THE UNDERLYING REALITY OF PHONOLOGICAL SIMPLIFICATION OF LOAN WORDS BY SPEAKERS OF GIKUYU

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1.0 Abstract

The aim of this study is to explain the extent to which creative construction hypothesis advanced by Dulay and Burt (1982) is consistent with phonological processing strategies adopted by speakers of Gikuyu in the pronunciation of foreign loan words. Based on a survey of selected loan words and fieldwork in Central Kenya, it is proposed that analytical comparison of sound correspondence and non-correspondence of sound patterns in Gikuyu and those of foreign loan words will shed light an underlying processing strategies that influence sound change. Phonological simplification and modification lead to expansion and creation new vocabulary in language contact situation. The study demonstrates that phonological change affects pronunciation patterns by adult speakers of Gikuyu in language contact situations. It is assumed that sound change can be understood from the logical problem of language acquisition where overgeneralization and rules depends on corrective feedback which is unavailable to adult speakers.

Keywords: Language contact   loanwords   creative construction   phonological modification simplification   code mixing   phonemes   correspondence syllables   deletion   generalization.

1.1 Introduction

The myriad linguistic issues affecting and influencing ethnic languages remain partially unexamined. This article considers the language contact situation in a multilingual setting in which Gikuyu in Kenya has borrowed a large part of vocabulary from many sources so that its speakers are able to participate in economic and educational activities. The focus is on the phonological changes that loan words undergo in order to achieve efficiency in communication. The study evaluates the initial attempts which were made to give directions into how the pronunciation patterns can be represented and the challenges they present to modern scholars who attend to provide evidence of transfer of Gikuyu pronunciation sound patterns to foreign loan words.

This study provides some linguistic explanations and insights into what is still understudied and under- represented in the literature of language contact and hence provide a better understanding of the phenomenon of language change. The introductory remarks are primarily concerned with the description of sociolinguistic background information with the assistance of proficient Gikuyu

speakers about the language contact situation that is responsible for the influx of foreign loan words to Gikuyu. In accounting for the simplification and modification of phonemes in borrowed lexicon the concepts of approximation and equivalence will be given additional meaning both comparatively and contrastively in the realization of non-Gikuyu phonemes.

Although the phenomena of phonological modification and simplification of borrowed words is a recognizable feature in Gikuyu contact situations, it has not been adequately investigated and described, consequently scholarly study and analysis of borrowed lexicon in specific language contact situations are scanty. The study elaborates and discusses how Gikuyu speakers achieve phonological modification of foreign loan words. Foreign words which have entered Gikuyu language in the last seventy years was remolded phonologically so that the pronunciation of sounds conform with the pronunciation patterns of Gikuyu leading to enrichment of Gikuyu vocabulary. In order to elaborate the underlying process in phonological simplification this discussion is premised on the creative construction hypothesis.

2.0 Conceptual Framework

The conceptual framework in which this study is based is the creative construction hypothesis by Dulay et. al. (1982.276). This hypothesis is elaborated as the subconscious cognitive process by which learners gradually organize the language they are exposed to into a system. According to this hypothesis learners in a language contact situation use cognitive mental process to understand and generate new structures. They work out their own phonological rules of the target vocabulary they are exposed to leading to creation of new phonological structures which are not found in both the target language and their first language.

In the language contact situation where Gikuyu speakers were initially in contact with predominantly English speaking foreigners, the speakers of Gikuyu borrowed words which were remolded creatively so that their pronunciation patterns today are in conformity with the Gikuyu pronunciation pattern.

In order to discuss our data systematically against the background of the findings this study seeks answers to the following research questions:

   i)   Is there systematicness in the simplification and modification of phonemes in loan words that can be meaningfully described in structural terms?

   ii) What are the significant phonological strategies that influence sound change in loan words adopted by speakers of Gikuyu?

   iii) Is there any prominent change in the pre-nalization of voiced sound patterns which precede the phonemes /b/, /d/, /ŋ/, /ɲ/, /g/and /ʤ/?

The major sources of loans words which have enriched Gikuyu vocabulary are identified in this study as domains of language contact sites and are listed as part of the source of data for this study.

The discussion of phonological simplification and modification of phonemes in loan words by speakers of Gikuyu is attempted after an initial examination of the standard phonemes of Gikuyu.

Five literate adult native speakers of Gikuyu were used to identify popular loan words and to make statements about correspondence and non correspondence in the pronunciation patterns of Gikuyu and those of foreign loan words. Generalizations and conclusions were made on the basis of similarities and differences in the target pronunciation patterns and the realities of speech patterns of Gikuyu language.

2.1 Data Base and methodology.

The database for this study consists of eighty borrowed words which are in frequent use as part of Gikuyu vocabulary. The words were taken from five major domains of language contact sites namely, the religious domain, education, trade and industry, public administration and geography and shared boundaries as well as healthcare domain.

Each set of loan words was given to four groups of Gikuyu speakers. The speakers were asked to pronounce the written words individually and then to use each of the loan words in a meaningful expression in normal speech. The words were recorded and transcribed orthographically. An inventory of loan words and their original sources was prepared. The words were then recorded in their English orthography as well as their phonetic representation.

Each of the Gikuyu speakers was invited to read the words aloud. After reading the words aloud, they were requested to choose five words and construct short sentences using each of the words they had selected. The observations made formed the basis of this study which took into account that Gikuyu spelling system can realistically represent differences in pronunciation.

The purpose of the listening and pronunciation task was to survey the extent to which Gikuyu speakers use specific strategies by creating conditions for sound modification and simplification of foreign sound patterns.

The phonemes in each adopted loan words were examined in terms of correspondence or non-correspondence with the pronunciation patterns of Gikuyu and in respect to the processes of sound simplification and modification. Simplification is defined in Ellis R (1985:48) as a means by which the learner reduces learning burden to manageable proportion by limiting the number of hypothesis available to him.

2.2 Language Contact Sites

While English was a major source of the bulk of loan words, others were borrowed from Latin, Kiswahili, Hindu, Arabic and neighbouring ethnic languages. We consider briefly some of the domains of language use through which many foreign words entered Gikuyu language.

2.3 Religion as a Language Contact Site

A significant language contact site which has interacted with Gikuyu leading to an influx of foreign loan lexicon and names is associated with religious practices and the teaching of western Christian doctrines. It was through the Christian missionary activities that the writing system of Gikuyu was first introduced leading to translation of religious books into Gikuyu. The missionaries attempted an elaboration of Gikuyu grammar using the then familiar Latin framework. Any linguistic description that was attempted was influenced heavily by the missionaries' religious activities and did not reflect serious understanding of genetic or typological classification since the missionaries were not trained in linguistics.

It is through the activities of the Christian missionaries that many foreign words and names entered Gikuyu vocabulary. The Protestant Churches had close relationship with the administrators. Their religious activities played a major part in influencing the colonial administration policy-making processes. This led to extensive interaction between religious education and Gikuyu.   A number of loan words in this domain and many others which are in popular use in Gikuyu were virtually borrowed by Kiswahili from foreign languages after which   they underwent phonological, modification. Gikuyu then borrowed these words from Kiswahili.   Religion became a major source of many foreign words such as *thakaramendi (sacrament) gategithima (catechism), kibatithio (baptism), batiri (padre), angelo (angel), Maria (Mary), Njohana (John), cad (Church), kanitha (kanisa), taranda (talent), thaburi (Psalms), Njehova (Yahweh), athandukai (Sadducees), Rakeri*

(Rachael), Roma (Rome), Kiratini (Latin) Mibarithai (Pharisees), Thigoci (Scot), Njithu (Jesus), Mariko (Mark), Iburahemu (Ibrahim), (Stephen) Thitebano, etc.

An important feature of foreign vocabulary and names which entered Gikuyu language, is that their sounds underwent sound change and transformation and were remolded in order to fit the patterns of Gikuyu pronunciation.

2.4 Education as a Language Contact Site

Existing linguistic research which has addressed the issue of education as an influential language contact site has focused mainly on questions of bilingual education and language planning (Crystal 2000) (Baker 2001) (Cummins 2000), (Bialystock E 2001) and (Thompson 2000). Studies on how education provides an interactive arena for language change through borrowing in bilingual educational contexts are sketchy. Language policy in Kenya has for linguistic, cultural and educational reasons advocated the provision of education and literacy skills especially in the early years in ethnic languages which are popularly referred to as mother tounges. Speakers of Gikuyu as a first language are therefore trained in literacy skills in Gikuyu while Kiswahili and English are introduced later. Formal education creates an ideal social setting for cross-linguistic interaction leading to code switching and code mixing as well as word borrowing. It is through technical and formal education that foreign words such as *cukuru (school), mabuku (books), kwandika (write), kirathi (class), ramborotari (laboratory) mathabu (hesabu), mwarimu(mwalimu, ndomitiri (dormitory) kompiuta (computer) etc*. have become part of Gikuyu vocabulary. Formal western educational practices introduced technology and related equipment that were culturally unfamiliar in the Kikuyu social cultural settings. Therefore most of the vocabulary that is in use is borrowed from diverse sources such as Kiswahili, English, Latin and Arabic. The pronunciation of the italicized loan words as we shall indicate later in our discussion have been naturalized and assimilated into Gikuyu pronunciation patterns. A surprising observation in our survey is that we did not record any significant nasalization of the phoneme /d/ in the northern dialect of Gikuyu which has been described in some linguistic studies by Christian missionaries leading to its representation in Gikuyu traditional alphabet.

2.5 Colonialism and Public Administration.

An important language contact site that has impacted on Gikuyu vocabulary leading to its growth is concerned with colonialism and its system of public administration. Colonialism became a major source of many foreign loan words which were used in all spheres of life. Virtually all the borrowed words underwent phonological simplification and transformation so that their pronunciation conformed with Gikuyu pronunciation patterns. The loan words in this area include words related with public administration and governance practices such as; *cibu (chief), kibandi (kipande), ndithii (DC), ngurubu (group), kamiti (committee), kanju (council), miniti (minutes), borithi (police), thigari (soldier), baini (fine), njeera (jail), njanji (judge), kirabu* (club), *riboti (report), rumande (remand), kandurumu (guard room), wabici (office), rokiconi (location), mathabu (mathematics), baathi (pass or a permit), igooti (court), ngaati (guard), bairo (file), karani (clerk), nooti (note) and thaini (sign) etc*. The loan words were phonologically remolded so that their pronunciation is consistent with Gikuyu pronunciation system.

Titles of government officials and terms of governance which identified governmental practices were borrowed from the colonial administration. The government structures that were put in place during the colonial days were radically different from those that were known by speakers of Gikuyu. The first European travelers who came in contact with Gikuyu speakers are known to have introduced the title chief *(cibu)* which did not exist in the governance practices of the speech of

Gikuyu speakers. John Boyes (1911) whom the Gikuyu speakers renamed *Mr. Karianjahi* has used this title extravagantly to identify some of the Gikuyu leaders he interacted with. He used the title *chief* instead of the appropriate Gikuyu title *muthamaki* or *mwathani* which can be translated as governor. In modern Gikuyu usage the word *cibu* has also acquired a range of historically contingent meanings in varied contexts where leadership roles are recognized.

2.6 Shared Geographical Boundaries and Locations
Shared geographical locations and boundaries provided a rich source of many words from the ethnic communities who share common boundaries with Gikuyu speakers. It is somehow difficult to identify words that were sourced from Kikamba as a result of trade or cultural interaction due to shared boundaries. Attempt to do so is likely to encounter linguistic challenges because Kikamba and Gikuyu share a common word stock as members of the Bantu language family. Typologically the two languages are similar and use relatively similar sound patterns.

An important language contact which may have been overlooked by scholars is associated with the Gikuyu-Maasai contact. The relationship between the two communities is frequently misrepresented by colonial historians as that of 'endless conflict and rivalry'. Due to pre-existing prejudices and lack of understanding of certain cultural practices, many issues in ethnic languages which are associated with indigenous knowledge and cultural practices were misrepresented. The interactive nature of ethnic languages and socio-cultural dynamics remain understudied and uninvestigated.

Attempts to gather reliable linguistic and cultural information from existing published works in anthropology about the social lifestyles of most ethnic communities encounter major challenges since most historical writers were neither linguists nor cultural anthropologists but adventurers and hunters. Instead of recognizing creativity, innovation, originality and possibly adaptation while explaining specific cultural practices and phenomena, writers delude their readers by describing such practices and activities as 'primitive or backward'.

As a result of the perceptions by western educated elites and foreigners of many ethnic cultural activities by some scholars, a sizeable bulk of cultural knowledge and linguistic information remains unexplained or distorted despite their sociolinguistic significance. Linguistic evidence show the existence of many Maasai loan words and place names which are in popular use by speakers of Gikuyu. The existence and use of many Maasai loan words serve as an indicator to researchers in linguistics and anthropology that there existed many areas of social interaction and cultural experiences that enriched the relationships between the two ethnic communities. Genetically, Gikuyu belongs to the Bantu language family. The morphological structure and the sound patterns of much of its vocabulary show marked differences from those of the Maasai vocabulary whose genetic origin is Nilo-Hamatic sub-group. The   loan words that have been borrowed by speakers of Gikuyu from Maasai underwent similar processes of phonological simplification and modification so that today they are recognized as part of Gikuyu vocabulary. In most cases only a trained historical linguistic scholar is able to trace the origin of some of these words. Among the ethnic communities which have contributed many loan words, the Maasai vocabulary is leading as a result of trade and socio-cultural contact as well as shared geographical boundaries. The borrowing and development of Maasai vocabulary by Gikuyu speakers can be accounted for as a substratum effect in which the Maasai loan words were molded by Gikuyu speakers to represent and reflect an active and dynamic socio-cultural and economic contact which gave rise to words such as *mang'ati (il-mang'ati), maru or maaru (ol-maalo), mbithe (ol-kipise), mbarii (em'barie), ilkabi (o 'kapi)* and many place names such as *Nairutia, Nairobi, Kiganjo, Riruta, Nakuru, Nanyuki Mweiga, Ondiri and I'lmogog (Limuru)* as well as the name *Nyokabi* which clearly indicate their origin as Maasai. Words such as *wagui*, *morani (moraan), amu, kibaata, barikui, beregenya, igata, ruguaru* and

maramara were borrowed from Maasai and they represent deep-rooted intercultural relationship between the Agikuyu and the Maasai.

2.7 Trade and Industry
The contacts and interaction with many people from different parts of the world through trade, industry and related commercial activities have been major sources of loan words which enriched Gikuyu vocabulary. Gikuyu borrowed and adopted technological terms including words for tools, machinery and instruments. Borrowed words for items of clothing and sports, names of some foods and crops were also added. Examples of these words which were introduced are *makanika* (mechanic), *macini* (machine), *ngaari* (car), *cethi* (chassis), *thuburia* (sufuria), *karagita* (tractor), *roori* (lorry), *caati* (shirt), *marigiti* (market), *mbagiti* (packet), *murengeti* (blanket), *kabondi* (cupboard), *tharari* (salad), *ngirebi* (gravy), ngobu (golf) *kacia* (cashier), *ngirathi* (glass), *rindio* (radio), *maithikiri* (bicycle), *rubia* (rupees) and *thogithi* (socks). Trade and Industry provide a rich menu of words which originate from traders and merchants of different linguistic backgrounds. Among these traders are Asians, Arabs, and the Europeans who interact with Gikuyu speakers. They facilitated the adoption of many trade terms in the work place such as *nduka* (shop), *mukawa* (Hotel), *nyabara* (Foreman), *thurari* (short), *Muhindi* (Asian), *karathing'a* (Singh), *muthigiti* (Mosque) and *mbatithi* (Puttees) etc. In commercial practices and activities they introduced words like *bengi* (bank), *bainda* (Profit), *thebu* (safe), *thitoo* (store) and *thendi* (cents) etc.

2.8 Healthcare Practices
New words in the field of medical practice and healthcare such as *thibitari* (hospital), *thieta* (theatre,) *wondi* (ward), *ndagitari* (Doctor) and *mocari* (mortuary) were introduced. The point to note about word borrowing in this area is that the new terms which were introduced and their meanings became part of new thinking and linguistic environments. These loan words were used in a Gikuyu linguistic environment which is different from their habitual foreign groupings with other key terms while new semantic constructions were created in order to represent new ways of thinking and acting. Therefore, the word hospital *(thibitari)* is associated with new healthcare practices while the terms such as *ndagitari* (doctor), *woondi* (ward) have introduced relatively similar semantic perceptions and interpretations. In many instances the loan words were merely simplified in order to conform to Gikuyu pronunciation patterns. The inventory of medical and scientific loan words is reasonably wide and it shows that most words were sourced from English, Latin, Italian and Hindi within the disciplines of science, medicine and engineering.

The following inventory of loan words was identified for listening and pronunciation tasks leading to discussion and explanation of phonological changes in loan words.

	Loan words	Source language	Facilitating domain
1	Gatigithimo (Catechism)	Latini	Religion
2	Kibatithio (Baptism)	Latin	Religion
3	Batiri (padre)	Italian	Religion
4	Anjelo (angel)		Religion
5	Maria (mary)	Latin	Religion
6	Njohana (John)	Latin	Religion

7	Caci (church)	Greek	Religion
8	Kanitha (kanisa)	Kiswahili	Religion
9	Taranda (talent)	Latin	Religion
10	Thaburi (psalms)	Hebrew	Religion
11	Njehoba (Yahweh)	Hebrew	Religion
12	Athandukai(Sadducees)	Hebrew	Religion
13	Rakeri (Rachel)	Italian via English	Religion
14	Roma (Rome)	Latin via English	Administration
15	Kiratini (Latin)	Italian via English	Religion
16	Mubarithai (Pharisee)	Hebrew via English	Religion
17	Thigoci (scot)	English	Administration
18	Njisu (Jesus)	Latin/Hebrew via English	Religion
19	Mariko(mark)	Hebrew via English	Religion
20	Iburahemu (Ibrahim)	Hebrew via English Kiswahili	Religion
21	Thitebano (Stephen)	English	Religion
22	Cukuru (school)	English	Education
23	M buku (book)	English	Education
24	Kwandika(write)	Kiswahili	Education
25	Metha (table)	Spanish via Kiswahili	Technology
26	Riboti (report)	English	Administration
27	Rumande (remand)	English	Administration
28	Kandurumu (guardroom)	English	Administration
29	Wabici (office)	English	Administration
30	Rokiconi (location)	English	Administration
31	Mathabu (mathematics)	English	English
32	Igooti (court)	English	Administration
33	Ngaati (guard)	English	Administration
34	Bairo (file)	English	Administration
35	Karamu (kalamu)	Kiswahili	Education

36	Nooti (note)	English	Trade
37	Thaini (sign)	English	Administration
38	Makanika (mechanic)	English	Trade/technology
39	Cethi (chassis)	English	Trade/technology
40	Thaburia (sufuria)	Hindu via Kiswahili	Trade
41	Ngaari (car)	Latin/French via English	Trade/technology
42	Karagita (tractor)	English	Trade/technology
43	Roori(lorry)	English	Trade/technology
44	Caati (shirt)	English	Trade
45	Murengeti (blanket)	English	Trade
46	Kaboondi (Cupboard)	English	Trade/technology
47	Tharari (salad)	Hindu/ English	Trade/technology
48	Ngirebi (gravy)	Hindu/Kiswahili	Trad
49	Kamera(camera)	Latin	Trade/technology
50	Ngobu(golf)	Scottish via English	Sport
51	Kacia(cashier)	English	Trade
52	Mirau (plough)	English	Trade/technology
53	Ngirathi (glass)	English	Trade/technology
54	Rindio (radio)	English	Trade/technology
55	Maithikiri (bicycle)	English Via Kiswahili	Technology
56	Karani (clerk)	English	Technology
57	Karenda (calendar)	English	Trade
58	Thogithi (socks)	English	Trade
59	Rubia (rupees)	Hindu	Trade
60	Thibitari (hospital)	English Via Kiswahili	Healthcare
61	Thieta (theatre)	English	Healthcare
62	Woondi (ward)	English	Healthcare
63	Ndagitari (doctor)	English Via Kiswahili	Healthcare
64	Marigiti (market)	English	Trade / Commerce

65	Thitoo(store)	English	Trade
66	Muthigiti(mosque)	Arabic Via Kiswahili	Religion
67	Thebu (safe)	English	Trade
68	Muhindi (Hindu)	Hindu/Kiswahili	Trade
69	Mukawa (hotel) Mkahawa	English Via Kiswahili	Trade
70	Ukabi o'kapi	Masaai	Shared boundaries
71	Wagui (grandfather)	Masaai	Shared boundaries
72	Riruta (yard outside homestead)	Masaai	Shared boundaries
73	Mbarii (em'barie)	Masaai	Shared boundaries
74	Kibithe (o'kipise)	Masaai	Shared boundaries
75	Cibu (chief)	English	Administration
76	Miniti (minute)	English	Administration
77	Borithi (police)	English	Administration
78	Njanji (judge)	English	Administration
79	Kirathi (Class)	Latin (English)	Education
80	Thothaiti (Society)	Latin (French)	Administration/Business

2.9 THE FINDINGS

The identified listed vocabulary represents part of a very large stock of words which have entered Gikuyu language from diverse sources. The inventory of words was given to five native speakers of Gikuyu who made remarks in respect to pronunciation similarities and differences between Gikuyu sound patterns and those of foreign loan words. The following observations were evident:

1. The loan words are different words from the foreign words they were borrowed from.
2. The pronunciation of some phonemes in loan words shows similarities with words they have been borrowed from.
3. The consonant phonemes which have no Gikuyu equivalents with the foreign ones such as /p/, /v/, /z/, / s/, /ʃ/, / ʒ/ have been remolded and changed.
4. The consonant phonemes which show resembrances with some Gikuyu phonemes or approximate the sounds that are produced by speakers of Gikuyu such as /m/, /n/, /r/ /k/, /j/ /f/, /ʧ/, /ð/, /g/ were remolded through processes such as nasalization and palatization.

   The author found that Gikuyu speakers' intentions is to deduce or recognize   sounds in foreign loan words on the basis of in incomplete sound indicators in   relation to familiar sound patterns of their language.

5. Consonant clusters in names and words like *catechism, padre, scot, Ibrahim, Stephen guardroom, tractor, blanket, cupboard, doctor, ol'kipise and em'barie* etc were modified and simplified through the inclusion of appropriate vowels which eliminated the *ccvc* sound

pattern and replaced with cvcv Gikuyu sound pronunciation pattern. Speakers preserve the phonological structure of their language.

3.0 Realization of Gikuyu consonant phonemes in Loan words

This study seeks to shed some light on the processes and dynamics in phonological change evident in foreign loan words which are adopted by Gikuyu speakers by providing some answers to the following three statements in relation to whether:-

(i)   There is consistency and systematicness in the simplification and modification of phonemes in loan words that can be described in structural terms?

(ii)   There are significant phonological strategies and processes that actively influence sound change in loan words?

(iii)   Speakers of Gikuyu use prenasalized stops in their pronunciation patterns.

In order to provide principled answers to these questions and give insights into the dynamics of phonological simplification the discussion draws from the postulations made by Dulay and Burt who suggest the creative construction hypothesis in which he proposes that, *"learners actively organize the L2 speech they hear and make generalization about its structure as children learning their first language do".* Dulay and Burt 1972: 236.

According to this hypothesis, the speakers of Gikuyu as a first language have the cognitive capacity to reorganize the phonemes in foreign loan words. This reorganization is not haphazard but follows a regular systematic pattern. It would appear that the places of articulation, the manner of speech production as well as voicing in Gikuyu is central in the complex pronunciation patterns that phonemes in foreign loan words are subjected to. Indigenization of the pronunciation of loan words after assimilation follows a regular process, which can be best understood by a careful analysis of the phonetic structure of Gikuyu as provided in Armstrong E.(1967).

Gikuyu employs eighteen distinctive consonant phonemes. A number of the Gikuyu phonemes correspond with those that are used in foreign loan words in relation to places of articulation and manner of production. The significant consonants phonemes of Gikuyu are illustrated in the chart showing the places of articulation and the manner of articulation.

Gikuyu consonants chart (Adopted from Armstrong E.(1967) and Meinhof Warmelo (1932)

	Bilabial	Labiodental	Dental	Alveolar	Palatal	Velar	Glottal
Plosive	(m)b			t (n)d		k (n)g	
Nasal	m			n ɳ	ɲ	n	
Affricative					ʧ ʤ		
Fricatives	f		θ ð		ɣ		h
Semivowels		w		r	y		

The following is the descriptive analysis of the distinctive consonants phonemes in Standard Gikuyu (United Kikuyu Language Association (1944).

The consonant phoneme /t/ is realized as a voiceless alveolar stop as in /tarada/ *taraanda,* while /k/ is realized as a voiceless velar stop as in /karataði/ *karatathi.*

The phenome /b/ is ralised as a voiced prenasalised bilabial stop as in /bake/ *mbaki.* The sound /d/ is realized as a voiced prenasalised alveolar stop as in /dahi/ *ndahi.*

The phoneme /g/ is realized as a voiced prenasalized velar stop as in /gai/ *ngai* while /f/ is realized as a bilabial dental fricative as in /fata/ *bata.* In traditional orthography the sound is represented by the consonant symbol /b/. It is realized as /f/ which is equivalent to the South British English (SBE) phoneme /f/.

The phoneme /d/ is realized as an inter-dental stop fricative as in /ðiaka/ *thiaka.* This phoneme is voiced especially when accompanied by the front vowels. It is realized as a voiceless sound / θ / when it is used with the front /i/ vowel.

The alveolar trill /r/ is mainly produced by the rapid series of flaps induced by the airstream as it is forced out as in/ratiri/*ratiri* and /reha/*riha.* The phenome /m/ is realized as a bilabial nasal as in /mahɛni/*maheni,* whereas /n/ is realized as an alveolar nasal as in the word /nana/ nana while /ɲaɲa/ *nyanya is prenasalized.* The consonants phoneme /θ/ is realized as a dental voiceless fricative nasal as in /θi θi/ *thithi.* The phoneme contrasts with the voiced dental fricative /ð/.

The sound /j/ is realized as a semi vowel as in /jarea/yaria while the phoneme /w/ is realized as a glide since it is closely related to semivowels such as /y/. The sound /ŋ/ is articulated as velar nasal as in the word / ŋodu/ *ng'ondu.* The sound /ɣ/is articulated as alveolar fricative as in / ɣoro/*goro* whereas the phoneme /tʃ/ is realized as an affricative as in /tʃoro/ *coro.* The phoneme /ʤ/ is articulated as /ʤara/ *njara,* /ʤora/ *njora.*

Gikuyu speakers retain the phonemes in borrowed words as follows:

/t/ is retained as in *taranda* and used as alveolar voiceless stop

/k/ is retained as in *karatathi* and used as voiceless velar stop

/b/ is used as in *mbaki* and realized as prenasalised alveolar stop

/d/ is used as in *ndahi* and realized as prenasalised velar stop

/g/ is retained as in *ngai* and realized as prenasalised velar stop

/f/ is phonetically articulated as *bata* and realized as a bilabial fricative, orthographically. Represented by b

/ð/is pronounced as *thiaka* and realized as inter-dental voiced affricative

/θ/ is pronounced as in *thithi* and realized as inter-dental voiceless fricative

/r/ is pronounced as *ratiri, reha* and realized as trill alveolar

/m/ is pronounced as *mahɛni* and realized as bilabial nasal

/n/ is articulated as *nana*, *nooti* and realized alveolar nasal

/r/ is pronounced as *nyanya* and realized as palatal nasal

/ŋ/is articulated as *ng'ondu* and realized as velar nasal

/ɣ/ is pronounced as *gatagati* and realized as a palatal fricative.

/ʤ/ is pronounced as *njara, joora* and realized palatal velar

/ʧ/ is pronounced as *coro, coka* and realized as affricative

/y/ is articulated as *goro, guthii* and realized as fricative velar.

/w/ is articulated as *wamu, wene* and realized as semi-vowel glide

/j/ is pronounced as *yene, yania* and realized as semi-vowel

/h/ is pronounced as *haha haria* and realized as glottal.

The analysis and description of sound units is restricted to syllabic units as opposed to individual vowel phonemes since Gikuyu is a syllabic and tonal language. The can only explain briefly how the distinctive Gikuyu vowel phonemes are applied in its vocabulary.

The vowel /a/ is realized as a central vowel while the vowel phonemes /i/, /e/ and /ɛ/ are realized as front vowels.

The vowels /u/, /o/ and /ɔ / are realized as back vowels. These vowels are voiced and they combine with consonant phonemes leading to realization of meaningful word sound structures whose patterns are cvcv, cvv and cvcvv. All Gikuyu words have a final voiced articulated vowel. Nasalised sounds in words containing the consonant sound clusters mb, nd, ng', nj and ny have the phoneme structure ccvccv or ccvcv.

Lengthening of vowel phonemes is a significant feature in Gikuyu because the language uses tones to give new meaning and achieve emphasis in the pronunciation of words. The lengthening and changing of the tone of a vowel phoneme has a significant semantic implication. Lengthening is orthographically marked by doubling of vowels as follows: *thaa* (watch), *cooka*(return(ʧɔːka), *iiria* (those) and *ko:ria* (ask). The short forms are orthographically written in single vowel as follows; *tha* (mercy) *coka* (chalk), *iria* (lake) and *kuria* (grow). In this study we have used the mark / : / before the vowel sound to indicate lengthening of the vowel phonemes in for example thaa /a: /, eeheria/, /ɛ: hɛria/, iiria /i: ria/, /, cooka/ʧɔːka/ njuu / ʤoː/ and /u:/. Lengthening is always accompanied by raising of the pitch and tone as in the following examples: haaria /ha:rea/, ahootwo /ahɔːtwo/, heenia /he:nia/, and curia /ʧu: ria/. The description of Gikuyu vowel phonemes is important in this study because it provides a relatively clear picture of the Gikuyu syllabic sound patterns which speakers of Gikuyu would use when faced with foreign sounds patterns. I need to point out that the language uses about 41 diphthongs. Some of the diphthongs are used as meaningful independent words such as *uaa* (peel), *oi* (pickers or lifters) while others are merely used as response vocative words such as *ia* and *iuu.* Gikuyu is a language which uses syllabically patterned word forms. It is a language in which consonants are generally combined with vowel phonemes where consonant clusters are not used as in English. Any loan word which uses consonant clusters as I intend to demonstrate is subjected to modification and simplification through overgeneralization strategies. English words which have consonant clusters are pervasive. Once adopted by speakers of Gikuyu they undergo this process. Out of a sample of an inventory of 1920 loan words which entered Gikuyu mainly as a result of interaction between Speakers of English and Kiswahili, a corpus of 80 loan words were identified for discussion and elaboration of phonological simplification and modification.

3.1 Simplification and modification of phonemes in loan words.

The positions which the speech organs take up in continuous movements where one movement perceptively glides into the next in unbroken chain is critical in providing a rational speech production according to Roach P (1983) and Daniel Jones (1991). One obvious unit for description is the word the speaker who listens to a foreign word attempts to produce in a meaningful setting. The movement that is involved in the production of a word are too many to perceive and too varied if the word is a long one. Gikuyu speakers divide a word into smaller units giving rise to a syllables which they can pronounce.

Syllabic structures give rise to segments which speakers of Gikuyu perceive to be successive in specific positions in the complex set of movements which the syllables consist. Overgeneralization strategies take place at segments level where speech sounds fall into two classes namely the vowels and consonants. Consonant and vowels produce traditional categories deriving ultimately from the literature of Greek grammarians which they considered significant in speech production. The concepts are somehow ambiguous and the terms are vaguely used. For example, when teachers and students refer to *a, e , i o, u* as the five vowels of Gikuyu during literacy teaching, they are actually referring to letters of the alphabet and not sound symbols. We are aware that vowel speech sounds which are produced when the air stream from the lungs is not blocked in any way in the

mouth or the throat in Gikuyu can lead to production of a meaningful sound. It is mainly in this area that vibrations of the vocal cords lead to production of the voiced vowel sounds.

It is therefore unlikely without extensive practice that speakers of Gikuyu would produce English sound patterns in similar ways like the English speakers do.

The critical question is concerned with what speakers of Gikuyu perceive and recognize as authentic meaningful sounds when they listen to foreign English sounds leading to attempts to produce foreign sounds. An attempt to produce foreign sounds does not necessarily lead to pronunciation patterns that are similar to those of native speakers of English. Speakers of Gikuyu attempt to produce the sounds of foreign loan words with little success and this leads to creation of new words which are neither Gikuyu nor English. In fact the expression *true tea* is realized as *turungi* while *coffee alone* is realized as *kabiaru* and *carrier corps* is realized as kariokoo by Gikuyu speakers.

All the vowels which are prominent in Gikuyu are voiced.

Some vowel sounds are produced with the lips rounded while others are produced with the lips unrounded and even spread out wide. For example the sound/ o / involves rounding of the lips while the sound /ɔ / is produced with the lips spread horizontally. The final feature of vowels concerns their length. The length of the vowel is affected by the adjacent consonants and rhythm. It should be remembered that there are some vowels which are said to be longer than others. For example / i / is longer than /o/. Some phoneticians prefer to emphasize this by placing diacritic marks which I have adopted for the purpose of this analysis after the long vowel e.g. / i: /.

3.2 Diphthongs of Gikuyu

Gikuyu diphthongs are unique in that they constitute speech sounds which are usually distinctive vowel sounds involving two vowels with one vowel gliding to the other. They are roughly speaking combinations of two vowel sounds merged into the time space of one long vowel; in effect they contain a glide within one syllable from one sound towards a second sound and this is why some phoneticians prefer to call them vowel glides. In the actual pronunciation of a diphthong there will be a slight movement of the tongue towards the articulation of the second sound. This does not occur in the production of a normal vowel.

3.3 Phonological Processes in Loan Words

Phonological simplification and modification of phonemes in the pronunciation of loan words by speakers of Gikuyu follows a systematic and regular pattern. It is basically governed by either the correspondence or non-correspondence of prominent phonemes in the source language and those which are dominant in Gikuyu. Kiswahili for example uses a large number of phonemes which are similar to those of Gikuyu. The places of articulation and manner of articulation are almost similar. Therefore, most loan words which are adopted by Gikuyu speakers from Kiswahili undergo minimal but significant modification and simplification as in for example *murango (mlango), kibandi (kipande), bundi (fundi), mboga (mboga), mucumari (msumari), ndawa (dawa) and cenjia(change).*

The pronunciation patterns of loan words which have been adopted by speakers of Gikuyu from English and other European languages such as Latin, Greek and French have been subjected to major changes as a result of noticeable and marked differences between Gikuyu and these languages. Whereas Gikuyu is a tonal language and uses syllables in end position of its words, English and many European languages are non-tonal languages and do not use voiced vowels in end position of words. Some words which are used in English contain consonant clusters whereas Gikuyu does not use consonant clusters. There are also consonant and vowel phonemes which are

significant and distinctive in English and not in Gikuyu. The non-correspondence of both Gikuyu consonant phonemes and vowel phonemes with those of English makes speakers of Gikuyu to employ strategies of either deletion of sounds or addition of familiar sounds. The following chart shows the distribution of the prominent Gikuyu consonant phonemes in relation to those of English.

Gikuyu	-	b	t	d	k	g	m	n	-	ɲ	ŋ	r	-	dʒ	tʃ	-	-	f	ð	θ	ɣ	h	j
English	p	b	t	d	k	g	m	n	v	-	ŋ	r	ʃ	dʒ	tʃ	s	z	f	ð	θ	-	h	j

There is evidence to show that nasalisation in the pronunciation of the consonant phonemes such as / d/, / g/, / b / and / dʒ/ in which each of the sounds is preceded by the nasalized /n / sound does not appear to be a prominent feature in all the six dialects of Gikuyu. Additionally the plosive phoneme / b / is shown by a number of scholars (Amstrong 1967) and Heine Mohlig (1980) as containing the sound / m / in some dialects where it is nasalized and realized as *mbage, mbathi.*

Nasalisation of these phonemes is more prominent in the Southern dialect of Gikuyu and less distinctive in the Northern dialect.

There are some consonant sounds which do not feature in Gikuyu such as /p/, / s /, / v/, / s /, / ʃ / and /ʒ /. Consequently, loan words which are realized with these consonant sounds undergo significant modification which involves consonant replacement and vowel realignment. The consonant sound / p / is modified and replaced with the consonant sound /f/ as in *padre* which becomes *batiri* while *kipande* becomes *kibandi*. The initial consonant sound in the word *police* changes and it becomes *borithi* while the word *report* changes its consonant sound so that it becomes *riboti* in which /b/ is a bilabial fricative. The Gikuyu consonant sound /f/ is represented by the letter *b* in traditional orthography and is pronounced as a fricative /f/. Other examples are cupboard which becomes *kabondi.* The modification of sounds in the following words is significant:

Rupees becomes *rubia*
Hospital becomes *thibitari*
Group becomes *ngurubu*
Panga becomes *banga*
Powder becomes *bonda*
Pawpaw becomes *ibabai*
Path becomes *bathi*

Plaster becomes *burathita*
Point becomes *boiniti*
Portuguese becomes *Birigii*
Post becomes *bothita*
Puncture becomes *banja*
Purse becomes *kabeti*

In a few cases the consonant sound / p / is modified and realized as a bilabial nasal plosive as in the following examples in which sound modification follows a regular pattern as follows;

Packet becomes *mbagiti*
Picture becomes mbica

Pound becomes *mbauni*
Pyrethrum becomes *mbeniku*

These examples show that most loanwords which use the foreign sound / p/ undergo some internal changes in which the consonant phoneme / p / is replaced and modified to a bilabial fricative /f/ sound which is represented by the letter *b* in Gikuyu. A voiced final vowel sound / i / is added to all loan words in English which are realized with a silent vowel consonant in end position. Most words which are realized with a specific vowel sound which is sounded do not undergo any change. In the words *picture, calculator* and *powder* for example, a vowel phoneme which is close to the /a/ vowel is sounded in the last syllable. The sound is retained in the adopted words and it is voiced so that the simplified pronunciation becomes *mbica, kaburaita and bonda.*

Although the plosive velar / k / phoneme features in both English and Gikuyu languages, the speakers of Gikuyu appear to substitute the velar plosive sound in loan words possibly through generalization with the fricative velar sound */i/* as in the words *doctor* which becomes *ndagitari.* Other examples include:

Scot which becomes *thigoci*
Cricket becomes *kirigiti*
Tractor becomes *karagita*
Market becomes *marigiti*

Court becomes *igooti*
Catechism becomes *gatigithimo*
Packet becomes *mbagiti*

In some cases the velar plosive sound /k/in loan words is substituted with consonant velar plosive sound /g/ which is nasalized in some dialects. Therefore the loanwords *car* becomes *ngaari* in Gikuyu.

While the English palato-alveolar fricative sounds / s /, / ʒ / and / ʃ / are prominent phonemes which feature in many English words, they are not used in Gikuyu. The realization of these sounds by speakers of Gikuyu as they learn the pronunciation patterns of English words present major difficulties.

In the case of English loan words which have been adopted and naturalized by speakers of Gikuyu, the two consonant sounds are replaced with the palato-alveolar phoneme affricative /tʃ/ as in the word *shirt* which becomes *caati* while *school* is modified to *cukuru. Share* becomes *cia* while *shilling* becomes *ciringi.* Other examples which undergo sound change are words like *sheet* which becomes *ciiti,* while *sharp fire* becomes *cabaya.*

The alveolar fricative consonant sounds */s/* and */z/* which are also prominent in English are realized hi loan words by speakers of Gikuyu as dental fricative consonant sound /ð/. Sometimes the consonant phoneme */Ө/* is used. Most dialects of Gikuyu realize these two phonemes with varying shades of emphasis except the Ki-Mathira dialect which tends to put emphasis on the phoneme so that the sound quality of the consonant phoneme is pronounced like the English consonant sound */s/.* Foreign loan words which were primarily sourced from English underwent sound modification and simplification as illustrated in the following examples in which two consonant sounds are modified by speakers of Gikuyu leading to the new words in Gikuyu language;

salad becomes *tharari*
scout becomes *thikauti*
secondary becomes *thekondari*
sign becomes *thairi*
socks becomes *thogithi*
soda becomes *thonda*
soup becomes *thubu*
sport becomes *thiboti*
stamp becomes *thitembu*

In this study, it was reported and observed that there is consistency and systematicity in the simplification and modification of loan words. The modification tends to conform with the syllabic structural patterns of Gikuyu and does not create unauthentic pronunciation sound pattern environment since there exists harmony in syllables.

Expressions in foreign words which comprise two or three words are borrowed and adopted as one word. The expression *sharp fire* becomes *cabaya* and *royal surburbs* is simplified to *roisambu*, while the popular breed of daily cattle from Guernsey in the Channel Islands is modified and it becomes *ngaruthi.* The two words, *Castle Inn* which is the name of a popular hotel in Kenya were restructured and became *gatharaini* in Gikuyu and *Kasarani* in *Kiswahili.* Gikuyu speakers appear to have the capacity to organize the foreign sounds input in similar ways relative to the familiar sound patterns of Gikuyu and make generalizations about pronunciation strategies. This is what Dulay and Burt 1972: 236 has identified as the creative construction hypothesis.

Although sound simplification is of central importance in characterizing dynamics of speech production in second language contexts, no data are available and literature in this area is scanty. Additional work in this area is urgently needed judging from informal observations of actual pronunciation patterns of loan words. Some speech production phenomena can be said to have high prevalence consonant simplification which is observed to occur in 90% of all potential instances. In the case of consonant simplification and modification of consonant clusters, the study conclusively reports instances of nearly 98% of vowel insertion as in the words cricket which is simplified to *kirigiti,* chrismas is modified to *kirithimathi* while guardroom is simplified to *kandurumu* etc.

Simplification of phonemes in loan words ultimately leads to coinage of new words. The newly formed words tend to retain their essential grammatical categories when they are used the adopted language.

Modification and simplification of phonemes is an active dynamic process which is not restricted to the available phonemes in a particular language. The words *computer (kompiuta), calculator (kakiurita) rubber (raba) television (terebiconi)* etc have joined the influx of new entrants to Gikuyu language in the recent past.

4.1 SUMMARY AND RECOMMENDATIONS

This study was planned to investigate whether there is any prominent change in the pre-nasalization of voiced sound patterns which precede the consonant phonemes /b/, /d/, /g/, /ŋ / ɲ /, /n/ and /dʒ/. In traditional orthography, these sounds are represented as mb, nd, ng, ng', ny and nj as in the words *mbembe* (maize), *ndundu* (owl), *ng'aragu* (famine) *nyanya* (tomato) and *njera* (prison). The traditional spelling system was intended to teach reading and writing skills of Gikuyu. It was never intended to teach the listening and speaking skills. Considering that the written form of the sound patterns were authoritatively recognized as the "correct" sound patterns which should be emulated by the educated speakers of Gikuyu, phoneticians (Meinholf Warmelo (1932), Armstrong E. L (1967), and Christian missionaries indicate in their representations that these stops are preceded by a nasal.

The findings in this study show that there was no significant prenasalization of the sound patterns containing the consonants /b/, /d/,/ŋ/ɲ / and /g/ in their pronunciation of Gikuyu words. We can conclusively state that there was no observed prominent difference between the Gikuyu consonant phonemes and the English consonant phonemes among the speakers. This can be attributed to a number of factors:

(i) The articulatory environments in which these sounds are used is no longer dependent on Gikuyu alone. The speakers of Gikuyu are exposed to English and Kiswahili mainly through teaching and learning where oral speech skills are taught through drills. The teaching and

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learning has an effect in the modification and simplification of sound patterns. The reciprocate effect of this process is the dropping of the nasalization altogether by speakers of Gikuyu.

The dropping of the voiced nasals /m/ and /n/ which precede the voiced stops /b/, /d/, /g/ and voiced affricative /ʤ/ is a common observed feature among modern speakers of Gikuyu. The nasalised consonant phoneme /n/ is no longer a significant feature in the pronunciation of loan words such as secondary (*thekondar)i*, soda (*thonda*) and talent (*taranda*). Similarly the nasalised consonant phoneme /m/ is not prominent in words such as *mbata* (duck) and mbembe (maize). The pronunciation of these words approximate the English sounds /b/ as in the word *bus* and *basket* and /d/ as in the words *desk* and *done.* The popular Maasai name *ilmogog* was modified and simplified by the speakers of Gikuyu through deletion thus producing the place name Limuru.

(ii) Another factor that may have led to reduction or deletion of nasals may be attributed to code – mixing and code- switching particularly in conversation where nasalization maybe cumbersome as it affects speech rhythm.

(a) *Niaragurire thuuti ya* secondhad (He bought a *secondhand* suit) (code mixing)

(b) *Ndingiimanjini magicererwo* (I can't imagine them being late

(c) *Ndiri na kirathi* (I have no class (lesson)

In sentence (a) the word *secondhand* retains the English sounds pronunciation patterns while the word suit is modified to *thuuti* in the same sentence. The Gikuyu negation prefix signaling denial or refusal *ndingi-* is affixed to a loan word *imanjini* (imagine) to create the new expression *ndingiimanjini.*
The syllables in the word *ndi-ngi-i-ma-nji-ni* were not preceded by nasalization.
The nasal phoneme was dropped by speakers in order to maintain speech rhythm. The same deletion process is applied to sentence (c) where the word *ndiri* (don't have) is used.
Sound substitution and deletion of sound boundary in order to preserve the phonological sound patterns of Gikuyu is extensively used in loan words.
The study confirmed that foreign loan sound patterns that showed correspondence with Gikuyu sound patterns underwent minimal modification while complex foreign sound pronunciation patterns containing consonants clusters and unstressed final consonants phonemes showed marked simplification and modification. Modification of simplification of sounds decreased relative to the degrees of correspondence or non correspondence of Gikuyu pronunciation sound patterns and those of foreign loan words.

4.2 Conclusion

Sound modification and simplification in loan words is a significant feature since it leads to creation of new words in a new linguistic environment. It introduces unfamiliar semantic attributes in the borrowing language. Contrastive linguistics need to address the pedagogical as well as the grammatical challenges that are two obvious when two languages are in contact. The critical question which remains unanswered is concerned with the relationship between adult language learning and language acquisition.

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