

# Vowel Epenthesis as a Parameter Setting Strategy in Gichuka Loanwords

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## Abstract

The study of loanwords has played an important role in the development of phonological theories and in cross-linguistic studies in recent years and loanword phonology presents a rich empirical ground for examining any topical question in field of phonology. Loanwords help linguists to find out more about native phonology. This is especially so in studying the role of native phonological contrasts in phonological processes. This study looked at vowel epenthesis as a phonological process used to adapt lexical items borrowed from English to Gichuka. The data was collected in Tharaka-Nithi County using interviews, naturalistic observation and focused group discussions. The sample was based on ten domains namely: education, agriculture, clothing, electrical goods and technology, religion, health, trade and industry, household goods, food and administration. The theory of Government Phonology was used in the data analysis. The results show that vowel epenthesis is a parameter setting strategy in adapting lexical items that Gichuka has borrowed from English. This paper sheds light on the applicability of the theory of Government Phonology in the nativisation of loanwords.

**Keywords:** Loanword, Government Phonology Theory, Parameter, Vowel Epenthesis.

## 1. Introduction

In the early twentieth century, Ferdinand de Saussure distinguished historical (diachronic) from non-historical (synchronic) approaches to language study. From a diachronic perspective, language is a continually changing medium. Changes in language occur in the phonological, lexical, morphological, syntactic and semantic aspects. Thus, all aspects of language structure are subject to change but the most noticeable changes affect pronunciation and vocabulary (Antill, 1972; Aitchison, 1993).

Lexical changes occur in a number of ways. The part of speech in which a word belongs may change. There may be addition of new words through borrowing and through other word formation processes. A word may also stop being used and is lost or becomes obsolete. When a word is lost, it is not striking because it fades away as a result of it not being used. What is usually striking is when a word is added to a language (Fromkin *et al*, 2003).

The commonest way in which words are added into a language is through borrowing. Borrowing occurs when one language adds a word or a morpheme from another language to its own lexicon. There are sociolinguistic motivations for borrowing such as need (where there exists a lexical gap in the receptor language), prestige and language contact. Gichuka has come into contact with English, Kiswahili and other neighbouring languages and it has borrowed lexical items from these languages.

There are four important characteristics of borrowing (Aitchison, 1993). First, when lexical borrowing takes place, the detachable elements which will not affect the structure of the borrowing language are the ones that are taken over. Secondly, the adopted items tend to be changed to fit in with the structure of the borrower's language. The words are nativised through phonological and morphological processes, among others. Thirdly, a language tends to select for borrowing those aspects of the donor language which superficially correspond fairly closely to aspects already in its own structure. Finally, the borrowing language makes very small adjustments to the structure of its language at any one time. This has been called the 'minimal adjustment tendency' (Aitchison, 1993).

The speakers of a language make phonological adjustment so that the borrowed word fits into the phonological system of the recipient language. Phonological processes are natural in language and they are found in every language. Some of the processes are more common than others. Vowel is a commonly used process in the adaptation of English loanwords in Bantu languages. It is the introduction of extra medial or final vowel sound in the borrowed word.

## 2. Literature Review

Most of the new lexical items in a language are acquired through borrowing. Borrowing is a usual term for the process by which a language (or variety) takes on new linguistic material from another language (variety). There are several different types of lexical borrowing. Scholars have classified lexical borrowings differently (Ross, 1991; Haugen 1950; Myers-Scotton, 2002). Haugen's taxonomy of borrowed items is the most preferred because of its practical approach. Haugen (1950) came up with a typology where he identified four types of borrowed words. Borrowed words can be either loanwords, loan shifts, or loan blends.

Haugen (1950) distinguishes between loanwords (where form and meaning are copied completely) from

loan blends (words consisting of a copied part and a native part) and also loan shifts (where only the meaning is copied). The Chinese word *baibai* is a loanword borrowed from English ‘bye-bye’ and is used in the same context and meaning (Hall-Lew, 2002). The word ‘monolingual’ is a loan blend because it has a Greek prefix and a Latin root. Loan shifts can be either translations or semantic borrowings. Loan translations show replication of the structure of a foreign language, word or expression by one of the synonymous word(s) from the borrowing language. For example in German *fern sehen* literally means ‘far seeing’. It is borrowed from translated elements of television in English and television in French, the first element from Greek *telos* ‘far’ and the second from Latin *visio* ‘sight’. Semantic loans (semantic broadening) show extension of meaning of a word as a result of association with the meaning of a partly synonymous word in another language.

Concerning lexical borrowability, nouns are borrowed more easily than other parts of speech (Moravcsik, 1978). The explanations for this are that nouns are referential and one of the motivating factors for borrowing is to extend the referential potential of a language (Van Hout & Muysken, 1994). Secondly, the insertion of nouns in another language is less disruptive of the predicate argument structure. Verbs are commonly borrowed after nouns. It has been argued that verbs are difficult to borrow because of their difficult inflection. If they are borrowed, they seem to be borrowed as nouns. The receptor language employs its own denominal verbalization to turn them into verbs before using them as loanwords Moravcsik (1975; 2003). Adjectives and adverbs are in third and fourth position respectively in respect to borrowability. Field (2002) observes that agglutinative affixes are borrowed more easily than fusional affixes.

### 3. Objective of the Study

The study was guided by the following objective:

- i. To analyse the phonological processes used in adapting English loanwords into Gichuka.

### 4. Theoretical Framework

The analyses of English loanwords in this paper was done using Government Phonology Theory (GP). GP theory is a highly constrained theory based on parameters and principles. It is made up of sub-theories. Only the following sub- theories will be discussed in this paper:

- (i) the sub-theory of syllable structure
- (ii) the sub- theory of parameters
- (iii) the sub-theory of principles
- (iv) the sub-theory of government and licensing relations

#### 4.1 The Theory of ‘Syllable’ Structure

The syllable (as understood in the traditional sense) is not given any formal status in GP theory. Phonological units are regarded as consisting of sequences of Onset – Nuclear (ON) pairs. The ON sequences are represented on a tier called P<sup>0</sup>. A phonological string consists, in part, of a series of positions indicated ‘x’. The series of positions is called the skeleton (of a phonological string). Each position is referred to as a skeletal point. The skeleton is organized to a hierarchical structure known as constituent structure. The skeleton is seen as an anchoring device relating the (internal content of) segments to the constituents and the government and licensing relations that hold between them.

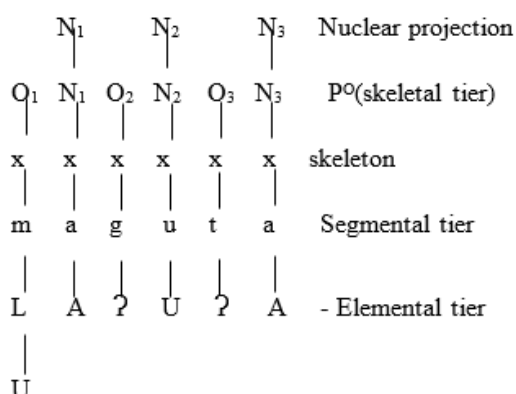


Figure 1 P<sup>0</sup> and skeletal tier adapted from Kula 2002, 53

The phonological word is divided into three constituents. These are the Onset (O), the nucleus (N) and the Rhyme (R). The Rhyme is the head of the nucleus and the nucleus nucleus is therefore the first projection of the (Cyan, 1995). An illustration of the nucleus, onset and rhyme is shown in Figure 2(a) and 2(b).



Figure 2: Onset, Nucleus, Rhyme (Ahern, 1999, p. 25)

Figure 2(a) shows the onset and Figure 2(b) shows that the left branch of every Rhyme is the nucleus constituent. The head of the nucleus is also the head of the rhyme.

In GP, all nodes can project singly or to a maximum of two nodes as illustrated in Figure 3.

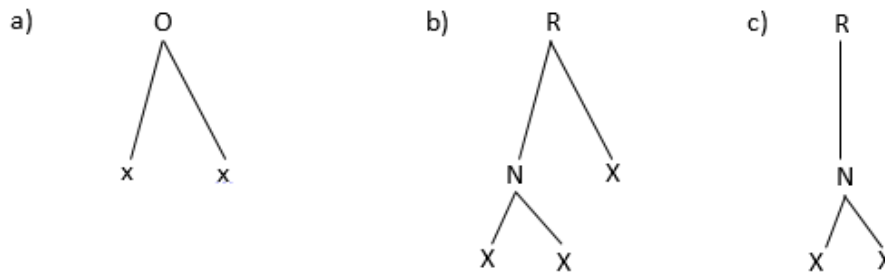


Figure 3: Maximally Projected Nodes (Ahern, 1999, p. 26).

Figure 3(a) shows a branching onset, 3(b) a branching rhyme and nuclei and 3(c) shows a branching nuclei. Vowels are typically associated to nuclei and consonants to non-nuclear positions. The coda is not a licit constituent in GP and word final consonants are syllabified as onsets followed by an empty nucleus as per the ‘coda’ licensing principle

#### 4.2 Principles in Government Phonology

The Coda licensing principle states that ‘Post nuclear positions must be licensed by a following onset.’(Kaye, 1990). The coda is therefore not a licit constituent in GP .The structure for word –final codas and word-internal codas is shown in Figure 4:

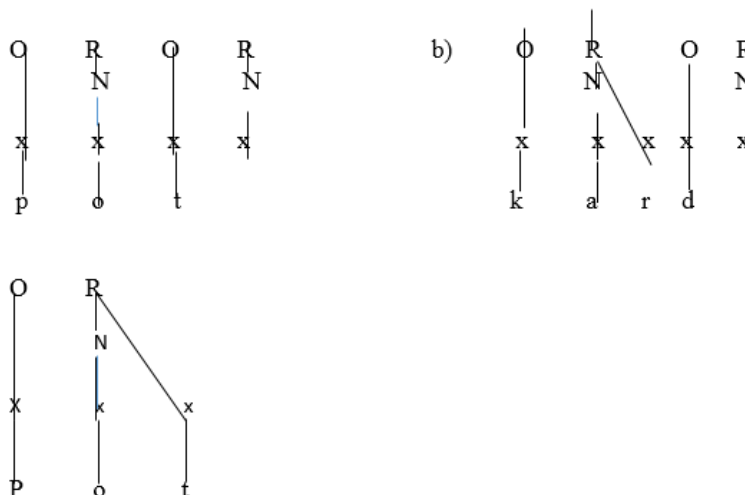


Figure 4. Permissible and Impermissible structures in GP (Kula, 2002, p. 24)

Figure 4a) and 4(b) show the permissible structures. According to the coda licensing principle, (c) is barred as a possible structure in GP. The coda licensing principle states that ‘post nuclear rhymal positions must be licensed by a following onset, (Kaye, 1990).

#### 4.3 Parameters in Government Phonology

In this paper, I will discuss two parameters: the parameter on branching structure and the parameter on domain-

final empty nuclei. In GP, the syllabic constituents: Onset, Nucleus and Rhyme are maximally binary, that is, they may contain up to two positions. However, not all languages exploit the binality of constituents. (Kaye, 1990; Cyran, 1995) propose that the choice between branching and non-branching constituents is parameterized across languages. The parameter on branching structure can be summarized as follows:

Branching

Onset	Yes/No
Nucleus	Yes/No
Rhyme	Yes/No

The other parameter is the parameter on domain final empty nuclei. If the final nuclei must always be realised in a language then the parameter is OFF, but if it is not always realised then the parameter is ON. This parameter is related to the coda-licencing principle. In languages where the parameter is ON, the slot is present but remains empty. Therefore, two parameters will be used for the discussion on Gichuka loanwords:

- i. Parameter on branching and non-branching structure
- ii. Parameter on domain-final empty nuclei.

#### 4.3.1 Gichuka Parameter Settings

- (i) Parameter on branching constituents [off] (language has non-branching structure)
- (ii) Parameter on domain-final empty nuclei [off] (in Gichuka the final nucleus is always realised).

#### 4.3.2 English Parameter Settings

- (i) Parameter on branching constituents [on] (language has a branching structure)
- (ii) Parameter on domain –final empty nuclei [on] (in English the final nucleus is not always realised)

### 4.4. Government and Licensing Theory

In GP, government and licensing relations within a phonological domain is the means by which segments (which are dominated by constituents) in a surface linear order, are related (Kula, 2002). Government is defined as a binary, asymmetric (not equal) relation holding between two skeletal positions (Kaye et al, 1990). To licence is to sanction to exist and every position within a phonological domain must be sanctioned to exist (Kula, 2002). The source of licensing for the whole domain is the most dominant nucleus which licenses all nuclear in the domain (word) at the nuclei projection. Once licensed, the nuclei then license the onsets in their ON pairs.

According to Kula. (2002) Government is a more specific version of licensing that has specific requirements on the governed constituent or position. A governed position is also licensed by its governor. The specific conditions on government are strict locality and strict directionality. Inter-constituent government holds between a rhymal complement and a following onset. Constituent government holds within constituents. Since the constituents are maximally binary constituent government is between the first branch (governing head) and the second branch (governee). The third form of government is also a type of inter-constituent government referred to as inter-onset government. It allows onsets to be in a government relation separated by an empty nucleus it is related to the Empty Category Principle ( ECP ) which is allowed to remain empty by the government relation. Inter-onset government will be used in the representation Nasal-Consonant (NC) combinations. The specific conditions on government are strict locality and strict directionality.

- a) Strict directionality: In constituent government, the head is initial and the government is strictly local (left to right). In inter -constituent government, the head is final and the government is strictly local (right to left).
- b) Strict locality: only adjacent positions can constitute a government relation

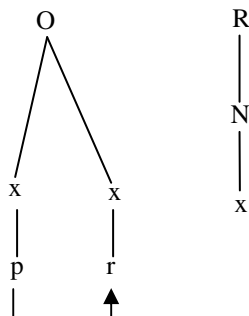
Source: Kula, 2002, p. 25

The above conditions imply that only licit branching governing domains are structures that involve binary branching constituents. Thus a branching nucleus within a branching rhyme is not allowed, because the nuclear head (in the left branch of the nucleus) will not be able to govern the rhymal complement without violating locality.

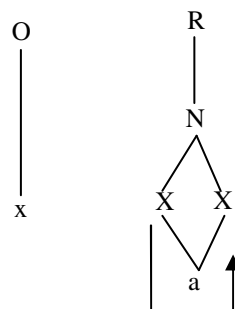
The types of Government are illustrated in Figure 5:

Constituent government

a)

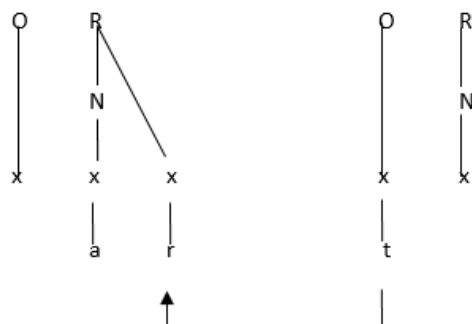


b)



5(a) illustrates constituent government within a branching onset, where /p/ acts as the head that governs the dependent /r/ as in the word ‘pray’ the same relation is seen in (b) which gives the structure of a long vowel. The standard representation of long vowels in GP is a branching nuclei as shown in 5 (b)

a) Inter-constituent government



5 (c) Illustrates inter-constituent government between an onset / t / and a preceding coda consonant / r / where / t / is the governor and / r / is the governee.

d) Inter-Onset government

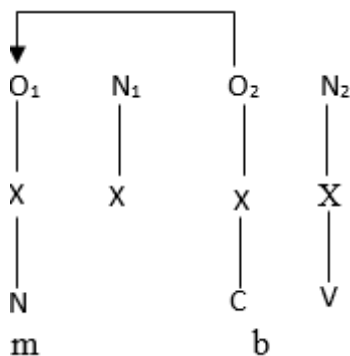
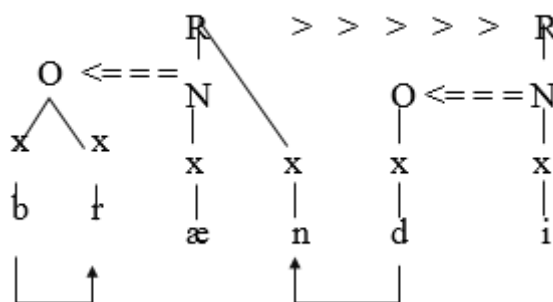


Figure 5 :Government and Constituent Structure in GP (Kula, 2002, p.25& 74)

5 (d), illustrates a NC cluster / mb /. The nasal and the consonant contract an inter- onset government relation. In inter-onset government, the nasal will be the governed member. The governor will impose on the governee (the nasal) the condition that it should be homorganic to the governor. This means that the nasal will lose the ability to specify its own place of articulation (Kula, 2002). Inter- onset government will be used in the representation of NC clusters in Gichuka.

Inter-constituent government will be used in the representation of long vowels in Gichuka. Constituent government and inter- constituent government apply in English because it has a branching structure allowing constituent government and branching rhymes allowing inter- constituent government. Figure 6 shows licensing and government relations in a single English word ‘brandy’ / brandi /



- ( —> ) Constituent government
- ( <— ) Inter-constituent government
- ( <== ) Licensing in ON pair
- (>>>) Projection licensing

Figure 6: Government and Licensing Relations  
 Source: Adapted from Cyran, 1995, p.14

Licensing relations are contracted between the nuclei and the onsets in the ON pairs. Constituent government is contracted between constituents where in Figure 6 / b / acts as the head that governs / r /. Inter-constituent government is between a rhyml complement and / n / and a following onset / d / where / d / is the governor and / n / is the governee. Projection licensing is contracted between nuclei at the projection level where the head nucleus / æ / licences all the nuclei in the domain (in this case / i / and the nuclei in turn license the onsets in the ON pairs.

### 5. Research Design

Broadly, a qualitative research design was adopted in this study. Also, a combination of two study approaches; a historical research method and a descriptive approach were used to collect qualitative data. Historical research involves studying, understanding and explaining past events. This is done in order to arrive at conclusions concerning causes, effects or trends of past occurrences which may help to explain present events and anticipate future events. Descriptive research determines and reports things the way they are (Gay, 1976; Mugenda, 1999).The historical approach is suitable for the study of obsolete words and to gather etymological information. The descriptive approach will be used in loanwords and words that have come into the language through other word formation processes.

### 6. Population

The target population of this study all lexical items borrowed from English into Gichuka.

### 7.Study Location

This study was carried out in the areas occupied solely by the Chuka people. These are Chuka and Magumoni Wards of Meru South Sub- County. . Information gathered from the Kenya Bureau of statistics in Chuka town revealed that the population in Chuka Division according to the 2009 census was 61,449.The population in Magumoni Division was 36,498.

### 8. Sampling Procedure and Sample Size

Purposive sampling was used to get the sample for this study. The researcher selected social domains that naturally experience language change in cases of language contact. The researcher identified these domains based on previous research (Mutua, 2013; Mwaniki, 2013) and on her personal observation. These domains will be representative of all lexical changes have that occurred in Gichuka. They are education, health, administration, agriculture, electrical goods and technology, household goods, food, religion, clothing, trade and industry.

Purposive sampling was also used to select informants. The researcher identified native speakers who are aged seventy years and above and have lived /worked in the location of the study for most of their active life. Those over seventy years are able to tell the words that were not there in the Gichuka language but are now a part of the Gichuka lexicon. The people in this age bracket have experienced the changes that have occurred in the language as well as other social changes that may have impacted on lexical changes.

### 9. Data Collection Procedures

Data was collected in two phases. The first phase involved interviewing respondents on each semantic field. To

take care of ethical considerations, the respondents were given all the facts about the research in order to decide whether to participate or not. They have also been acknowledged by the researcher for their contribution to the study. In total, ten informants were involved in the data collection. The informants were engaged in a near-natural conversation by the researcher to extract data on new lexical items. The new lexical items were noted down as the conversation was going on and soon after categorized using the guiding cards. Included in this phase is also the data that was collected through participant observation (naturally occurring data). The researcher enlisted the help of two research assistants in this.

The second phase involved subjecting the data collected through interviews to a focused group discussion. The justification for using focused group discussions is that they are inexpensive, data rich, flexible, stimulating, recall-aiding, cumulative and elaborative (Punch, 2005; Morgan, 1988). This cannot be achieved through the normal interview where only one person is engaged. The discussion enabled the researcher to work with a maximum of ten people simultaneously as a moderator and not an interviewee as such. The researcher was facilitating, moderating, and monitoring and recording group interaction. The group discussion was used to come up with any borrowed lexical items that may have been missed out in the interviews and participant observation

### **10. Validity and Reliability**

The informants who were used in the data collection were native speakers of Gichuka. The native speakers of a language have intuition about the well-formedness of language structures. This means that a native speaker has the ability to make judgments about whether a structure is correct or incorrect. In phonology, native speakers have strong intuitions about phonological structure and phonotactics, that is, intuitions about what are possible and impossible sound sequences in a language (Radford, 1988).

### **11. Data Analysis**

The loanwords that were adapted into Gichuka using vowel epenthesis were identified. A total of 130 English loanwords were collected by the researcher. 93 of them had undergone vowel epenthesis giving a percentage of 71.538%. A sample of 20 words were analysed and are presented in section 12.

### **12. Results**

Vowel Epenthesis refers to the addition of one or more vowel sounds in the middle or final position of a word. Vowel epenthesis is a very common phonological process in loanword nativisation (Ziveng, 2005).and Uffman (2004) observe that vowels are epenthesized in loanword nativisation if the borrowing language has tighter phonotactic constraints than the donor language. The GP explanation is different.

In GP, this process occurs because languages vary parametrically on two parameters; branching/ non-branching structure and domain-final empty nuclei which may or may not be realised. Because the parameter on branching vs non- branching accounts for vowel epenthesis in middle position and the parameter on domain-final empty nuclei accounts for vowel epenthesis in final position, each epenthesis will be dealt with differently starting with vowel epenthesis in middle position.

#### **12.1 Vowel Epenthesis in Middle Position**

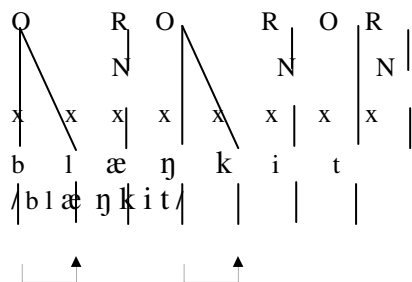
Vowel Epenthesis in middle position takes place in adapting English loanwords into Gichuka in order to set the parameter on branching structure. Gichuka is a non-branching language while English is a branching language. The five examples given below illustrate the branching (English) and non-branching (Gichuka) nature of languages. As per the coda licensing principle, post nuclear rhymal positions must be licensed by a following onset. The empty nuclei in the structures in the structures that follow are sanctioned via the Empty Category Principle.

Arrows indicate government. In English, within constituents there is constituent government between the first branch (governing head) and second branch (governee) of a constituent. Constituent government proceeds from left to right. Also in English, there is inter-constituent government between a rhymal complement and a following onset. Inter-constituent government proceeds from right to left. In Gichuka there is inter-constituent government in a long vowel which will be presented on two timing slots and inter-onset government between two onsets separated by an empty nucleus allowed to remain empty under the Empty Category Principle ( ECP ) in the representation of NC clusters. Conditions on government apply, that is, strict directionality and strict locality. Branching nuclei are headed. Non branching nuclei are headless.

#### **(1) Blanket**

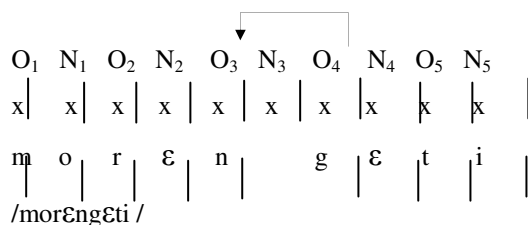
- a. English: / blæŋkit /
- b. Gichuka: / moreŋgeti /

a. English : Branching Onsets in English (Parameter on Branching Structure- ON)



In the English word blanket / blæŋkit /, there are two branching onsets and the constituents in the branching onsets contract a constituent government relation where / p / acts as the head which governs / l / and / ŋ / acts as the head which governs / k / because constituent government proceeds from left to right. The domain final nuclei is empty and it is sanctioned through the Empty Category Principle (ECP). The ECP allows a position in the P<sup>0</sup> to receive no phonetic interpretation because it is licensed through prosodic licensing (p- licensing). A domain final category is p-licensed through parameter.

b. Gichuka: Non- Branching (Parameter on Branching Structure- OFF)



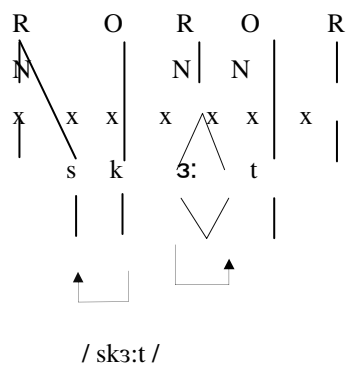
In the Gichuka word morengeti / morɛŋɛti / (1b) , vowel epenthesis has occurred in the insertion of singular prefix mo- , which is a nominalizing prefix for class 2 nouns and the prefixation leads to the formation of the domain intial ON pair. The consonant cluster / bl / is replaced by combining / r / with / ɛ / in the second ON pair. The second consonant cluster / ŋk / is formed through nasal prefixation (NC). In Gichuka, the final vowel is always realised so the domain-final slot it is not empty. No government relations are contracted in the adapted word because Gichuka has a non-branching structure. Licensing relations are contracted between the ON pairs.

(2)

a. English /sk3:t/

b. Gichuka /cikati/

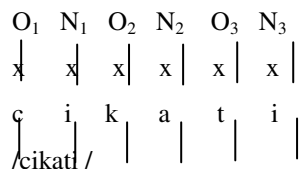
a. English: Branching Onset and Nucleus (Parameter on Branching Structure- ON)





The English word skirt /skɜːt/ has a branching rhyme and a branching nuclei and there is inter-constituent government between /s/ and /k/ and constituent government between the long nuclei. /s/ is represented as a rhymal complement and /k/ as an onset and the nuclei slot is empty and p-licensed through magic licensing.

b. Gichuka: Non branching (Parameter on Branching Structure- OFF)



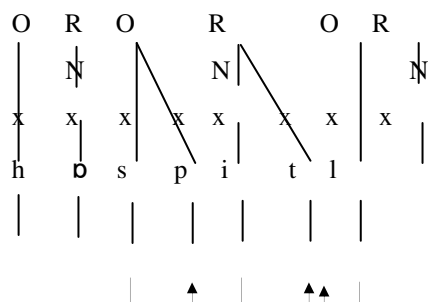
Vowel epenthesis in the middle position in the Gichuka word cikati /cikati/ gives a non-branching structure where the nuclei license the onsets in the ON pairs.

(3.) Hospital

a. English /hɒspɪtl/

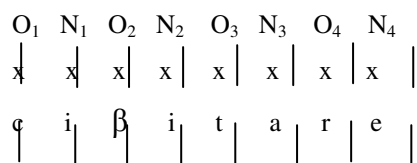
b. Gichuka /ciβitare/

a. English: Branching Onset and Rhyme (Parameter on branching structure-ON)



The English word hospital /hɒspɪtl/ has a branching onset and a branching rhyme. A constituent government is contracted between the segments in the onset /s/ and /p/ and also between /i/ and /t/ and an inter constituent government is contracted between the rhymal complement /t/ and the following onset /l/.

b. Gichuka: Non-branching (Parameter on branching structure OFF)

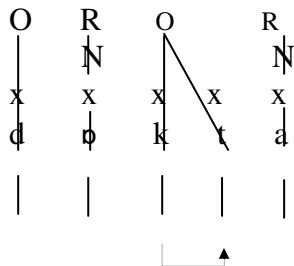


/ciβitare/

Vowel epenthesis in the middle position in the Gichuka word cibitare /ciβitare/ gives a non-branching structure where the nuclei license the onsets in the ON pairs.

(4) Doctor

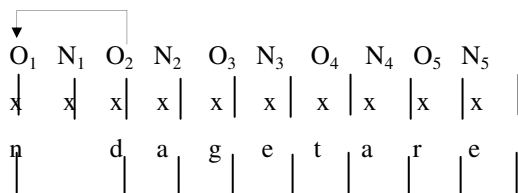
- a. English: /dɒkta /
- b. Gichuka: /ndagetare /
- a. English : Branching Onset (Parameter on Branching Structure - ON)



/dɒkta/

The English word doctor /dɒkta / has a branching onset and there is a constituent government relation between the head / k / and the complement / t /.

- b. Gichuka: Non-Branching (Parameter Branching Structure - OFF)

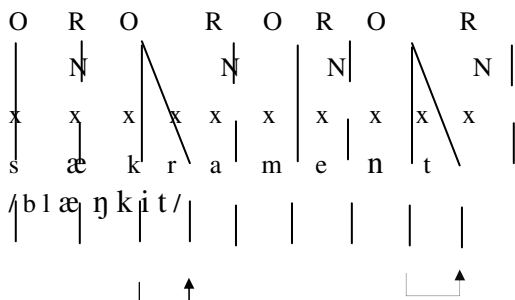


/ ndagetare /

Vowel epenthesis in the middle position in the Gichuka word ndagetare / ndagetare / gives a non-branching structure where the nuclei license the onsets in the ON pairs. An inter- onset government relation is contracted between the nasal and the consonant in the NC cluster.

(5) Sacrament

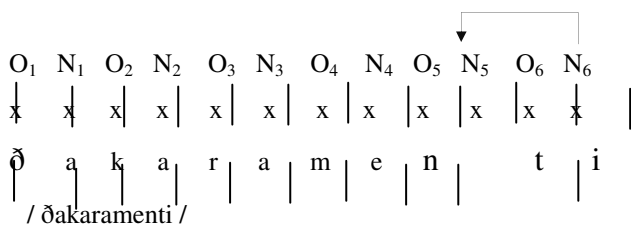
- a. English /sækrament /
- b. Gichuka / ðakaramenti /
- a. English : Branching Onsets (Parameter on Branching Structure ON)



/sækrament /

The English word sacrament /sækrament /has two branching onsets within which constituent government in contracted within the branching constituents.

- b. Gichuka : Non-branching (Parameter on Branching Structure ON)



/ ðakaramenti /

The epenthesis of the vowel / a / in the middle position in the Gichuka word thakaramenti / ðakaramenti / gives a non-branching language structure where the nuclei license the onsets in the ON pairs and in the NC (nt), the plosive / t / contracts an inter- onset government relation with the nasal / n /. The empty nuclei N<sub>5</sub> is licensed by

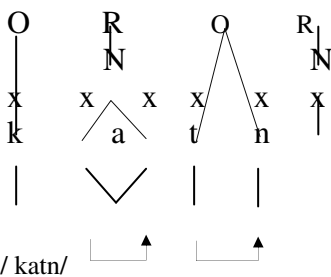
N<sub>6</sub> at the nuclei projection and allowed to be empty under the ECP.

**12.2 Vowel Epenthesis in Domain- Final Position**

Vowel Epenthesis in domain final position is also a parameter across languages in GP. In Gichuka, the final vowel must be realized while in English the final vowel need not be realized. The parameter is OFF in Gichuka but ON in English. All the lexical items borrowed from English have the domain final nuclei realized. This is illustrated in the five examples analysed from 6-11. The Empty Category Principle and government conditions stated in section (12.1) apply in this section as well.

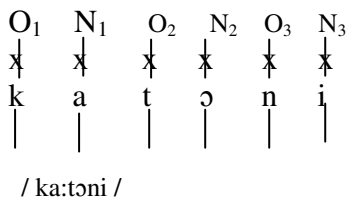
(6) Carton

- a. English / ka:tn /
- b. Gichuka / ka:tɔni /
- a. English : Unrealized domain final nuclei



In the English word ‘carton’, the domain-final nucleus is unrealized. Constituent government is contracted in the branching rhyme and branching nucleus in the English word / katn /

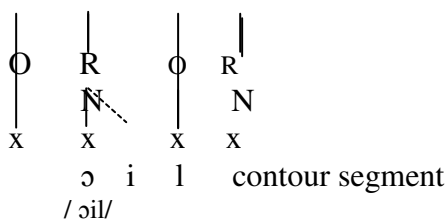
- b. Gichuka : Realized Domain final Nuclei



In the Gichuka word ‘Katoni’, the domain-final nucleus is realized through epenthesis of / i /.

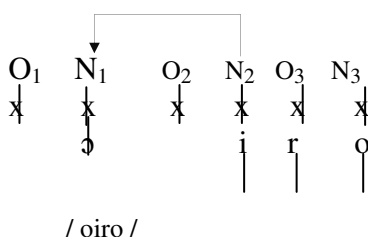
(7).Oil

- a. English / ɔil /
- b. Gichuka / oiro /
- a. English : Unrealized domain final nuclei



In the English word ‘oil’, the domain-final nucleus is empty.

- b. Gichuka : Realized domain final nuclei

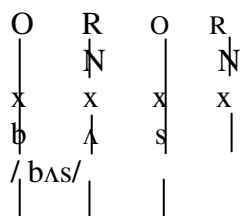


In the Gichuka word oiro/ oiro /, the domain-final nucleus is realized through epenthesis of /o /.

The empty onset in 8(b) is p-licensed ( an onset within an inter-nuclear domain).

(8) Bus

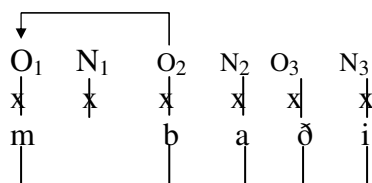
- a. English /bʌs/
- b. Gichuka /mbaði/
- a. English : Unrealized domain final nuclei.



In the English word bus /bʌs /, the domain-final nucleus is unrealized.

- b. Gichuka : Realized domain final nuclei

Inter-onset government

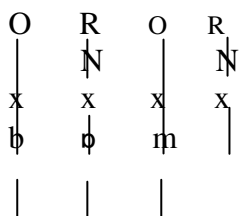


/mbaði/

In the Gichuka word mbathi/ mbaði//, the domain-final nucleus is realized through epenthesis of /i /.

(9) Bomb

- a. English /bɒm/
- b. Gichuka /mbɔmu/
- a. English : Unrealized domain final nuclei

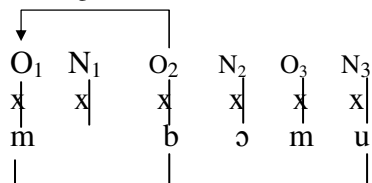


/ bɒm /

In the English word bomb /bɒm. /, the domain-final nucleus is unrealized.

- b. Gichuka:Realized domain final nuclei

Inter-onset government

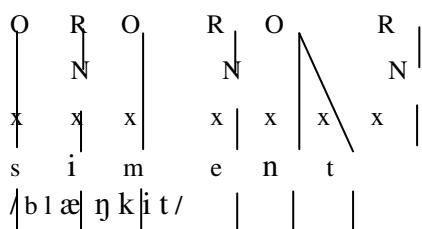


/mbɔmu/

In the Gichuka word mbomu / mbɔmu /, the domain-final nucleus is realized through epenthesis of /u /

(10) Cement

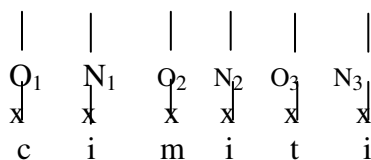
- a. English /siment/  
 b. Gichuka / cimiti/  
 a. English : Unrealized domain – final nuclei



/siment /

In the English word cement /siment / the domain-final nucleus is unrealized.

- b. Gichuka : Realized domain final nuclei



/cimiti /

In the Gichuka word ciimiti / cimiti /, the domain-final nucleus is realized through epenthesis of / i /.

### 13. Summary

Vowel epenthesis in Gichuka loanwords borrowed from English is a parameter setting strategy as explained using Government Phonology Theory. The parameter on branching and non-branching structure explains vowel epenthesis in middle-position while the parameter on domain-final empty nuclei explains for vowel epenthesis in domain-final position.

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