Phonemic nativization of EkeGusii loanwords from English: A constraint based approach

George Morara Anyona
Kisii University.

ABSTRACT

This paper discusses the phonemic changes that EkeGusii EkeGusii loanwords from English undergo in the process of being accommodated into the EkeGusii phonological system. The data used in the paper is from native speakers of EkeGusii and Optimality Theory (here after OT) is used in the analysis of the data. This paper is different from most papers of its kind in that it uses a constraint based theoretic framework unlike others which either do not use any theoretical framework or use rule based theories when they do . The paper focuses on vocalic and consonantal phonemic changes that EkeGusii loanwords from English undergo in order to be accommodated into EkeGusii phonological structure. For example, the paper analyzes whether English Phonemes maintain their features or phonemic status upon entering EkeGusii phonology given that some phonological processes such voice dissimilation affect EkeGusii and not English. The question the paper seeks to answer is; do these processes affect EkeGusii loanwords from English? For example, the English word tractor /trə.ktə/ is nativized as /ke.ra.ɣi.ta/ [ke.ra.ɣi.ta]. As can be observed, there is voice dissimilation between [k] and [r] and [ɣ] and [t] in the nativized form. This is explained by Dahl's law of dissimilation.

1. Introduction

This paper deals with English and EkeGusii languages. EkeGusii is "an eastern language spoken in the northern part of the region between the eastern shore of Lake Victoria, or Lake Nyanza and the eastern branch of the Great Rift Valley. This region which includes the islands along the lakeshore will be designated in geographical terms as East Nyanza, so that EkeGusii may be classified more specifically as an East Nyanza Bantu language. It is labeled E. 42 by Guthrie (1971, vol. 3:45, vol. 3:11-15)" Cammenga (2002:20)). As Cammenga points, EkeGusii language is spoken exclusively in Kenya. However, Cammenga wrongly observes that the language "is more commonly known by its English name, viz. Kisii." The correct position is that the language does not have an English name as claimed by Cammenga. What Cammenga calls the English name of the language (Kisii) is a name commonly used to refer to the administrative and business town of the region or sometimes to refer to the entire region occupied by the AbaGusii people. Therefore as Cammenga points out, "in the language itself, its proper name is [ekeɣusii] (EkeGusii), it is spoken by the [aβaɣusii] (AbaGusii) people" (2002: 20).

EkeGusii boarders the following languages: Kipsigis, a Nilotic language, to the north and Partly to the East, Maasai, also Nilotic, to the east and partly to the southeast, DhoLuo, which is equally Nilotic, is spoken to the west and southwest of EkeGusii, and finally Kuria, a Bantu language (E.43), is spoken to the south of EkeGusii and "of all the East Nyanza Bantu Languages it is probably most closely related to EkeGusii" (Cammenga 2002:21). The language is spoken by about three million people (Kenya National Bureau of statistics 2009), scattered world over. The next sub- section gives a phonological overview of EkeGusii language.

The paper analyzes how EkeGusii loanwords from English are nativized. In particular, the paper shows how Ekegusii language deals with borrowed phonological units (phonemes) from English using constraints interaction.

2. Theoretical Background

The analysis in this paper is based on the constraint based OT approach to phonology (Prince & Smolensky 1993). This is preferred because as a number of linguists have shown, in rule based models, the nativization of loanwords requires rules that are otherwise unmotivated in the borrowing language (Hall and Hamman 2003, silverman 1992, and Yip 1993). For example, silverman (1992) observes that when the English word game /geim/ is borrowed into Cantonese, the word surfaces as [kɛm].In this example, one could require a rule converting /g/ to [k] and another one which changes /eɪ/ to [ɛ], but the problem, Hall and Hamman observe, is that Cantonese does not have these phonological rules in its system because it has neither /g/ nor /eɪ/. In many languages, the nativization of loanwords is captured in terms of prosodic requirements that do not require rules. For example, according to Gussenhoven and Jacobs (1998), in Hawaiian with neither complex nor closed syllables, an English word like school /sku:l/ surfaces as (kola), but Hawaiian phonology has no phonological rules deleting word edge consonants.

It is on the basis of examples such as these that linguists have argued that constraint based approaches, in particular optimality theory, are better suited to capturing the nativizaiton of lonwords (e.g. Yip 1993, Jacobs and Gussenhoven 2000, Golston and Yang 2001). In OT for example, one would require for the native vocabulary of

Tele:
E-mail address: kaonianyona@yahoo.com

Hawaiian MARKEDNESS constraints ensuring that all syllables are of the form CV, namely ONSET and NOCODA, and the ranking of these constraints ahead of FAITH constraints which prevent the deletion or insertion of segments and the change of features. Significantly the ranking of MARKEDNESS (i.e. ONSET and NOCODA) over FAITH in the native lexicon of Hawaiian also captures the nativization of loanword like /skul/ to [kol]) (Hall and HAmman 2003).

In this paper, it is argued that the syllabic changes observed in the nativization process of loanword in EkeGusii can be insightfully captured and analyzed within Optimality Theory. This conclusion is reached because the changes that take place cannot be analyzed or expressed with phonological rules but they do follow given MARKEDNESS constraints and two FAITH constraints which are independently required in the native lexicon. Using the Hawaiian example givne by Gussenhoven and Jacobs (2000), it is here argued that phonemic changes in loanwords in EkeGusii require the general ranking of MARKEDNESS over FAITHFULNESS. (Hall and Hamman 2002).

Prince and McCarthy (1993) distinguish four major properties of OT. These are:

Violability: constraints are violable, but violation is minimal
Ranking: constraints are ranked on a language particular basis; the notion of minimal violation (or best satisfaction) is defined in terms of ranking.

Inclusiveness: the candidate analyses which are evaluated by the constraint hierarchyare admitted by very general considerations of structural well formedness; there are no specific rules or repair strategies with specific structural descriptions or structural changes or with connections to specific constraints.

Parallelism: best satisfaction of the constraint hierarchy is computed over the whole hierarchy and the whole candidate set.

Significance of Constraints
This theory captures linguistic phenomenon by constraint ranking. Constraints therefore form the basis on which this theory is anchored. The theory recognizes two types of constraints which are inherently is conflict: Faithfulness constraints; these are those that judge outputs on how similar they are to the inputs. A faithfulness constraint demand that outputs be similar to inputs; they do not tolerate changes, therefore, they judge outputs (production) in relation to the inputs (abstract underlying forms). Markedness constraints; these are those that impose restrictions on outputs. They spell how outputs should be. They judge outputs on how easy they are to be produced. These are outputs only constraints. They are responsible for the changes that are witnessed in productions because they demand what outputs should be.

3. EkeGusii Phoneme structure (segmental phonology)
Vowels
So far, little has been done on Ekegusii language, especially in the area of phonology.
However, Whiteley's (1960) pioneering study in the language lists seven basic vowels, which are described by Cammenga (2002) as repeated in (1).
1) EkeGusii vowels

	i	e	ɛ		a	ɔ	o	u
High	+	+	-	-		-	+	+
Mid	-	+	+	-		+	+	-
Back	-	-	-			+	+	+
ATR	+	-	-	+		-	-	+

This is how this paper will characterizethese vowels. The paper confirms that indeed, like other studies carried out in the language (Ongarora, 1996, Bosire, 1993 among others), Ekegusii has seven vowels as described in (14) above. This is further supported by a survey carried out by the University of California, Los Angles Phonological Segment Inventory Database in 1984, which found out that most Bantu language surveyed have between five (5) and seven (7) vowels (Odlin 2000). EkeGusii languages and most other Bantu languages fall within the seven vowel system. The survey above places a seven vowel language system in the cardinal vowel diagram designed by Jones (1956) as illustration (2):

2) EkeGusii vowel chart
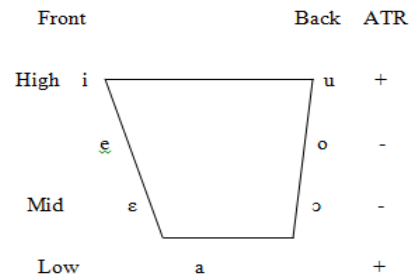
(Adapted from Cammenga 2002)
These vowels occur in height harmony with each other. The front low and mid vowels (/e/ and /ɛ/) occur in harmony with the back rounded vowels /o/ and /ɔ/) respectively; that is, /e/ occurs with /o/ while /ɛ/ occurs with /ɔ/. This is vowel height harmony. Data (3) illustrates:

3) Vowel height harmony in EkeGusi

/e/ and /o/	/ɛ/ and /ɔ/
[eβando] /e.Φa.ndo/ 'maize'	[omoeto] /ɔ.mɔ.ɛ.tɔ/ 'trap'
[embiro] /e.mbi.ro/ 'soot'	[omondeere] ɔ.mɔ.ndɛ.ɛrɛ/ 'type of weed'
[omonto] /o.mo.nto/ 'person'	[omoerio] /ɔmɔɛriɔ/ 'end'

The rest of the vowels: /i, u/ and /a/ occur without these restrictions.

Consonants
Cammenga (2002:53) has given what he calls Gusii, nasals and glides inventory which is repeated in (4) below:
4) EkeGusii consonants, nasals and glides inventory

	Bilibial	Alveolar	(Alveolo-) Palatal	Velar
Continuant	/β/	/s/		/γ/
(Flapped liquid)		/r/		
Obstuent	[b]	/t/		/k/
				/g/
Affricate				/c/
				/dŽ/
Nasal	/m/	/n/	ñ	/ŋ/
Glide	/w/		/y/	
	[Cw]		[Cy]	

I make the following remarks about the consonant inventory in (4)
Firstly, it should be noted that Cammenga's inventory of EkeGusii consonants is an improvement of Whiteley (1960) inventory. In Whiteley's inventory are the following consonants which Cammenga does not include in inventory (22): [(p)], ny and [ɣ (j)]. As observed by both Cammenga and Whiteley, the voiceless, bilabial stop [p] is only found in Ekegusii words borrowed from languages with the sound, such as Kiswahili and English. It can therefore be concluded that the sound is not found in EkeGusii language, except in "one or two idiophones" as suggested by Whiteley. The idiophone (s)

suggested by whitely would be the emphatic form[p] which means 'completely', as in (5):
5) i) ita pi /ita pi/ 'kill completely
ii) genda pi /γɛnda pi/ 'go completely'
/pi/ in these cases emphasizes the given actions.

Secondly, Cammenga (2002) replaces /ny/ with /ñ/ and names /j/ a glide instead of a semi vowel. This paper will use the IPA symbol /ŋ/ to represent the nasal palatal alveolar sound and rename /j/ an approximant.

Thirdly, following early arguments in this paper that EkeGusii does not have consonant glide sequences, but instead that the glides (now approximants) are realized as secondary articulations, what Cammenga includes as consonant glide sequences (Cw andCy) will not be included in the inventory. The approximant /w/ will be excluded all together from EkeGusii consonant inventory, meaning that it will only be treated as a derived secondary consonant ([C[w]]), where C is a consonant.

Fourthly, the pre-consonantal stops [b], [d] and [g], like the secondary approximants above will be treated as derived consonants. They are therefore not part of the phonological system of the language.

Fifth and finally, the affricates that Cammenga (2002) represents with the symbols /c/ and /dŽ/ will in this paper be represented as /tʃ/ and /dʒ/ IPA symbols respectively/.

Following the foregoing observations and arguments, EkeGusii consonants will be as represented in inventory (6):
6) EkeGusii consonant inventory

	Bilibial	Alveolar	(Alveolo-) Palatal	Velar
Continuant (tril)	/β/	/s/ /r/		/γ/
Obstruent	[b]	/t/ [d]		k [g]
Affricate			/tʃ/ /dʒ/	
Nasal	/ m/	/n/	/ŋ /	/ŋ/
Approximants	[w]		/ j/	

Mostly, the voiced EkeGusii consonants seem to occur with the vowels /e/ and /o/, while the voiceless ones occur with the vowels /ɛ/ and /ɔ/. The rest of the vowels occur with consonants without such restrictions. Data (7) attests to this observation.

7) Occurrence of consonants with vowels

/e/ and /o/ /ɔ/ and /ɛ/
[ebando] / eβando/ 'maize' [omoeto]/ɔmɔɛtɔ/ 'trap'
[egesanda] /eγesanda/ 'calabash' [etoigo] / ɛtɔixɔ/ 'floods'
[emondo] /emondo/'gizzard' [omoerio]ɔmɔɛri…/ end'

4. Phoneme nativization

English loanword nativization into EkeGusii at the phonological level is governed by the syllable structure of the borrowing language. This is to say that a borrowed word when being nativized normally violates some constraints of syllable well formedness of the borrowing language. The borrowing language then tries to avoid the structure of the loaning language. It is this avoidance that leads to conformity, because the foreign structure is avoided at the expense of the native one, hence nativization. For example, many languages avoid cluster consonants and onsets. EkeGusii uses a number of avoidance strategies to repair the nonconforming syllables of the English loanwords. Vowel insertion and Phoneme Feature Change are among the many of these avoidance strategies.

Phoneme change

According to Sapir (1964), languages are loosely equivalent. This means that languages, to a large extent, have slightly different inventories, with some equivalence (Zivenge, 2009). A number of sounds in English loans into EkeGusii are not recognized. In other words the English sounds do not exist in EkeGusii sound inventory (cf. Anyona, 2011). In order for these sounds to be accommodated in their new environment, two approaches are adopted, i.e. substitution and deletion. This paper considers the former.

Substitution

In this case, English sounds not present (and therefore not recognized) by EkeGusii are replaced by those sounds present in the receiving language. Substitution is the replacement of one linguistic item by another at a particular place in a structure (Ibdoil 2004). Both vowel and consonant segments are substituted during the process of nativization of English loans into EkeGusii. We start with consonant substitution.

Consonant Substitution

This is done to replace the English consonants not present in Ekegusii. A number of consonants found in English do not exist in EkeGusii. These include: /f/, /v/, /l/, /Ө/, /ð/, /z/, /ʒ/, and /ʃ/. As it has already been observed in this paper the voiced plosives /d/, /g/, and /b/ only occur with nasals' homorganistically in EkeGusii language and are effectively regarded as pre-nasals. It has also been observed that the plosive /p/ is only found in one or two idiophones, according to Whitely (1960). Cammenga (2002: 51) suggests that this plosive is "increasingly noticeable in the speech of the younger generation which has had contact with Swahili and English. This paper argues in favour of the fact that /p/ is a rare sound in EkeGusii and that if all the younger generation of the 1960s, when Whitely conducted his research on the language were using it, it was (is) only in nativized words from the languages mentioned by Whitely. Data (8) - (15) demonstrate how English consonant phonemes are substituted for by those of EkeGusii during the process of nativization:

(8) English /f/ and/v/ > EkeGusii /β/ as in;
i) father ⟶ [βaata]
ii) victory ⟶ [βikitori]
iii) faith ⟶ [βeiti)]

Substitution in (8 i) is as follows:
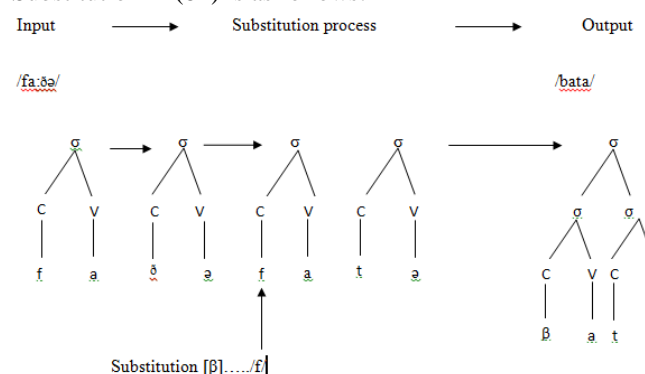
In OT theoretic terms, EkeGusii output on the syllable node in (8) above presupposes two constraints: NOCODA and FAITH C. Tableau (1) illustrates:

Input: / fəðə/ father

Tableau 1. EkeGusii loanword output [βata]

Input: (fəðə)	NOCODA	FAITH C
a) faðər	*!	*
b) fat	*!	*
c) ☐ βata		*

Ranking: NOCOA >> FAITHC
Candidate (c) is the winning output because it violates only the lowly ranked constraint in the language. Candidate (a) and

(b) violate the highly ranked constraint in the language i.e. NOCODA, which require that syllables to be codeless.
This demonstration indicates that the English /f/ is substituted for by EkeGusii consonant /β/. The possible explanation being that the two sounds share both place and manner of articulation features, Place of articulation being labial; while manner of articulation being fricative. Therefore, they are regarded as 'equivalents'.
(9) English /Ө/ and /ð/ > EkeGusii /t/ as in:

English	EkeGusii
i) thermos	tamosi
/Өɜ: məs/	[tamosi]
ii) thief	tibu
θi:f	tiβu]
iii) father	bata
fəðə	[βata]

(9) i can be represented on syllable nodes as (10) :
10) nativization of English / θ/ to [t]

Substitution English /θ/………EkeGusii /t/
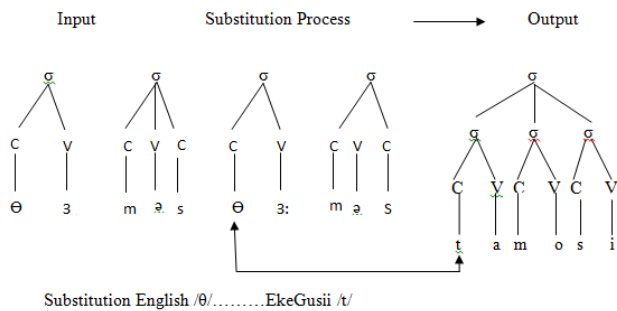
(10) shows that the English /Ө/ is substituted for by Ekegusii [t]. The voiced equivalent of the English /Ө/; i.e. /ð/ is also substituted for by [t] in Ekegusii. This is explained as follows: Firstly, EkeGusii does not have the two interdental fricatives and therefore, the nearest (in terms of pronunciation) equivalent (which is /t/) is the likely choice in this case. Sound [t] is characterized as an alveolar sound in Ekegusii (Whitely, 1960 and Camenga, 2002). However, as Cammenga (2002: 54) suggests "…though/t/ is characterized as an alveolar… it may be rendered as a voiceless interdental obstruent, possibly also as an alveolo-dental or perhaps dental-alveolar obstruent". This paper takes the position that the sound is an alveolo-dental obstruent and therefore excludes the possibility that it may be an interdental or a dental alveolar obstruent. Thus, [t] therefore is the likely choice as the substitute of the two English interdentals in the English Words loaned into EkeGusii.

Secondly, Ekegusii language lacks voiced consonants (except pre-nasal stops and affricate [ndʒ]) (Cammenga, 2002). This means that chances of the English voiced inter-dental /ð/ being an output in the nativized EkeGusii loans from English are minimal (if at all).

(11) further demonstrates how English consonants are substituted for by those of EkeGusii in the nativization of English loans into EkeGusii:

(11)

i) English /l/ >	EkeGusii /r/	
/elekʃn/	[ɛrɛkisoni]	'election'
/tɛlɛviʃn/	[tereβisoni]	'television'
/klæss/	[keraasi]	'class'

ii)English /z/ >	EkeGusii [s]	
[zirəʊ]	[siiro]	'Zero'
[zɔn]	[sooni]	'Zone'
[meiz]	[meisi]	'maize'

iii) English /ʃ/ >	EkeGusii [s]	
/ʃɔp/	[Sɔpu]	'shop'
/ʃi:p/	[sipu]	'sheep]
/ʃɔk/	[soki]	'shock'

iv) English /g/ >	EkeGusii [ɤ]	
/bæg/	[paɤi]	'bag'
/glu:/	[ɤuru]	'glue'

In (11 i), the English /l/ is substituted by [r] in EkeGusii because the voiced lateral sound /l/ is not present in the EkeGusii sound inventory, instead, it is an alveolar, just like [r], which replaces it in the nativized words.

The English fricatives /z/ and /ʃ/ in (11 ii) and (35 iii) respectively, are equally not found in EkeGusii sound inventory. They are both alveolar fricatives. /z/ shares place and manner of articulation with /s/, which is found in Ekegusii. /ʃ/ on the other hand shares voicelessness and manner of articulation with /s/; they are both voiceless fricatives. This explains why the EkeGusii voiceless, alveolar fricative [s] substitutes the English sounds /z/ and /s/ in the nativized words.

Besides the kind of substitution of the consonants described so far, there is also substitution of the voiceless English pre-nasal consonants /k/ and /s/ with their voiced equivalents in Ekegusii i.e. /g/and /z/ respectively and substitution of the voiceless English stop /k/ with EkeGusii voiced fricative [ɤ]. This is Dahl's law in operation (Bickmore 1998). Before presenting data to demonstrate the kinds of substitutions mentioned here, it is proper to define Dahl's law and demonstrate the fact that it is in operation in EkeGusii language synchronically.

Voice dissimilation (Dahl's Law)
According to Bickmore (1998), Dahl's law is the name of a dissimilatory process which in its most general form, voices the first of two voiceless obstruents (which, of course are separated by an intervening vowel). Guthrie (1967) observes that languages which show the effect of Dahl's law are found within his zones E20 - E50 – F20 and G60. It has also been argued that languages vary a great deal as to which languages vary a great deal as to which particular consonants undergo the rule, which consonants trigger the rule, and how the rule affects multiple targets within the same word (Bennett, 1967 and Davy and Nurse, 1982). According to Bickmore, languages also do differ as to whether there is any evidence that the rule is in operative synchronically. He contends that in EkeGusii, there is evidence that Dahl's affected [*k] diachronically. Bickmore's data is repeated in (12):
(12) /ɔkɔ-ɤɛsa/ 'harvest'
/oko-ɤoro/ 'leg'

In this case, the voiceless velar obstruent (/k/) in the prefixes ɔkɔ- and oko- respectively are substituted for by the voiced velar obstruent (/ɤ/) in the roots –ɤes and ɤor respectively. This process is still quite productive in the synchronic phonology of Ekegusii (Bickmore, 1998). This is exemplified by the class 15 prefix /ko-/ in data (13) below repeated from Bickmore (1998: 158).

(13)	/ɔ-kɔ-rɔɔt-a/	'dream'
	/o-ko-ɤor-o/	'foot'
	/o-ko-ŋw-a/	'drink
(b)	/o-ɤo-kana/	'deny'
	/o-ɤo-tuua/	'be blunt'
	ɔ ɤ/ɔ--sɛka/	'laugh'

The dissimilation process in this case is from the voiceless obstruent /k/ to the voiced obstruent /ɤ/ consonant in (13 a) and the other way round in (13 b). Dahl's law seems to

affect English loanwords into Ekegusii. Data (14) demonstrates:

(14) Dissimilation in EkeGusii loans from English

(a) English /k/ > EkeGusii /g/
   i) /bæŋk/   [e-ɸeŋg-i]
   ii)/driŋk/   [e-turuŋg-i]
   iii) /siŋk/   [e-siŋg-i]

(b) English /s/ > EkeGusii [z]
   i) /trəenspɔ:t/   [e-turanzipot-i]
   ii) /trænsfə:/   [e-turanzipβ-aa]
   iii) /a:nsə/   [e-ʔansa]

The following points about data (14) above are in order:

The dissimilation processes in the nativized words in the given data is not motivated by prefixes as in the non-nativized words discussed early, instead, the process seems to be triggered by the first consonants of the roots: in (14 a), the consonants of the voiceless obstruents. Similarly, in (14 b) the initial consonants of the roots are; /t/, /t/ and [ʔ] respectively. /t/ in the first two roots is voiceless hence /z/ as a pre-consonant. The third root however, presents an interesting scenario. First, the root does not have a phonological initial consonant; instead, it has an initial vowel (/a/). If we follow OT observations that all syllables must have ONSETS (Smolensky and McCarthy, 1993) and that phonetically, vowels are produced by free flow of air along the vocal tract (Clark, Yallop and Fletcher, 2007 and Crunttenden, 2011), then we can argue that the correct pronunciation of the English word 'answer' is [-a:nsə], where '-' must be a consonant. Deliberate and conscious production of the initial vowel in this word starts with a complete stoppage of the airstream at the glottis followed by continuous release of air. This is a characteristic of a glottal stop [ʔ]. Therefore, the English word is phonetically realized as [ʔa:nsə]. In its nativized form, the word will be realized as: ['ʔe-ʔansa]. The initial root consonant (i.e. the glottal stop is voiced, it will therefore trigger dissimilation in the final syllable hence the voiceless fricative [s].

Data (14 a i) can be analyzed in OT theoretic terms as in tableau (2):

Input: /bæŋk/

Tableau 2. EkeGusii output for /bæŋk/.

Input:	/bæŋk/	IDENT -IO-(F)	NOCDA
☐☐bæŋk			*
b)	βæŋk	*!	
c)	bæɲi	*!	*

Ranking: IDENT IO (F) >> NOCODA

Output (a) is the winning candidate in the tableau above because it violates the least serious constraint (NOCODA) in English language. All the other outputs violate the constraint IDENT-IO (F) which is highly ranked in the language. This is comparable to tableau (3):

Input: bank /bæŋk/

**Tableau 3. EkeGusii output for /bæŋk/**

Input:/ βaŋgi/	NO CODA	IDENT-IO (F)
a) ☞ [ɸa.ŋg.i]		*
b) [ba.ŋk]	*!	**
c) [be.ng]	*!	*
d) [ɸeŋg]	**!	*

Influence of the augment and prefix in phoneme change

Under phoneme change in the nativization process, there is also the influence of prefix structure which is different from that of the loaning language. Basically, most nouns in EkeGusii have prefixes which have a bi-morphemic structure. The prefix itself is divisible into two elements, namely an initial vowel, also known as augment or pre-prefix and the prefix, per-se (Bickmore, 1998). Data set (15) attests to this fact:

(15) Ekegusii
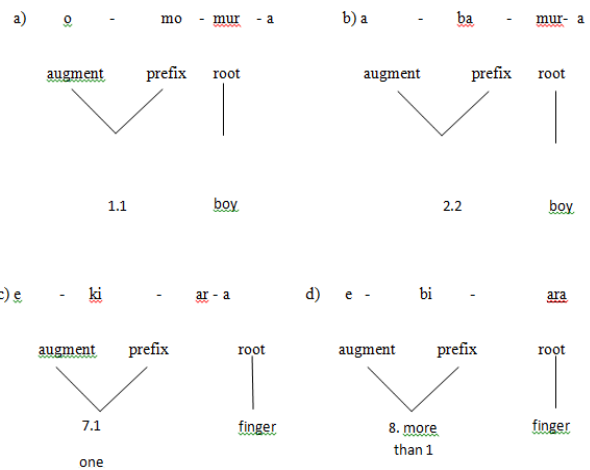
The augment and the prefix mark the class and the number of the noun. For instance, the augment and prefix in (15 a) mark the noun as class 1 and that the noun is in singular, while in (15b) the augment and prefix mark the noun as class 2 and that it is in the plural form.

Vowel substitution

EkeGusii has a vowel system that is different from that of English language, in the same way consonants of the two languages differ. However, the vowel difference between the two languages is more pronounced as compared to that of consonants. This is probably because as Anyona (2011) points out, English has more vowels as compared to EkeGusii language. Anyona points out that unlike EkeGusii language, which has only pure vowels or monophthongs; English has diphthongs and triphthongs as well. This means that there are many English vowels that are not recognized in EkeGusii language. Such vowels are therefore substituted for by those of EkeGusii. But the challenge here, however, is that while English has about 22 vowels (Cruntenden, 2011, Roach, 1983 among others), EkeGusii language has only seven pure vowels (Anyona, 2011, Cmmenga, 2002 and Whitely, 1965) which the 22 or so English vowels are substituted for in nativization of English words into EkeGusii. Data (16) illustrates:

(16) (a) English pure/monophthongs
(i) English /i/ and /ɪ/ >Ekegusii [i]
   /mi;t/   /e-miiti/   [emiiti] 'meat'
   /fiʃ/   /e-βiisi/ [eβiisi]   'fish'
(ii) English /æ/, /ʌ/, /ɜ/ >Ekegusii [a]
   /mæn/   /e-maani/[emaani]   'mean'
   /fɜ:n/   /e-βaani/ [eβaani]   'fern'
   /kʌt/   /e-kaati/ [ekaati]   'cut'
(b) English diphthongs
(i) English /əʊ/   Ekegusii [o] and [ɔ]
   /təʊ/   /e-too [e-too]   'toe'
   /həʊp/   /opu/ [opu]   'hope'
(ii) English /aɪ/ >   Ekegusii [aɛ]
   /baɪ/   [paɛ]   'buy'
   /aɪ/   [aɛ]   'eye'
(c) English triphthongs
(i) English /aɪə/ >   Ekegusii [aja]
i) /waɪə/   /e-waja/ [e-waja]   'wire'
ii) /faɪə/   /e-ɸaja/ [eβaja]   'fire'

To demonstrate how the English vowels in data (16) above are substituted for by EkeGusii vowels, example (16 a, I mi:t):

English /mi:t/ > Ekegusii [e-miiti].

Substitution of English /i: /…………………………..for EkeGusii /ii/
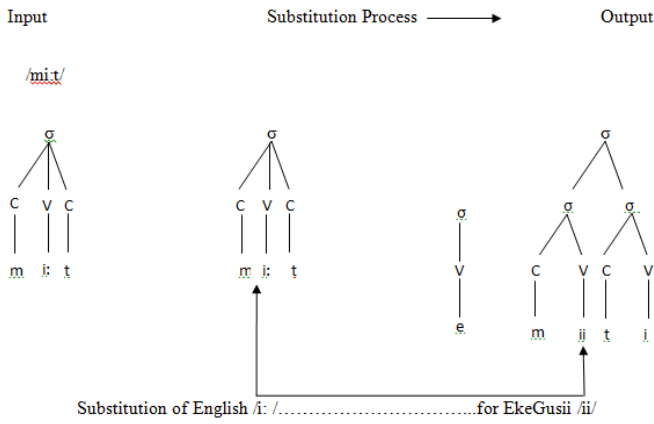
This demonstration shows that the English /i: / is substituted with the EkeGusii [ii] vowel. This is explained by the fact that Ekegusii does not have the long front high vowel /i: /, but both vowels (/i: / and [i] share many common features: they are [-High], [-Back], [-Round] and [Tense/Long]. Given these circumstances, the vowels in EkeGusii nativized words from English, such as the one in example (16 a i) will be substituted by the nearest EkeGusii vowels in terms of pronunciation. Words in data (16 b and c) are likely to behave in a similar manner.

In OT theoretic terms, demonstration (16 a i 'meat') above can be analyzed in tableaux (4 i) and (4 ii):

Input: /mi:t/   'meat'

Tableau 4 i. English output for [mi:t]

Input: /mi:t/	FAITH V	NO CODA
a) ☞ [mi:t]		*
b) [mi:ti]	*!	
c) [e-mi.t.]	*!	*

Ranking: FAITHV >> NOCODA

The winning candidate here is (a). It violates the least ranked constraint in English language. This is comparable to EkeGusii output in (ii):

Tableau 4 ii. EkeGusii output for / mi:t/.

Input: /mi:t/	*NOCODA	FAITH V
a) [mi:t]	*!	*!
b) ☞ [e.mii.ti.]		* *
c) [em.it.i	*!	

Ranking: NOCODA >> FAITH V

The winning candidate is (b) because it does not violate any of the serious constraint (*NOCODA) in EkeGusii language. The other outputs do. This can be replicated to all the remaining data in in (16) with similar results. Data (16 b and c) show cases of monophthongization, changing one from two vowels to one in (16 b) and from three to one in (16 c). Example (16c i) is illustrates by tableau (5) below:

Input: /waia/ 'wire'

Tableau 5. EkeGusii output for /waia/

Input: /waia/	*COMPLEX^{VOW}	MAX IO
a) waia	*!	
b) ☞ waja		*
c) aia	*!	

Constraints and their ranking: *COMPLEX^{VOW} >> FAITH V

Candidate (b) wins because does not violate the constraint *COMPLEX$^{VOW\ which}$ is highly ranked in EkeGusii. Violation of MAX IO does not prevent from winning because the changes are meant to avoid a higher constraint.

5. Conclusion

This paper has analyzed nativization of EkeGusii loanwords from English using the OT theoretic framework.

The data used include EkeGusii loanwords from English collected in the *Authoritative Ekegusii Dictionary, Endabaro, Endabasia Y' Ekegusii* (2013) and as used by native speakers in various contexts including radio stations, local churches among other contexts . The paper focuses on two phonological processes: re-syllabification and phoneme or feature change. Under re-syllabification, it has been realized that EkeGusii loanwords from English have cases of ONSET (consonant) violation. This is seen to be as a result of Ekegusii language, unlike most languages, having a pre-prefix (augment) before the 'real' (prefix per-se) in the prfix structure, especially as noun class and number markers. It has also been established that EkeGusii does not have consonant clusters. Existing Consonant Glide (CG) 'formations' have been treated as secondary articulations and not clusters. The next point the paper has established is that EkeGusii has pre-nasalized stops and not nasal consonant clusters. Under phoneme/feature change, it has been established that Dahl's law operates in the substitution of the English pre-nasal consonants with their voiced equivalents in EkeGusii and in the substitution of the English voiceless plosive (/k/) with EkeGusii voiced fricative (obstruent) [ɣ].

Finally, the paper has also shown that Optimality Theory can be effectively used to analyze nativization of loanwords without having to employ rule based phonological rules. This has been done by examining the relationship between the two contrasting constraints: Faithfulness and markedness in the syllable repair and phoneme change processes.

References

Anyona, M. G. (2011). Phonological influence of Ekegusii in the pronunciation of English (MA thesis. Nakuru: Egerton University, 2011).

Batibo, H. (1996) Loanword clusters nativization rules in Tswana and Swahili: a comparative study. South African journal of African languages Vol. 18 nuber 2.

Bennett, P. (1967) Dahl's Law and Thagisu. *African language studies*.8:127-159.

Bickmore, S. (1998) metathesis and Dahl's lawin EkeGusii. *Studies in linguistic sciences*. Vol.28 number 2.

Booij, G. and Rabach, J. (1984). " Morphology and prosodic domains in lexical phonology." In. Veira, S. (ed.), *Yearbook*. Vrije: Vrije University. Vol.1, Number1. 88-102.

Bosire, B. M. (1993). Ekegusii: A comparative study of Rogoro and Maate dialects (MA thesis. Nairobi: University of Nairobi, 1993)

Bosire, K. M. & Machogu, G. K. (2013). *Authoritative ekeGusii dictionary: endabaro endabasiay' ekeGusii*. Nairobi; EkeGusii encyclopedia project.

Cammenge, J. (2002). *Phonology and Morphology of Ekeusii*. Postfach: Rudiga Koppe Verlag. Chomsky, N. & Halle, M. (1968). *The sound patterns of English*. New York: Harper & Row.

Clark, J., Yallop, C. & Fleter, J. (2007). *An introduction to phonetics and phonology*. Malden: Blakwell Publishing.

Clements, G.N. and Keyser, S.K. (1983). *CV Phonology: a generative phonology theory of the syllable*. Cambridge: Mass MIT Press.

Cruttenden, A. (2011) *Grimson's pronunciation of English*. Hachette: Hodder

Crystal, D. (1987) *The Cambridge Encyclpedi of Language*. Cambridg: CUP

Davy, J. and Nurse, D. (1982) Synchronic versions of Dahl's Law: the multiple application of a phonological dissimilation rule. *Journal of African languages and linguistics* 4:157-195

Guthrie, G. N. (1960). *Classification of Bantu Languages in Kenya*. Kampala: EAP.

Hock, H. (1991). *Principles of historical linguistics*. New York: Mounton de Gruyter.

Hockett, C. F. (1958). *A course in modern linguistics*. New York: McMillan.

Hooprr, J.B. (1976). *An introduction to Natural Generative Phonology*. New York: Academic Press.

Ibdoil, G. (2004). Intricacies of the African Arab languages (MA thesis:Kahrtoom: International University of Africa, 2004)

John, A. (2000). *The Handbook of phonology theory*. Amazon: Blackwell publishers.

Katamba, F. (1989). *An introduction to phonology*. London: Longman Academic Press.

Kerger, R. (1999). Optimality Theory, Cambridge: Cambridge University Press.

Kiparsky, P. and Mohanan, S. (1982). From Cyclic Phonology to Lexical Phonology." In va der Hulst, H. and Smith, N. (Eds.). *The structure of phonological representations*. New Delly: Indiana University Press. Vol. 1 1, Number 1. 130-153.

Langacker, R. W. (1968*). Language and its structure: some fundamental linguistics concepts*. New York: Holt, Reihart & Winston.

Mberia, K. (2004). The phonology of borrowed words in Kitharaka. In A. Buregeya, H. Schroeder & F. Eshun (Eds.), *Occasional papers in language and linguistics* (PP.45-57) Nairobi: Department of Linguistics and African languages, University of Nairobi.

McCarthy, J. and Prince, A. (1992). Prosodic morphology: constraint. London: Routledge.

Mwita, L.J. (2009). The adaptation of Swahili loanwords from Arabic: a constraint based analysis. *The journal of pan African studies*, vol.2, no.8.

Ongarora, D.O. (1996). Vowel harmony in the Rogoro dialect of Ekegusi (MA thesis, Egerton University, 1999).

Osinde, K. N. (1988). Ekegusii phonology: an analysis of the major consonants (MA thesis, University of Nairobi, 1998).

Owino, D. (2003). Phonological Nativization of Dholuo Loanwords (Doctoral dissertation, University of Pretoria, 2003).

Roach, P. (1983) *English phonetics and phonology*. Cambridge: CUP

 thesis, University of Nairobi, 1993).

Weinreich, H. (1953). *Language in Contact*. Mouton: The Hague.

Whiteley, W. H. (1967). Loanwords in linguistic description: a case study from Tanzania, East Africa. I. Ranch, & C. T. Scott (Eds.). Approaches in linguistic methodology. Mounton deGruyer.

Zivenga, W. (2009). Phonological and Morphological Nativization of English Loans in Tonga (Doctoral dissertation, UNISA, 2009).