NATIVIZATION: MORPHOPHONEMIC VOWEL CHANGES OF BORROWED WORDS FROM ENGLISH LANGUAGE TO GIKUYU LANGUAGE
EVELYN MAHERO evemahero@gmail.com
Department of Literary and Communication Studies
Laikipia University, Kenya

Abstract
Language contact is a linguistic process that occurs between two or more languages. When language contact occur, the languages that are concerned may influence each other. In Kenya, English has had language contact with the Kenyan speaking communities for almost a century. This contact has led to considerable language influence of English on Kenyan ethnic languages and language varieties. Lexical borrowing between English and Gikuyu is quite prevalent. Usually, English donates the language items while Gikuyu receives. This study is an analysis of morphophonological vowel processes that English loan words undergo to fit into Gikuyu sound system. The study considered only the processes that involve vowels.

Morphophonological processes that English words borrowed by Gikuyu undergo in order to fit into the Gikuyu system have not been accounted for in language contact research. The study set out to investigate the morphophonological processes that Gikuyu loan words from English undergo to fit into the Gikuyu system. In particular, the vowel Processes that Gikuyu nouns borrowed from English undergo to fit into Gikuyu sound structure were analyzed. Natural Generative Phonology by J.B. Hooper was used as the theoretical framework of the study. The study employed a descriptive research design. Judgmental sampling procedure was used to obtain data from a random sample of fifty respondents drawn from selected professional fields in Kiharu Division of Murang’a County. The data incorporated an assortment of words from the various fields of interest: Police Service, Religion, Education, Business/Trade, Transport, Police health, Government and Law, Domesticity, Auto-motive mechanics and Building and Construction.

Interview schedule and audio recording were used to generate the data. Results indicate that Gikuyu replaces English segments with Gikuyu sounds at initial, medial or final word position. It was also noted that Gikuyu employs several processes to nativize the loan words borrowed from English. These processes were vowel insertion, epenthesis, vowel lengthening, and vowel monophthongization. The results of this study will be helpful to researchers in applied linguistics and educationists in the area of language teaching.

Key words: borrowing, loan words, morphophonemic, nativization, phonemes, segments.

Introduction
This paper focuses on the vowel changes that English loan words undergo in order to fit into Gikuyu speech system. English and Gikuyu have been in contact since the coming of the missionaries and colonial administration. English on whose words Gikuyu has heavily borrowed is the official language in Kenya and medium of instruction in education system right from primary school level to university besides being used in conducting international business and for administrative purposes. English is also the language of technology and development (Kisembe, 2003).

After Kenyan independence in 1963, the Ominde Commission (1964) recommended English to be the language of instruction in education system. Massive borrowing of lexical items from English in everyday life became important. This was as a result of the need for new knowledge
and the opportunities that English language had to offer as the only world language of politics, entertainment and technology (Crystal, 1997), also viewed to be the most prestigious language on earth and promptly a donor language (Trask, 1996).

The advancement of apprentice jobs most of which were semi-skilled crafts too enhanced the borrowing since Gikuyu lacked words to cover the western materials and values which Gikuyu speakers learnt from English to be used for such materials and values. English and Gikuyu are different as far as phonemic inventories are concerned. For instance, English has an inventory of monophthongs, diphthongs and triphthongs (Ladefoged, 1982; Roach, 1993).

There are also several consonants of various kinds (Davenport, 2005). On the other hand, Gikuyu has also an inventory of vowels and consonants of various types different from English in terms of number and quality. Furthermore, the two languages have different phonological features. For example, Gikuyu does not have word final consonants while English language does. In English, the plural marker for regular nouns is in word final position. The plural marker in Gikuyu is in word initial position.

Although several studies have been conducted on Gikuyu morphological and phonological aspects such as tone, tense and aspect, reduplication of nouns, verbs and adjectives, the morphological processes that English loans words undergo to fit into Gikuyu speech system had not been investigated prior to this research. This motivated the study. This study set to realize two objectives; to identify and describe the vowel morphophonological changes that borrowed nouns from English to Gikuyu undergo to fit into Gikuyu sound system, and, to generate morphophonological rules that govern the vowel changes of borrowed nouns from English to Gikuyu.

Literature Review
There are several scholars who have carried out studies that are related to this study especially in terms of borrowing and the theoretical framework in general. Aswani (2002) observes that there are phonological and sound changes that occur when words are borrowed from English to standard Swahili. In addition, he notes that phonological nativization makes loan words usable by rendering them pronounceable. The introduction of loan words into the lexicon of a language constitutes external linguistic change thereby calling for phonological reconstructing in order to maintain the preferred phonological structure. His work is related to the current study in that both deal with borrowing from English. However, this study was somewhat different in the sense that it investigated the vowel morphophonological processes while Aswani’s investigates the phonological level.

Bakari (1982) studied the morphophonology of Swahili dialects spoke in Kenya. He employs Natural Generative Phonology as its theoretical framework. After studying processes like vowel insertion or lengthening, he makes the conclusion that phonological processes help to preserve the original language. The study is important because it leads to an understanding of the processes in the reconstruction of loan words which the current study endeavors to describe.

Hassan (1979) notes that, vowels in loan words undergo substitution or lengthening due to their absence in the recipient language. For instance, the French vowel /eu/ is rendered as /ee/ for chauffeur (sofeer) or as /oo/ in docteur (doctoor) when borrowed into Egyptian Arabic. Vowels are also lengthened when they are in a stressed syllable. For example, there is transformation of /o/ into /oo/ in such words as galoon for “gallon”, saloon for “salon”. Sometimes no two vowels are allowed in succession without being intruded by a consonant doubling, called germination. In such
a case, loan words undergo germination to approximate the receiving language’s patterns. On such pattern is CVCVCVCCV as in Karamella from “caramel”, fanella from “funnel”

Hoffman (1991) observes that once a word has been introduced into the borrowing language, it has to follow the linguistic patterns of the host on both phonological and morphological levels, to an extent that the users are unaware of its foreignness. For example, in Egyptian Arabic, the word “munarwa” from maneuver, “warsa” from workshop and “musiika” from music underwent integration so that their foreignness is unnoticed and monolinguals use them without an urge to find an alternative for them.

Wa Mberia (1992) looked at a segmental morphophonology of Kitharaka noun and verb. Though this study investigated loan words from English to Gikuyu, while Mberia (ibid) bases his analysis on morphophonology on Kitharaka noun and verb, his study is closely related to this study. Mberia (ibid) is of interest to this study mainly from the theoretical point of view because the two studies employed Natural Generative Phonology as their theoretical framework.

Mutahi (1983) deals with sound changes and classification of the dialects of South Mount Kenya Region. His study is based on classification of sounds and the sound changes that he considers are not based on borrowed words. However, the two studies used Natural Generative Phonology as their theoretical underpinning. During borrowing of English words into Brazilian Portuguese, numerous phonological processes take place and several phonological changes occur. Naim (1998) reports that although non pharyngealized consonants occur in Beirut Arabic, when consonants are borrowed from Italian and French they are pharyngealized whenever they occur preceding long low vowels. This is due to the distinction that speakers make between the vowels in these foreign words and the local /a/ that occurs after pharyngeal.

According to Smeaton (1973), integration is the assimilation of regularly used foreign items to the patterns of the receiving language at the phonological or morphological levels. To adapt to the phonological patterns of the borrowing language, loan words undergo processes of sound alteration, addition, omission and shifting due to the inherent sound patterns of the language. They also adapt to the morphology of the recipient language in that they go into their noun class system according to their meaning, lack of an overt prefix of a particular class or the phonological shape of the initial syllable of the loan word.

When producing a loan word, speakers attempt the closest proximation of the model because the source language and the recipient languages phonological patterns do not correspond identically. Speakers have to exercise sound alteration because either the phonemes do not exist in their language, or there are more than one possible phonemic realization for one sound. Paradis and Lancharte (1997) studied French loan words in Fula a language spoken in Mauritania and Senegal. They found out that the loan words adopted foreign phonological sequences according to what they call repair strategies which include, breaking up French consonant clusters by cluster simplification or vowel insertion and denasalization of French nasals.

Sure (1993) in his paper “Grammatical and phonological integration of English loan words in Dholuo reports about integration of words into another recipient language of grammatical levels. But he does not look at the processes that are at work during adaptation. Such processes will be considered in this study. Sure (ibid) credits borrowing as the one way through which natural languages develop. He reports that borrowing involves adoption of a foreign word and transforming it to fit the new system to enable them participates effectively; that is, they undergo a kind of assimilation and nativization.
Theoretical Framework

Natural Generative Phonology (NGP) was adopted for this study. NGP is part of the Generative phonology (GP) which Jean with the effort of Noam Chomsky came up with to describe the morphophonemics of Modern Hebrew. NGP was developed in the 1970s by Venneman and Stampe to examine the features and the natural character of segment classes and the processes that apply to them. This theory was chosen for this study because according to Hooper (1976), it will enable the researcher to make concrete prediction about sound of natural languages. The theory examines interaction between the two levels of linguistic study that is phonology and morphology.

NGP came up as a solution to the abstractness of generative phonology which was incapable of grasping what is natural and universal. Therefore, NGP focuses on the relationship between abstract underlying representations and surface structures: that is, derivations rules, alterations and underlying forms.

The constraints propagated by NGP are as follows:

a) The true generation condition
b) The no ordering condition
c) The strong naturalness condition

These three tenets of NGP ensure that NGP operates within a number of principles, it states that a form that is posited as an underlying form ought to have surface manifestations if it is to be accepted as a correct form. These three principles ensure that NGP operates within a number of principles. One of them states that a form that is posited as an underlying form ought to have surface manifestations in it, if it is to be accepted as a correct form.

The True Generation Condition emphasizes that the rules that native speakers formulate about their language relate surface forms to other surface forms and as such, rules cannot be abstract. Therefore this implies that NGP allows neither abstract segments nor abstract rules in morphology and phonology (Hayes, 2009). Word final phonation through vowel insertion in Gikuyu would be perfectly accepted as a process in NGP since it expresses a true generalization; this means that all word final positions are made of vowels.

No-Ordering retracts extrinsic ordering of rules so that rules apply sequentially and to any form that meets their structured descriptions. The no-ordering condition was applicable because this study formulated phonological rules to explain the changes sounds went through when loan words enter Gikuyu. This was of value in this study especially in examining the morphophonemics of borrowed words in Gikuyu by posing that when a certain rule has to apply and special rules or parts of rules always apply before the general rules.

The strong naturalness condition requires that there be a relationship between the underlying the surface forms showed the changes that are taking place. NGP holds that the phonological representation of the lexicon, and the idiosyncratic phonetic properties of the morpheme be related in a non-arbitrary way. This was an important condition in the comparison of loan words in Gikuyu from English written in gloss and then phonetically transcribed.

NGP has categories of rules of phonology deemed very important for this study. These rules include:

1. Phonetically conditioned rules (P-rules)
2. Morphophonemic rules (MP-rules)
3. Via rules
The phonetically conditioned rules refer to phonetically motivated rules. These takes into account any phonetic information in their environments such as syllable boundaries. These rules are not only natural but also universal, they are regular and productive. They apply whenever their structural description is satisfied. They consist of natural rules such as assimilation rules, strengthening and weakening rules. For example, as Hyman (1973; 156-161) reports such rules include the tendency of velar non-contiguous sound/s/ is likely to palatalize when it comes before a high front vowel /i/ in English. These rules were useful in identifying the morphophonemic rules. That the English loanwords abide by to fit into Gikuyu.

The second category which is the morphophonemic rules take into account morphological and syntactic information such as morpheme boundaries, morpheme classes, and lexical categories and they are language specific. For instance, the regular morpheme marker for the plural in the English language is in word final position as in ‘schools’ with ‘s’ denoting the plural. In Gikuyu, the plural morpheme marker is in word initial position denoting the plural.

The third category of rules in NGP is that of via rule. These rules relate one lexical item to another without having to claim that one is derived from the other. They express phonological relations between lexical items. For example, /ai/-/i/ relating the words ‘divine’ and ‘divinity’. The forms ‘divine’ and ‘divinity’ are entered in their full form in the lexicon and assumed to be linked by the via-rule above.

Results and Discussions

Vowel Changes

English vowel system changes greatly from that of the Gikuyu as observed in the study. English has three categories of vowels namely monophthongs, diphthongs and triphthongs. Gikuyu has only 7 vowels. Vowels that share similar feature values substituted each other in the study in order to fit into Gikuyu. These changes include:

- Vowel insertion
- Vowel deletion
- Vowel substitution
- Vowel lengthening
- Vowel monophthongization

Vowel Insertion

Vowel insertion is a linguistic process where a vowel is added to the borrowed word. Vowel insertion was realized to be motivated by both phonological and morphological changes in some loan words in Gikuyu borrowed from English.

The MP-rules discussed in the theoretical framework motivated morphological changes in some loan words in Gikuyu from English. The data discussed below shows vowel insertion in loan words in Gikuyu from English due to morphological conditioning. For example, English words with CVC and CCV syllable structure are reorganized to a pattern acceptable by Gikuyu speech system by inserting vowel word medially and final position. This process of resyllabification involves handling clusters such as CCV that are not recognized in Gikuyu to make them acceptable. Examples shown below illustrate how English words loaned to Gikuyu are re-syllabified to fit into Gikuyu structure.
In the above examples, vowels are inserted word medially or in final word position. This is to ensure that the borrowed words fit into the phonological structure of the recipient language. Hence the morphology of the borrowed word is altered. The rule can be explained as a vowel being inserted in between consonants and final positions in words: C-V-C.

**Vowel Epenthesis**

This is a process of loan naturalization in which a vowel is added to a word. Some Gikuyuloans from English are prefixed with a vowel in order to meet Gikuyu’s structural requirements. Examples are given below.

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>/buk/</td>
<td>ibuku</td>
<td>[iβuku]</td>
</tr>
<tr>
<td>Tank</td>
<td>/tӕŋk</td>
<td>itangi</td>
<td>[itaŋi]</td>
</tr>
<tr>
<td>Court</td>
<td>/kɔ:t/</td>
<td>igooti</td>
<td>[igo:tı]</td>
</tr>
</tbody>
</table>

The vowel [i] is prefixed in the above examples to modify loans. Just like English it was observed that some loan words in Gikuyu from English can be both prefixed vowel /i/ in the examples above denote number in Gikuyu. It is a singular marker. *Itangi* means tank.
Vowel Lengthening
This is a phonological process which refers to making vowel sounds longer than they actually are. When a vowel is lengthened it is replaced with a sound with two segments even though the two segments are considered one. Some words borrowed from English to Gikuyu show a process of vowel lengthening. The data given below verifies the position state above

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brush</td>
<td>/brʌʃ/</td>
<td>buracii</td>
<td>[µurαtʃi:]</td>
</tr>
<tr>
<td>Screw</td>
<td>/skru:/</td>
<td>thukuruu</td>
<td>[θukuru:]</td>
</tr>
<tr>
<td>Chimney</td>
<td>/tʃimni/</td>
<td>Cuminii</td>
<td>[tʃumuni:]</td>
</tr>
<tr>
<td>Clutch</td>
<td>/kʌtʃi/</td>
<td>kiracii</td>
<td>[kiraʃi:]</td>
</tr>
</tbody>
</table>

From the examples above, [i] \longrightarrow [iː] ↦ #

Vowel Monophthongization
This is a phonological process in which the glide of the diphthong [ai] undergoes weakening or is completely lost (Wise 1933, Edgerton 1935), monophthongization are most frequent in open syllables or before voiced consonants (Evans 1935; Fridland 2003; Labov, Ash & Boberg 2006). Segments in the donor language that are not recognized by the recipient one are substituted with those that are recognized due to the difference in vowel inventories of English and Gikuyu languages. Therefore English vowels that are not recognized in Gikuyu are substituted with those that have similar feature values in order to conform to Gikuyu morphology. Illustrated below are words that demonstrate the process of vowel monophthongization.

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
<td>/naut/</td>
<td>nooti</td>
<td>[no:tʃi]</td>
</tr>
<tr>
<td>Hotel</td>
<td>/hautel/</td>
<td>hoteri</td>
<td>[hoterʃi]</td>
</tr>
<tr>
<td>Kilo</td>
<td>/kilau/</td>
<td>kiro</td>
<td>[kiro]</td>
</tr>
<tr>
<td>Diploma</td>
<td>/diplauma/</td>
<td>ndiburoma</td>
<td>[ŋdiβuroma]</td>
</tr>
</tbody>
</table>

In the above English words, with the diphthong /au/ had the sound substituted with the back mid vowel /o/ as already exemplified. The rule therefore becomes:

Rule: /au/ \longrightarrow /o/cons-cons

In a different category of data, English words with /æ/ had it substituted with /a/ when the words are adopted to Gikuyu. This is shown below.

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrot</td>
<td>/kæt/</td>
<td>karati</td>
<td>[karati]</td>
</tr>
<tr>
<td>Clamp</td>
<td>/klæmp/</td>
<td>karambi</td>
<td>[krambi]</td>
</tr>
<tr>
<td>Band</td>
<td>/bænd/</td>
<td>mbandi</td>
<td>[mbandi]</td>
</tr>
<tr>
<td>Badge</td>
<td>/bændʒ/</td>
<td>mbanji</td>
<td>[mbanʃi]</td>
</tr>
<tr>
<td>Tractor</td>
<td>/træktar/</td>
<td>karagita</td>
<td>[karagita]</td>
</tr>
<tr>
<td>Garage</td>
<td>/ɡærə:ʒ/</td>
<td>ngaranji</td>
<td>[ŋaranʃi]</td>
</tr>
<tr>
<td>Calendar</td>
<td>/kælanda/</td>
<td>Karendra</td>
<td>[karendra]</td>
</tr>
<tr>
<td>Gallon</td>
<td>/ɡælan/</td>
<td>ngarani</td>
<td>[ŋarani]</td>
</tr>
<tr>
<td>Veranda</td>
<td>/væranda/</td>
<td>baranda</td>
<td>[bæranda]</td>
</tr>
</tbody>
</table>
The rule can be written as:

\[
[\text{æ}] \rightarrow [o]/\text{cons-cons}
\]

When English words bearing the open central vowel /u/ are borrowed into Gikuyu, the vowel /ɻ/ is substituted with the open low front vowel /a/. This change process is illustrated in the data given below.

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge</td>
<td>/dʒʌdʒ/</td>
<td>njanji</td>
<td>[ndʒandʒi]</td>
</tr>
<tr>
<td>Cupboard</td>
<td>/kʌbɔd/</td>
<td>kabati</td>
<td>[kaβati]</td>
</tr>
<tr>
<td>Clutch</td>
<td>/klʌʧ/</td>
<td>kirachii</td>
<td>[kirasʧi]</td>
</tr>
<tr>
<td>Brush</td>
<td>/brʌs/</td>
<td>buracii</td>
<td>[braʧi:]</td>
</tr>
<tr>
<td>Rubber</td>
<td>/rʌbə/</td>
<td>raba</td>
<td>[raba]</td>
</tr>
<tr>
<td>Jug</td>
<td>/dʒʌg/</td>
<td>njagi</td>
<td>[ndʒagi]</td>
</tr>
<tr>
<td>Governor</td>
<td>/gʌnə/</td>
<td>ngabana</td>
<td>[ŋaβana]</td>
</tr>
<tr>
<td>Duster</td>
<td>/dʌsta/</td>
<td>ndacita</td>
<td>[ndatʃita]</td>
</tr>
<tr>
<td>Bus</td>
<td>/bʌs/</td>
<td>mbaathi</td>
<td>[mβa:ði]</td>
</tr>
</tbody>
</table>

The rule becomes \([u] \rightarrow [a]/\text{cons-cons}\)

Jones (1967) reports that many words in English with a schwa sound /ə/ which is a relatively short vowel of intermediate quality and occurs in unstressed syllables in English words borrowed from Gikuyu, the sound is substituted with the open low front vowel /a/. This is illustrated in the examples below.

<table>
<thead>
<tr>
<th>English</th>
<th>Transcription</th>
<th>Gikuyu Orthographic</th>
<th>Gikuyu Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>/træktə/</td>
<td>karagita</td>
<td>[karagita]</td>
</tr>
<tr>
<td>Number</td>
<td>/nʌmbə/</td>
<td>namba</td>
<td>[namβa]</td>
</tr>
<tr>
<td>Pastor</td>
<td>/paːstə/</td>
<td>bathita</td>
<td>[βaðita]</td>
</tr>
</tbody>
</table>

The rule becomes: \([\delta] \rightarrow [a]/\text{- #}\)

The rule states that shwa [ə] becomes [a] in word final position.

**Conclusions**

The results of this study portray a sociolinguistic situation in Morphophonemics. Language borrowing is an aspect of language contact situation where languages enrich each other. The Agikuyu have been in contact with the English language for a long time and thus has borrowed a lot from English language. English may have not borrowed from Agikuyu because of one principle of bowing whereby a less prestigious language borrows from a more prestigious language. However it could also be due to the fact that the English speakers came with new nouns that needed to be accommodated in Gikuyu language, having no alternative the Gikuyu speakers deliberately decided to nativize the structure English language words discussed above in terms of vowels to fit in to the Gikuyu language structure. Nativization is a process where speakers of a language try to creatively manipulate the words of another language in terms of structure to fit in to the structure...
of the borrowing language mainly to ease pronunciation, it is actually a positive process of creativity in language use in a language contact situation. It would be difficult for the Agikuyu to pronounce the above words without the vowel changes that have taken place on the words.

REFERENCES


Hassan, A. F. (2018) Studies in Arabic linguistics Arabic in contact. DOI: 10.1075/sal.6.08has


