research was confined to two divisions in Mathĩra district namely: Ngorano and Kĩrĩmũkũyũ divisions. Further research can be carried out in the other divisions for comparative purposes.

This study focused on one linguistic variable which is a consonant. Other studies can look into other linguistic variables, both consonants and vowels. Again, this was a study using careful speech. Another one can be carried out focusing on less careful speech to establish the relationship between stylistic variation and language change.

The study was carried out in a rural area. Other studies can be conducted in urban areas for comparative purposes. All these researches could be enriching and could provide exciting insights into language variation and change especially in African languages

## BIBLIOGRAPHY

- Aitchison, J. (2001). *Language change: Progress or decay (3<sup>rd</sup> edition)*. Cambridge University Press. Cambridge
- Al-Wer, A. (1997). "Arabic between reality and ideology". *International journal of Applied Linguistics* 7 (2)
- Benson, T. (1964). *Kikuyu – English Dictionary*. Oxford University Press. Oxford. New York
- Britain, D. (1992). *Linguistic change in intonation: The use of high-rising terminals in New Zealand English*. *Language variation and change*, 4
- Blum, R. (2009). *The phoneme in cognitive phonology: Episodic memories of both meaningful and meaningless units* In: *Cognitextes*. Vol 2:2009
- Campbell, L. (2004). *Historical linguistics. An introduction*. The MIT Press
- Cassidy, F. and Houston, H. (eds). (1985). *Dictionary of American English*. Cambridge, MA. Belknap.
- Chambers, J. (2004). "Studying language: An informal epistemology" in, *The handbook of language variation and change*". J. K Chambers et al (eds) Oxford. Blackwell Publishing pg 3-13.
- Chambers, J. (2003). *Sociolinguistic theory (2<sup>nd</sup> edition)*. Oxford; Blackwell
- Chambers, J. K and Trudgill, P. (1998). *Dialectology (2<sup>nd</sup> edition)*. Cambridge. Cambridge University Press.
- Cheshire, J. (1991). *Sociolinguistics and English around the world*" In, *English around the world: Sociolinguistic perspectives*. J. Cheshire (ed) Cambridge Cambridge University Press. P 1-12
- Coates, J. (1992). *Women, men and language: A sociolinguistic account of differences in language (2<sup>nd</sup> Edition)* London Longman
- Coulmas, F. (2005). *Sociolinguistics: The study of speaker's choices*. Cambridge University Press. Cambridge

- Dwyer, D. (1997). *A web book of African languages: page on kikuyu*; <http://www.isp.msu.edu/Afrlang/kikuyuroot.html>.
- Feagin, C. (2004). *Entering the community* in “*The handbook of language variation and change*”, Chambers et al (eds) Oxford. Basil Blackwell
- Fischer, J. (1958). *Social influences on the choice of linguistic variant*. Word, 14
- Fromkin, V. and Rodman. R. (2002). *An introduction to language*. 7<sup>th</sup> edition. Fort Worth: Holt, Rhinehart and Winston, Inc
- Guy, G. (1980). *Variation in the group and the individual: The Case of final stop deletion*; In, Labov (ed) *Locating language in time and space*. New York Academic Press, (pp 1-36).
- Habwe, J. and Karanja, P. (2004). *Misingi ya sarufi ya Kiswahili*. Phoenix Publishers. Nairobi
- Haeri. N. (1997). *The Sociolinguistic Markets of Cairo: Gender, class and education*. London and New York Kegan Paul International
- Harold, A. (1986). *Dialect and language variation*. Academic Press Inc.
- Hockett, F. (1950). *Age grading and linguistic continuity*. Language 26: 449-57
- Holmes, J. (2008). *An introduction to sociolinguistics* (2<sup>nd</sup> edition). Pearson. Longman.
- Hudson, A. (1980). *Sociolinguistics*. Cambridge University Press. Cambridge
- Itumo, J. (2006) *Phonological variability in the ESL of students: A case study of Mikuini secondary school, Machakos district*. Unpublished M.A Thesis, Kenyatta University
- Jahang’iri, N. and Hudson, A. (1982). *Socio-linguistic variation in speech communities*. Cambridge University Press.
- Kamau, T. (1996). *The major phonological processes of Kindia and Kigichugu dialects of Gikūyū: A comparative study*. Unpublished MA thesis, Kenyatta University
- Karega, M. (1983). *Sound change and the classification of the dialects of southern Mount Kenya*. Published dissertation Phd, University of Nairobi.

- Kebeya, H. (1997). Accommodation between two Luyia dialects; Loogoli and Litwakho. Unpublished M. A. thesis, Kenyatta University.
- Kenya population Census (2009). Kenya National Bureau of Statistics
- Labov, W. (2010). *Principles of linguistic change: Cognitive and cultural factors*. Wiley Blackwell publishers. UK.
- Labov, W. (2006). *The social stratification of English in New York City* (2<sup>nd</sup> edition). Washington Centre for Applied Linguistics.
- Labov, W. (2003). "Pursuing the cascade model". In: *Social dialectology*, Britain, David and Jenny Cheshire (eds), p9-22. Amsterdam, John Benjamins.
- Labov, W. (1982). *Objectivity and commitment in linguistic science: The case of the Black English in Ann Arbor*. In *Language in Society* 11. pp 165-201. Cambridge University Press.
- Labov, W. (1981). *Resolving the Neogrammarian controversy*, in *Languages* Vol. 57. pp267-309. Linguistic Society of America.
- Labov, W. (1972). *Sociolinguistic patterns*. Philadelphia. University of Philadelphia Press
- Lakoff, G. (1993). *Cognitive phonology*. In: Goldsmith J. (ed) *The last phonological rule: Reflections on constraints and derivations*. University of Chicago. P. 117-45.
- Langacker, R. (1987). *Foundations of cognitive grammar. Vol I. Theoretical prerequisites*. Stanford University Press.
- Lindblom, B. (1990). *Explaining phonetic variation. A sketch of the H&H theory*. In: Hardcastle & Mandal (eds) *Speech production and modelling*; Amsterdam: Kluwer academic publishers. 403-439.
- Mcmahon, A. (1994). *Understanding language change*. University press, Cambridge.

- Maundu, P. (1980) Sound change and the reconstruction of Kikamba consonant sounds in natural generative framework. Unpublished thesis, University of Nairobi.
- Mesthrie, R. et al (2000). *Introducing sociolinguistics*. Edinburgh University Press.
- Meyerhoff, M. (2006). *Introducing sociolinguistics*. Routledge. USA.
- Milroy, L. (2004). *Social networks* In: *The handbook of language variation and change*, J. K chambers et al (eds) Oxford. Blackwell publishing PP 16-20
- Milroy, L. and Gordon B. (2003). *Sociolinguistics: Methods and interpretation*. Blackwell publishing Limited.
- Milroy, L. (1989). *Language and social networks*, (2<sup>nd</sup> edition). Oxford. Basil Blackwell
- Moore, E. (2002). (ed) *Analysing older English: Studies in English language*. Cambridge. Cambridge University press.
- Mugenda, G. (2008). *Social science research: Theory and principles*. Kijabe Printing Press.
- Mugenda, O. & Mugenda, A. (1999). *Research methods: Quantitative and qualitative approaches*. Acts Press.
- Muthwii, M. (1994). Variability in language use: A study of Kalenjin speakers of English and Kiswahili in Kenya. Unpublished PhD Thesis. University of Anglia, Norwich.
- Mwihaki, A. (1998). Loan word nativization: A generative view of the phonological adaptation of Gĩkũyũ loan words. Unpublished PhD thesis. Kenyatta University
- Njoroge, M. (2006). Linguistic variation in spoken English as used by teachers in Kenyan primary schools. Unpublished PhD thesis, Kenyatta University.
- Nathan, G (2008). *Phonology: A cognitive grammar introduction*. John Benjamins publishing company. Philadelphia.

- Nurse, D. and Heine, B. (2000). (eds) *African languages: An introduction*. Cambridge University Press.
- Nurse, D. (1985). *The Swahili: Reconstructing the history and language of an African society, 800-500*, Pennsylvania press.
- Orodho, J. (2004). *Techniques of writing proposals and reports in education and social sciences*. Nairobi Masola Publishers.
- Pierrehumbert, J. B. (2001). *Exemplar dynamics: Word frequency, lenition & contrast*. In: J. Bybee & P. Hopper (eds) *Frequency and the emergence of linguistic structure*. Amsterdam: John Benjamins, 137-157.
- Stockwell, P. (2002). *Sociolinguistics: A resource book for students*. Routledge. London.
- Tagliamonte, S. (2006). *Analysing sociolinguistic variation: Real and apparent time*. Cambridge University Press. Cambridge
- Trudgill P. (2002). *Sex, covert prestige and linguistic change in the urban British English of Norwich (2nd edition)*. *Language in Society* 1, pp179-95
- Trudgill, P. (1983). *Sociolinguistics* (2<sup>nd</sup> edition). Harmond Sworlth Penguin.
- Trudgill, P. (1974). *The social differentiation of English in Norwich*. Cambridge University Press.
- Waithera, C. (2006). Phonological variation in the Gĩkũyũ spoken by Kamba traders in Thika district. Unpublished *M.A thesis*, Kenyatta University
- Wanyoike, K. (2002). Morphophonological analysis of the Gĩkũyũ verbal affixes within Lexical Phonology. Unpublished M.A thesis, Kenyatta University.
- Wardhaugh, R. (2010). *An introduction to sociolinguistics*. (6<sup>th</sup> edition). Basil Blackwell Ltd.
- Wardhaugh, R. (1986). *An introduction to sociolinguistics*. Basil Blackwell Ltd.
- Wardhaugh, R. (1977). *Introduction to linguistics*. McGraw-Hill Inc. USA.
- Zeller, C. (1997). "The investigation of sound change in progress: /æ/ and /e/ in Midwestern American English". *Journal of English linguistics*. 25:142-155.

**APPENDIX (1) – Section 1****BACKGROUND INFORMATION**

- 1) Your name (optional) \_\_\_\_\_
- 2) Your sex (tick where applicable)  
Male   
Female
- 3) Your age bracket (tick where applicable)  
Adolescent (12-19 years)   
Adult (30-50 years)   
Old age (55-75 years)
- 4) The highest level of education that you have attained (tick where applicable)  
Primary   
Secondary   
Tertiary
- 5) Place of birth (tick where applicable)  
Within Mathīra   
Outside Mathīra
- 6) Place of residence (tick where applicable)  
Within Mathīra   
Outside Mathīra

## APPENDIX (1) Section 2

## QUESTIONNAIRE FOR THE PARTICIPANTS

Please answer the following questions verbally.

1) District yanyu itagwo atĩa? \_\_\_\_\_

(What is the name of your district?)

2) Mündũ ũrĩ mbeca nyingĩ tũmwĩtaga gĩtonga. Mündũ ũtarĩ kĩndũ eetagwo atĩa? \_\_\_\_\_

(A person with a lot of money is said to be rich. What do we call one who has nothing?)

3) Mündũ ũgwĩciragia maündũ mega nĩ mūrata waku. Īĩ mündũ ũgwĩciragia ũũru? \_\_\_\_\_

(A person who thinks well of you is your friend. What about one who thinks ill of you?)

4) Mündũ angĩkorwo ndarĩ mbeca kana indo iria ingĩ ibataranagia eragwo ee na kĩ? \_\_\_\_\_

(What do we call a state in which one has neither money nor the basic things?)

5) Mũtumia ũtarĩ na ũhooti wa kũgĩa ciana eragwo nĩ kĩĩ? \_\_\_\_\_

(What name do we call a woman who cannot conceive or give birth?)

6) Rũthingo rũmwe rwĩtagwo rũthingo. Īĩ cĩĩrĩ nyingĩ cĩĩtagwo atĩa? \_\_\_\_\_

(One wall is referred to as a wall. What about when they are several?)

7) Hindĩ irĩa kũrĩ na kĩbii kana kĩnundu tuugaga kwĩ na kĩĩ? \_\_\_\_\_

(How do we describe that moment when there is mist?)

8) Hĩndĩ irĩa kũrĩ nduma tuugaga nĩ ũtukũ. Īĩ rĩrĩa kũrĩ ũtheri? \_\_\_\_\_

(When there is darkness, we say it is night. What about when there is light?)

9) Harĩ ria rĩmeraga mũgũnda, rĩtambagĩra na rungu na igũrũ rĩhaana ta nyeki, tũrĩtaga atĩa? \_\_\_\_\_

(What do we call the weed that grows underground and it resembles grass?)

10) Mündũ ũraigwa ta agũthiũrũrũkĩrwo eragwo araigwa kĩĩ? \_\_\_\_\_

(What is it that a person who is dizzy feels?)

11) Mündũ angĩrũgama haha (pointing in front), tuugaga ee mbere yakwa. Ĩĩ arĩ haha tuugaga e ha? \_\_\_\_\_ (pointing behind).

(If a person stands here (pointing in front), we say he is standing in front of. What about if he stands here (pointing behind)?)

12) Mündũ ũinamaga akĩarĩria ũngĩ tondũ wa gũconoka eragwo ena kĩĩ? \_\_\_\_\_

(What makes one to face down when being talked to as he cannot face the one talking to him?)

13) Mundũ angĩtemwo auraga kĩĩ? \_\_\_\_\_

(When one is cut, what oozes out?)

14) Mundũ angĩgĩa twana twĩrĩ hamwe tuugaga nĩ twa kĩĩ? \_\_\_\_\_

(What do we call two babies who have been born by the same mother at the same time?)

15) Hĩndĩ ĩrĩa kwĩna haro bũrũri-inĩ kwĩragwo kwĩna hahũ. Ĩĩ rĩrĩa gũtarĩ haro tuugaga kwĩ na kĩĩ? \_\_\_\_\_

(When there is war in a country we say there is nervousness. What about when there is no war.)

16) Kũũrĩa (up) tuugaga nĩ igũrũ. Ĩĩ gũkũ (down) tuugaga nĩ kũũ? \_\_\_\_\_

(There (pointing up) we say is heaven. What about here (pointing down)?)

17) Rĩrĩa kũrĩ ũtũkũ tuugaga kũrĩ na nduma. Ĩĩ rĩrĩa kũrĩ mũthenya tuugaga kũrĩ na kĩĩ? \_\_\_\_\_

(During the night, we say there is darkness, what about when it is day time?)

18) Mũtumia wĩna kaana getagwo Kamau tũmwĩtaga nyina wa Kamau. Ĩĩ mũthuuri wĩna kaana getagwo Kamau tũmwĩtaga atĩa? \_\_\_\_\_

(A woman who has a child known as Kamau is known as Kamau's mother. What about if it is a man? )

19 Harĩ nyoni cionekaga igĩthiũrũkana hĩndĩ ãrĩa mbura ãrĩ hakuhĩ kuura, ciĩtagwo atĩa?

\_\_\_\_\_

(What name is given to the group of birds that are seen playing just before a downpour?)

20) Harĩ nyoni ithonjaga mũno ikĩnegenaga, ciĩtagwo atĩa? \_\_\_\_\_

(What name is given to a type of birds that are very noisy?)

21) Ngai akoohera andũ mehia nĩ kũmaiguĩra kĩĩ? \_\_\_\_\_ (God will forgive people due to his \_\_\_\_\_)

22) Mbembe nĩgetha ituĩke mũtu nĩkĩ ciĩkagwo? \_\_\_\_\_

(What is done to make maize flour from maize seeds?)

23) Mũndũ angĩruta wĩra mũno aumaga maĩ mwĩrĩ-inĩ. Maĩ macio metagwo atĩa?

\_\_\_\_\_

(When one overworks, he produces a watery substance. What do we call this substance?)

24) Harĩ tũnyamũ tũhaana thigiriri no nĩ twa gĩĩri tuumaga irimainĩ na tũngĩrũma mundũ nĩaiguaga ruo mũno. Twĩtagwo atĩa?

(What do we call the small brown ants that live underneath and their bite is very painful?)

25) Kĩroboto gĩĩtagwo atĩa na rĩtwa rĩngĩ ? \_\_\_\_\_

(What is the other name given to a flea?)

26) Igongona rĩa mũndũ akĩhikania tũũrĩtaga ũhiki. Ĩ igongona rĩa mũndũ agĩthikwo tũũrĩtaga atĩa? \_\_\_\_\_

(The ceremony of one who is marrying is called a wedding. What about the ceremony during which one is being buried? \_\_\_\_\_)

27) Ũngiumbutha mwaki harĩ tũnyamũ tuumaga turametameta, twĩtagwo atĩa? \_\_\_\_\_

(What do we call the sparks that are produced by fire?)

28) Mündũ ũrĩ njarũmi kana mwanya haha magego-inĩ ma mbere eragwo ena kĩĩ? \_\_\_\_\_

(What is referred to by the gap between the front teeth?)

29) Mũirĩtu ũtarĩ wonana kĩmwĩrĩ na mündũ mūrũme etagwo atĩa? \_\_\_\_\_

(What is a virgin referred to as?)

30) Mündũ wĩthahĩtie eragwo ena kĩĩ? \_\_\_\_\_

(What is it that one who has defiled himself has?)

31) Rĩtwa rĩngĩ rĩa njiko nĩ rĩrĩkũ? \_\_\_\_\_

What is the other name for a charcoal jiko?

32) Ungĩngora njikarĩire gĩtĩ, nĩũrenda gũikarĩra na hatirĩ na bathi njiganu ũngĩnjĩra atĩa?

\_\_\_\_\_

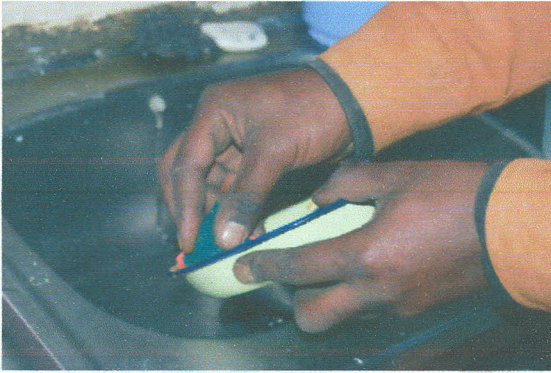
(If you found me seated and you want me to create some space for you to sit, what would you tell me?)

33) Tandarĩra kuuma imwe nginya ithano? \_\_\_\_\_

(Please count from one to five?)

### APPENDIX (1) Section 3

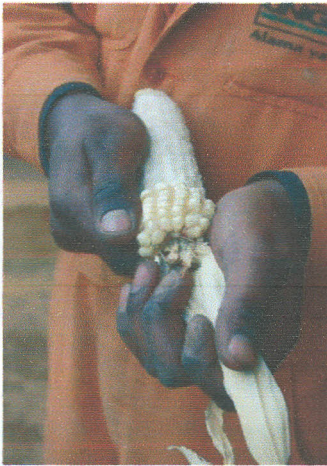
Mbica ici cirī haha mūhuro nī cia andū magīka maūndū matiganīte ona indo itiganīte. Tacigwete. (The following are pictures of people involved in various activities and also various items. Please read them).



1



2



3



4



5



6



7



8



9



10



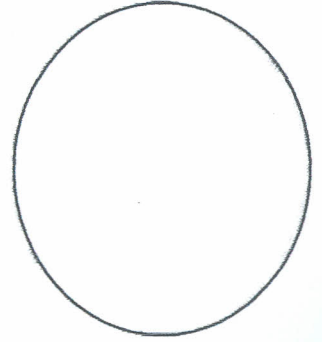
11



12



13



14



15

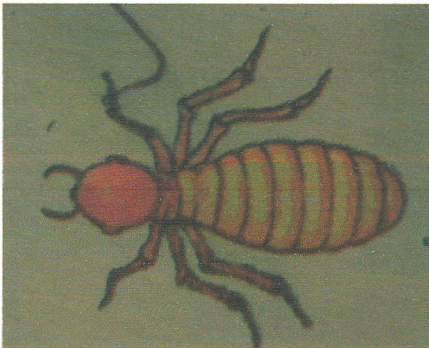


16

C2



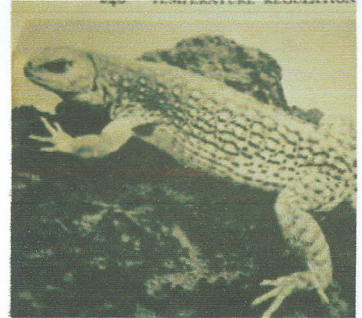
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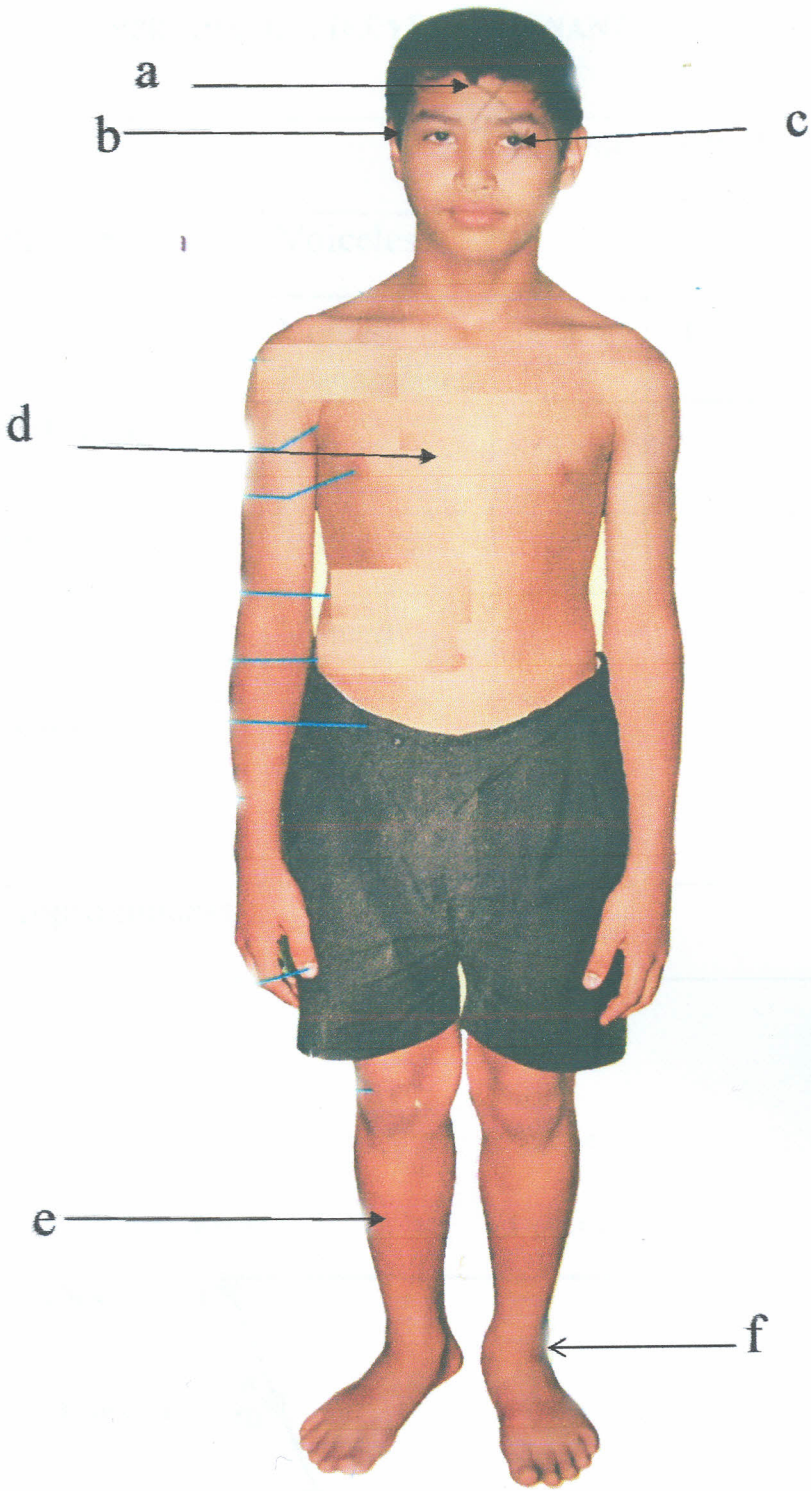
18



19



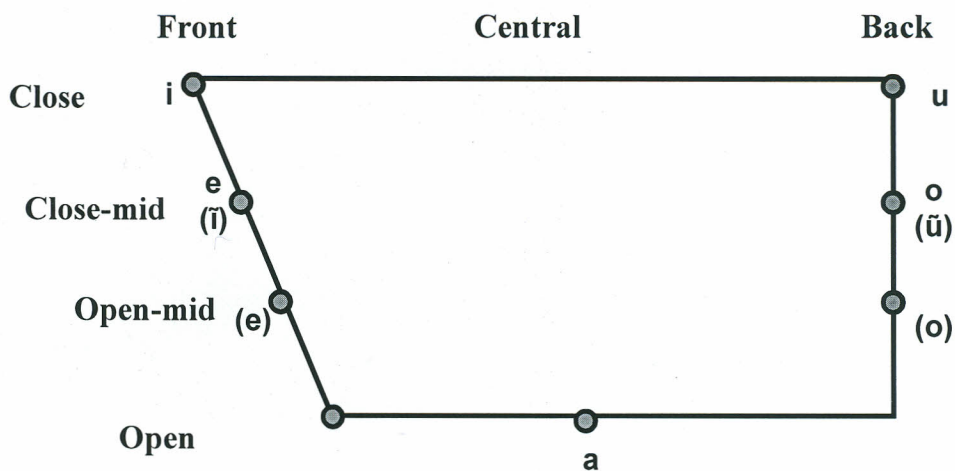
20



## APPENDIX (II) GĪKŪYŪ CONSONANTAL AND VOWEL PHONEMES

		Bilabial	Dental/ Alveolar	Palatal	Velar	Glottal
Plosives	Voiceless		t		k	
	Voiced Prenasalised	<sup>m</sup> b	<sup>n</sup> d		<sup>n</sup> g	
Affricates				d <sub>ʒ</sub>		
Fricatives	Voiceless		θ	s		h
	Voiced				ɣ	
Nasals		m	n	ɲ	ŋ	
Liquid			r			
Approximants				j	w	

## Vowels



Adapted from : Dwyer, (1997)

## APPENDIX (III) MATHĪRA CONSONANTAL PHONEMES

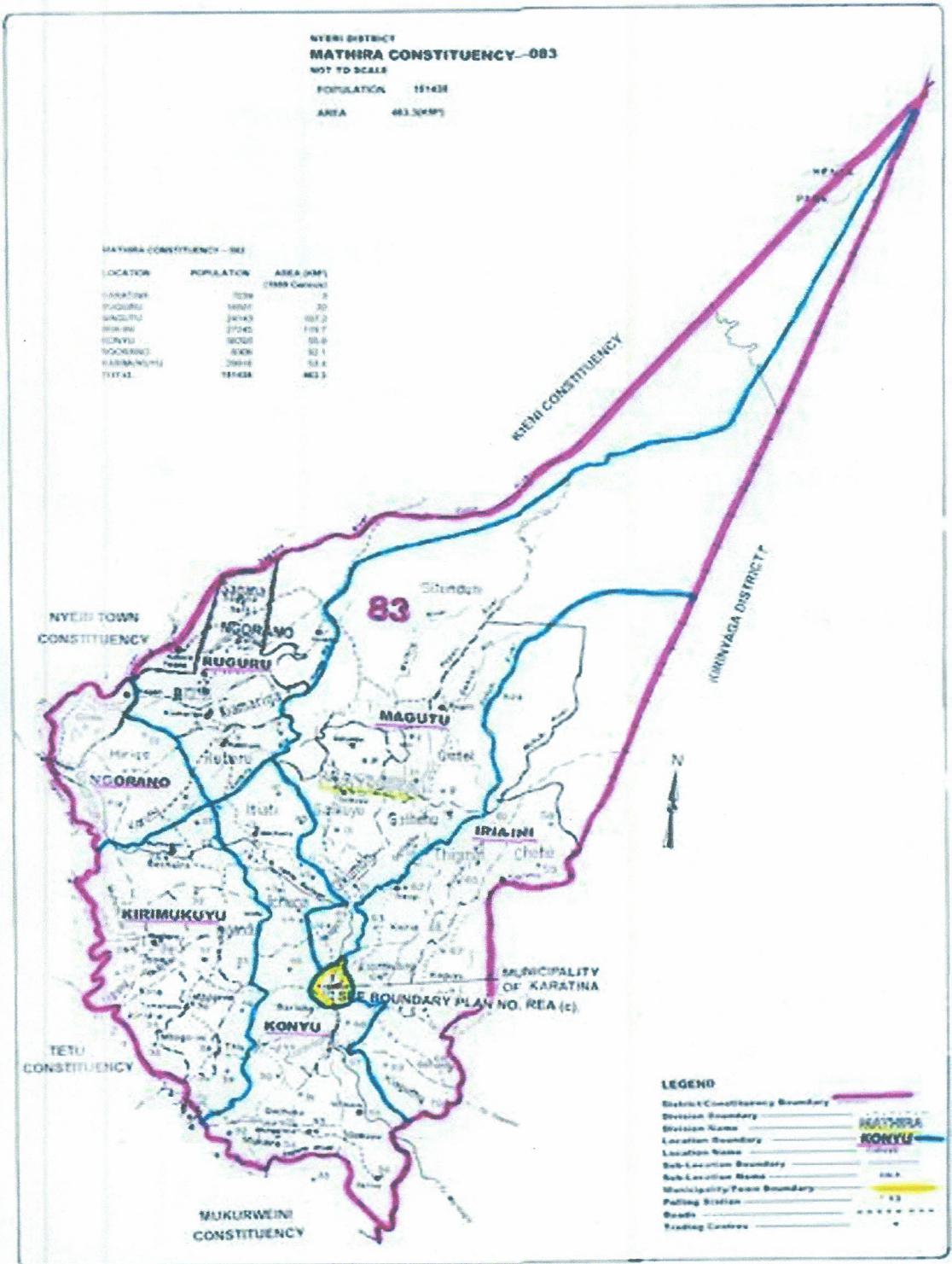
		Bilabial	Dental/ Alveolar	Palatal	Velar	Glottal
Plosives	Voiceless		t		k	
	Voiced Prenasalised	<sup>m</sup> b	<sup>n</sup> d		<sup>ŋ</sup> g	
Affricates				d <sub>3</sub>		
Fricatives	Voiceless			s		h
	Voiced	b	ð		ɣ	
Nasals		m	n	ɲ	ŋ	
Liquid			r			
Approximants				J	w	

*Adapted from : Dwyer, (1997)*

**APPENDIX (IV): FREQUENCY OF OCCURENCES OF VARIANTS BY THE RESPONDENTS**

Respondent's number	Code	[ð]		[θ]	
		Frequency	Percentage	Frequency	Percentage
1	FCP	65	95.7%	2	2.9%
2	FBT	1	1.4%	67	98.6%
3	MCP	62	91.3%	6	8.7%
4	MBS	8	11.6%	60	88.4%
5	MCS	60	88.4	8	11.6%
6	FCS	0	0%	68	100%
7	MBT	2	2.9%	66	97.1%
8	FBT	0	0%	68	100%
9	FBP	9	13.0%	59	87.0%
10	MBP	56	82.6%	12	17.4%
11	FCP	53	78.3%	15	21.7%
12	MAS	0	0%	68	100%
13	MCP	65	95.7%	3	4.3%
14	MAP	1	1.4%	67	98.6%
15	FAP	1	1.4%	67	98.6%
16	FCT	11	15.9%	57	84.1%
17	FBP	1	1.4%	67	98.6%
18	MBP	12	17.4%	56	82.6%
19	FBS	18	26.1%	50	73.9%
20	FAT	0	0%	68	100%
21	FAP	1	1.4%	67	98.6%
22	FCS	5	7.2%	62	91.3%
23	FAS	0	0%	68	100%
24	MAS	6	8.7%	62	91.3%
25	FCT	14	20.3%	54	79.7%
26	MCT	47	69.6%	15	21.7%
27	MCT	66	97.1%	2	2.9%
28	MBT	8	11.6%	60	88.4%
29	MBS	6	8.7%	62	91.3%
30	MCS	4	5.8%	64	94.2%
31	MAT	1	1.4%	67	98.6%
32	FAT	0	0%	68	100%
33	FAS	0	0%	68	100%
34	FBS	0	0%	68	100%
35	MAP	0	0%	68	100%
36	MAT	0	0%	68	100%

APPENDIX (V) MAP OF MATHIRA DISTRICT



## APPENDIX VII : RESEARCH PERMIT

OFFICE OF THE PRESIDENT  
PROVINCIAL ADMINISTRATION & INTERNAL SECURITYTelegrams: "DISTRICTER" Mathira West  
Telephone: 0612 313 140Fax:  
Email: domathirawest@gmail.com  
When replying please quote:Ref: ... KIP/EDU/WL/11/235 :THE CHIEF'S OFFICE,  
KIRIMUKUYU LOCATION,  
P.O. BOX 52,  
KARATINA  
Phone: .....Date: 14th - Jan - 2011TO WHOM IT MAY CONCERN:MRS. DAMARIS MUTHONI MAHARIA:

The above named is a student of Kenyatta University who is undertaking research on Languages. She is free to interact with the local community of Kirimukuyu location in order to assist her in obtaining results.

Please accord her all the necessary assistance.

MUNENE MATHEMUS  
CHIEF OF  
KIRIMUKUYU LOCATION