

Traces of Kiswahili phonology and orthography in the EkeGusii Holy Bible: An analysis of consonants in Kiswahili nouns borrowed into EkeGusii

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Abstract

This paper investigates the influence of Kiswahili orthography and phonology on EkeGusii consonant orthography and phonology. This paper was intended to establish the consonant orthographic and pronunciation inaccuracies in the EkeGusii Holy bible. This was in the view of the fact that EkeGusii consonant orthography and phonology in the existing published EkeGusii texts such as Ngoko (1979) and Bosire & Machogu (2013) among others seem to be accurate. The objectives of the study were: to establish the discrepancies between the orthographies and phonologies of EkeGusii and Kiswahili languages, to determine what EkeGusii phonological and orthographic systems do to the Kiswahili grapheme and phoneme consonants not present in the EkeGusii systems that enter into the systems as observed in the EkeGusii Holy bible and, to suggest corrective measures to any inaccuracy observed in the EkeGusii holy bible. The study was conducted through content analysis, a descriptive research design. Data was collected from the EkeGusii Holy bible translated from Kiswahili. All the orthographically and phonologically inaccurate (consonantal) words constituted the population of the study. The study established that there are a number of Kiswahili consonant phonemes and graphemes not present in the EkeGusii phonological and orthographic systems. Examples of consonant phonemes: /l, d, f, v, g, z/etc. as in /lala/ “sleep”, /damu/ “blood,” /fanya/ “do” , /piga/ “beat”, /vuka/ “cross” /punguza/ “reduce” Examples of graphemes: <l, d, f, v, / etc. as in <lete> ‘bring, <dunia> “world”, <funga> “tie”, <shika> “hold” It was further established that the spellings and pronunciations of Kiswahili were transferred to EkeGusii orthography and pronunciation in the EkeGusii bible, hence the inaccuracies observed.

Keywords: Traces, orthography, phonology, consonant, influence, EkeGusii



1.0 Introduction:

This paper discusses the relationship between EkeGusii and Kiswahili orthographies and phonologies. It is important therefore to present the phonemic and graphemic inventories and the phonotactics of the two languages in order to establish the extent to which they are similar or dissimilar. There are discrepancies evident in the orthography and pronunciation of Kiswahili nouns borrowed into EkeGusii in the EkeGusii Holy bible. In view of these discrepancies, this paper proposes how the orthographies and pronunciations can be corrected and then conclude by outlining the benefits of such correction (Mwangi, Njoroge and Mose 2013). Because the focus of the paper is on consonants, only consonant inventories will be presented.

1.1 EkeGusii consonant phonology and orthography

1.1.1 Phonology

This sub-section outlines the phonological consonant system of EkeGusii. Studies on the EkeGusii phonology have identified a number of consonants. For example, Cammenga (2002:53) has identified the consonants in chart (1).

	Bilabial	Alveolar	(Alveolo-) Palatal	Velar
Continuant	/β/	/s/		/ɣ/
Flap/ liquid		/r/		
Obstruent	[b]	/t/		/k/ /g/
Affricate			/c/ /dʒ/	
Nasal	/m/	/n/	ñ	/ŋ/
Glide	/w/		/y/	
	[Cw]		[Cy]	

Chart (1): EkeGusii consonants

This article makes the following observations about the consonant inventory in chart (1). Firstly, it should be noted that Cammenga’s (2002) inventory of EkeGusii consonants is an improvement of Whiteley’s (1960) inventory. In Whiteley’s (1960) inventory, are the following consonants which Cammenga does not include in chart (1) above: [p], [ny], and [y/(j)]. As observed by both Cammenga and Whiteley, the voiceless, bilabial stop [p] is only found in EkeGusii words borrowed from languages in which the sound is present, 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 suggested by Whiteley would be the emphatic form /pi/ which means ‘completely’ as illustrated by (1).

- 1) EkeGusii idiophone with the voiceless stop /p/
- i) ita pi/ita pi/ ‘kill completely’
- ii) geenda pi /ɣeenda pi/ ‘go completely’
- iii) koora pi /koora pi/ ‘finish completely’

Adapted from Bosire and Machogu (2013)

This data shows that /pi/ in the words emphasizes the given actions.

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

Thirdly, following observations that Bantu languages do not have consonant glide sequences, but instead that the glides (approximants in this study) are realized as secondary articulations (Hayman & Katamba, 1999), what Cammenga includes as consonant glide sequences, ([Cw] and [Cy]), will not be included in the inventory in this study. The approximant /w/ will be excluded altogether from EkeGusii consonant inventory, meaning that it will only be treated as a derived secondary consonant represented as ([C^w]).

Fourthly, the pre-nasal stops [b], [d] and [g], the voiced alveolar fricative [z] and the voiced palato-alveolar fricative [dʒ], like the secondary approximants described above will be treated as derived consonants through homorganization and defricativization. They are therefore not part of the phonological system of the language. This then means that they are equally treated as secondary derivations.

Fifthly, the affricates that Cammenga (2002) represents with the symbols /c/ and /dž/ are, in this study, represented as the IPA symbols /tʃ/ and /dʒ/ respectively/.

EkeGusii consonants can now be represented as in chart (2).

	<u>Bilabial</u>	<u>Alveolar</u>	<u>(Alveo-) Palatal</u>	<u>Velar</u>
Continuant	/ɸ/	/s/		/ɣ/
	/β/	[z]		/x/
(tril)		/r/		
Obstruent	[b]	/t/		/k/
		[d]		[g]
Affricate			[dʒ]	
			/tʃ/	
Nasal	/m/	/n/	/ɲ/	/ŋ/
Approximant	[w]		/j/	

Chart (2): EkeGusii consonant inventory chart

Chart (2) shows that two new consonants have been added into the consonant inventory of EkeGusii. These are: /ɸ/; voiceless, bilabial, continuant as in obuba /oɸuɸa/ ‘food’, amaraba /amaraɸa/ ‘soil’ abasaacha /aɸasaatʃa/ ‘men’ and /x/ voiceless velar continuant as in omogesi /omoxesi/ harvester, agaanto /axaanto/ ‘a thing’, ensagara /enzaɸara/ ‘lizard’.

Therefore, this article concludes that EkeGusii has fourteen distinctive consonants in its phonological inventory: /ɸ/, /s/, /ɣ/, /β/, /x/, /r/, /t/, /k/, /m/, /n/, /ɲ/, /ŋ/, and /j/; and six phonetic derivatives: [z], [b], [d], [g], [dʒ] and [w].

Phonologically, voiced EkeGusii consonants seem to occur with the mid-high vowels /e/ and /o/ (with the feature [+ATR]), while the voiceless ones occur with the mid-low vowels /ɛ/ and /ɔ/ (with the feature [+RTR]). The rest of the vowels occur without such restrictions. This is vowel-consonant harmony controlled by the feature [voice]. Data (2) illustrates this observation.

2) Occurrence of vowels with consonants in EkeGusii

<u>/e/ and /o/ (ATR)</u>	<u>/ɔ/ and /ɛ/ (RTR)</u>
omogondo /omoyondo/ ‘land’	oboba /ɔɸɔɸa/ ‘mashroom’
egesanda /eyesanda/ ‘calabash’	etoigo/ ετοixɔ/ ‘floods’
emondo /emondo/ ‘gizzard’	omoeto /ɔmɔεtɔ/ ‘trap’

Adapted from Bosire and Machogu (2013)

Whether a vowel occurs with a voiced or a voiceless consonant in EkeGusii seems to be determined by whether the vowel is advanced or retracted tongue root. This, in fact, is what is responsible for the consonant and vowel harmonies that are observed in (2). Words having vowels with ATR demand [+Voice] consonants, while those with RTR demand [-voice] consonants.

Phonotactics of a language are the constraints on the sequence or position of phonemes in words in that language. Such constraints are part of every speaker’s phonological knowledge of their language. The constraints operate on units larger than the single segment, or phoneme; that is, the syllable (Yule, 1996). Consonant phonemes generally operate at the margins of syllables either singly or in clusters (Mohamed, 2000) in languages. In EkeGusii, just like in most Bantu languages (Mutua, 2007), all consonants function as onsets and not codas. Thus, as Wald (1989) and Mutua (2007) observe, pre-nasalized series common in Bantu should be treated phonologically as an independent series rather than as a cluster of nasal plus stop. Therefore, EkeGusii [mb], [nd], [ng] and [nt] are independent (single) phonemes and not consonant clusters (Herby, 1986 & Downing, 2005).

Pioneering studies in EkeGusii phonology (Whiteley, 1965 & Cammenga, 2002) among others show that EkeGusii has consonant glide sequences or consonant clusters in short. This study however, following observations by Herby (1986), Hayman and Katamba (1999), Order (1999), and, Downing (2005), suggests that EkeGusii, like other Bantu languages, lack consonant clusters. Rather, what seems like consonant glide sequences are derived secondary consonants. Thus, where for example, there is a consonant glide [CW] sequence in Cammenga (2002), this study sees it as a derived secondary articulation [C^w]. Studies in other Bantu languages support this view. For example, in LuGanda, spoken in Uganda, the first vowel in a word is deleted unless it is high (in which case it becomes a glide [w] or [j]) (Katamba, 1993). The same is true of Ronga (Hargus and da Conceicao, 1999), Emai (McCarthy, 2007), and Fahiru (Otterloo, 2011). This observation is important to this article because it explains why borrowed words with consonant clusters are declusterized. The observation further emphasizes the fact that EkeGusii, like other Bantu languages is a strict CV language. Thus, any form of consonant clusters is not allowed.

Generally, EkeGusii has a (V) CV syllable structure (Cammenga, 2002). Thus, the language is characterized with an open syllable structure and sometimes a single vowel word initially as illustrated by (3).

3) EkeGusii syllable structure

<u>Syllable form</u>	<u>Underlying</u>	<u>Surface EkeGusii</u>	<u>Gloss</u>
CV. CV.	lke.tiil	[yetii] getii	field
a) CV.CV.	/βa.na/	[βana] bana	predict/fore-tell
b) CV.CV.CV	/tɛ.rɛɛ.ra./	[tɛ.rɛɛ.ra]tereera	sing for

- c) V.CV.CV /o.mo.te/ [omote] omote tree
 - d) V.CV.CV.CV /o.mo.yo.ri./ [o.mo.yo.ri] omogori buyer
 - e) V.CV.CV.CV /a.βa.βa.ni/ [aβaβani] ababani prophets
- Adapted from Bosire and Machogu (2013)

(3a), for example, can be presented on syllable nodes as in figure (1).
Input: /ke.tii /, output: [yetii] ‘field’

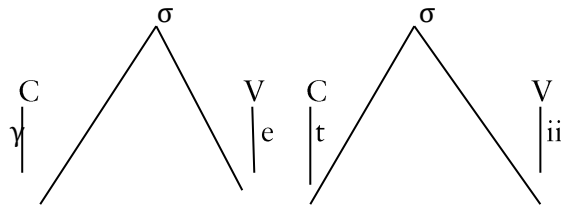


Figure (1): EkeGusii syllable nodes for /yetii/
Adapted from Cammenga (2002)

There are cases of single vowel syllables in EkeGusii. This, however, is a case of onset violation, where a vowel begins in a word, especially in nouns number and class marking pre-prefixes and prefixes and in some single vowel words as illustrated by (4).

4) Single vowel syllables in EkeGusii

- a) i) o- mo -te ‘tree’ ii) e- me- te ‘trees’
 Aug prefix root Aug prefix root
 3sg 3.3 -tree (sing.) 4pl 3.4 - tree (pl.)
- b) a.aa ‘pluck’ (vegetables etc.)

The prefix {omo-} in (4ai) above marks the class of the noun ‘tree’, that is class 3 and number, that is singular, while the prefix {eme-} in (4aii) marks class four and plurality. Examples (4ai and (4b) above will be represented on a syllable node as in figures (2).

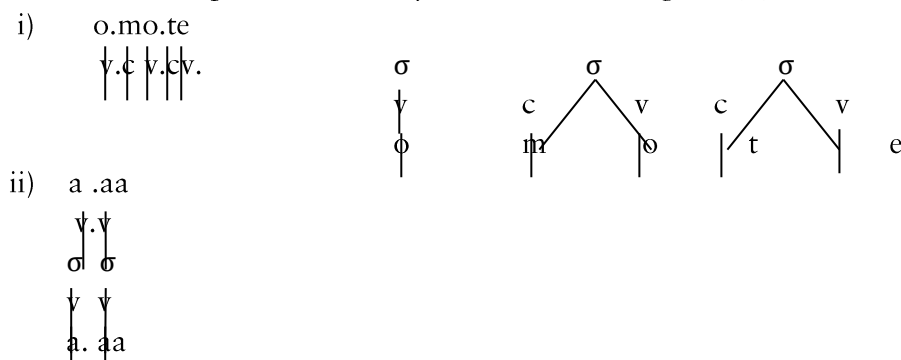


Figure (2): EkeGusii syllable nodes for [o.mo.te] and [a.aa] respectively

1.1.1. EkeGusii consonant orthography

According to Mwangi, Njoroge & Mose (2013), EkeGusii has the following graphemes: <b, m, t, n, r, s, ny, ch, k, g, ng>. These graphemes correspond to phonemes as shown in table (1) as follows.

Grapheme	phoneme	example	Gloss
b	/β/	siba	tie
	/β/	baba	grandmother
	[b]	embori	goat
m	/m/	mena	lick

t	/t/	tata	father
d	[d]	enda	stomach
n	/n/	omwana	child
r	/r/	rara	sleep
s	/s/	esese	dog
s	[z]	ensagara	lizard
y	/j/	yaya	no
ny	/ŋ/	enyangi	celebration
ch	/tʃ/	baacha	curve
ch	[dʒ]	enchara	hunger
k	/k/	beka	put
g	/x/	gera	measure
	/ɣ/	igoro	up
	[g]	engombe	cow
ng	/ŋ/	egechanga	wire

Table (1). EkeGusii consonantal grapheme – phoneme correspondence

The six phones in the list: / [z], [b], [d], [g], [dʒ] and [w], are not phonemes in this language. However, they are realized phonetically as shown and are therefore phonetic derivatives (Anyona 2017)

1.2 Kiswahili consonant Phonology and orthography

1.2.1 Kiswahili consonant Phonology

According to Polome (1967), the segmented consonant phonemes of Kiswahili include: /p, t, k, b, d, g, f, θ, s, h, x, v, ð, z, r, tʃ, dʒ, m, n, ŋ, w, r, j/. These are represented in a chart as in (3).

	<u>Labial</u>	<u>Dental</u>	<u>Alveolar</u>	<u>(Alveo-) Palatal</u>	<u>Velar</u>	<u>Gloatal</u>
Continuant	/f/	θ	/s/			
	/v/	ð	/z/		/x/	/h/
(tril)			/r/			
Obstruent	/b/		/t/		/k/	
	/d/				/g/	
Affricate				/dʒ/		
				/tʃ/		
Nasal	/m/		/n/	/ŋ/		/ŋ/
Approximant	/w/			/j/		

Chart (3). Kiswahili segmented phoneme chart

In Kiswahili, the fricatives [θ], [ð] and [x] occur exclusively in Arabic loanwords (Polome 1976). Their occurrences are restricted to only two environments as shown in data (6) repeated from Polome (1976).

6) Occurance of the sounds [θ], [ð] and [x] in Arabic loans in Kiswahili

(i) Prevoalcalic initial position environment /-v/ as in:

- / ð / dhamana, surety dhukukuru, rembember
- /θ/ theluji snow, thabiti resolute, thubutu, dare
- /x/ ghali expensive, ghera, jealousy ghafla ‘sudden’

- (ii) Intervocalic position /v-v/ e.g.
 / ð / - Haidhuru ‘it does not matter, Kadhalika ‘ansd so on’
 /θ/ - Theluthi – ‘one third’, hadithi – ‘story’
 /x/ - Lugha – ‘language’ atakughilibu

Polome observes that the distribution of segmental phonemes in current speech in Kiswahili is governed by simple rules: (a) that all vowels occur in initial or final position, as well as medially before or after vowel or consonant phonemes. Thus, in the environments /t - /, / - t/, /v - /, /-v/, /c-/, /-c/, (b) that all consonant phonemes occur in initial positions, they also occur in pre- and post-vocalic positions, except the voiceless aspirates which appear in prevocalic initial position only.

In words of Bantu origin, only two types of clusters are likely to occur: (1) nasal + consonant; and (2) consonant + glide /j/ or /w/. However, there is a possibility of nasal + consonant + glide is possible as is. umbwa (dog).

All consonant phonemes except the voiceless aspirates and the sonorants /w/ and /j/, may occur after /m/, if it is realized as syllabic. Non-syllabic [m] as first component of taut-syllabic clusters appears as a rule only before labial and labiodentals consonants.

Only /t/ /d/ /t/ dʒ/, /s/ /z/ /w/ and /n/ commonly occur after /n/. The occurrence of /t/, /tʃ/ and /s/ after syllabic /n/ is restricted to the monosyllabic stems with these initial consonant phonemes. Only velar obstruents /w/ occurs after /n/ and only /w/ occur after /n/. Other restrictions are: /j/ occurs not after /b/, /d/, /dʒ/, /g/ nor after any other non-bilabial or non-labiodental consonant; /w/ does not occur after /f/, /h/ or /d/, except if /d/ is preceded by /n/ as in mpendwa ‘favourite’.

In loans from non-Bantu languages into Swahili, Polome (1976) observes that a number of consonantal clusters may occur as in: /lh/ - alhamisi ‘Thursday’ /lf/ - elfu ‘thousand’, /rt/ - sharti ‘of necessity’, /sk/ - Kaskasini ‘north’. Some of these clusters only occur medially where the two consonants are separated by a syllable boundary. Only a limited number of the clusters occur initially as in /st/ - starehe ‘enjoyment’, /skr/ - eskrubu ‘screw’

Syllable division occurs between a vowel or syllabic nasal and a following consonant. In words of Bantu origin, consonant sequences are always tauto – syllabic, so in mamba ‘crocodile’ and kubwa ‘big’ for example, the clusters mb and bw belong to the second syllable. In loanwords from elsewhere e.g. Arabic, the syllable boundary usually lies after the first of two consonants e.g. between /l/ and /t/ in sultani. All segmental sequences occur initially in syllables. Only vowel segments usually occur in syllable final position, though, in loanwords, consonants may occur in this position.

Following these observations therefore, the syllable types most commonly found in Swahili are /v/ (including the syllable nasal) and /cv/. The type /ccv/ is usually restricted to syllable, with either a nasal as first consonant or /j/ or /w/ as second consonant. The type /C (C) VC/ only appears in non-Bantu loanwords: the same restriction applies to the type /CCCV/, except when the first consonant is a nasal and the third /w/, as in nyongwa ‘be strangled’.

1.2.2 Kiswahili consonant orthography

According to (Polome 1967), most writings in Swahili is in the Romanized standard spelling, which developed from the practical orthography devised by the Christian missionaries in the 19th Century. This Romanization originated in the grammatical and lexicographical work of Dr. L. Krapft in the middle of the 19th C. Krapft’s work was improved by Bishop Steeve in his Swahili handbook in 1865 by introducing the grapheme <ng> to denote /ŋ/ as contrasting with <ng> /ŋ/ and <ny> /ŋ/. Moreover, the Arabic sounds such as the fricatives [θ], [ð] and [ɣ], which have been recognized as part of the cross-dialectal Swahili phonetic system and which are accordingly represented by the special diagraphs <th>, <dh> and <gh> in the standard spelling may be eliminated by speakers who have learned Swahili as a second language and who largely adapt its pronunciation to their own phonetic system.

1.2.2.1 Grapheme – Phoneme Correspondence in Swahili

In Swahili, there is one-to-one correspondence between consonant graphemes and phonemes as shown in table (2)

Grapheme	Phoneme	Examples of words
M	/m/	mtoto (child)
w	/w/	watoto (children)
f	/f/	fanya (do)
v	/v/	vuka (cross)
n	/n/	nyota (star)
l	/l/	lala (sleep)
r	/r/	rusha (throw)
t	/t/	tena (again)
d	/d/	dada (sister)
s	/s/	pesa (money)
z	/z/	punguza (reduce)
k	/k/	kaka (brother)
g	/g/	giza (darkness)

h	/h/	hapa (few)
y	/j/	yote (all)

Table (2). Swahili grapheme - phoneme correspondence

Diagrams in Swahili on the other hand are represented by a single phoneme as in table (3)

Diagraph	Phoneme	Example of words
dh	/ð/	dhamana (sureity)
th	/θ/	thabiti (resolute)
sh	ʃ	shangilia (cheer)
ch	/tʃ/, /dʒ/	cheza (play), uwacha (play-ground)
ny	/ŋ/	nyanya (tomato)
ng	/ŋ/	ng'ombe (cow)
gh	/x/	ghali (expensive)

Table (3). Diagraph – phoneme correspondence in Swahili

1.3 Discrepancies between phonologies and orthographies in Kiswahili and EkeGusii

1.3.1 Phonological discrepancies

Phonological differences between Kiswahili and EkeGusii languages is not as great as it between English and EkeGusii for example, because the two languages belong to the same language family - Bantu. This means that the languages share quite a number phonological and other language features. However, there are distinctive features observable between the two languages. Sub-section (1.1.1) shows that EkeGusii has fourteen distinctive segmental consonants: /ɸ/, /s/, /ɣ/, /β/, /x/, /r/, /t/, /k/, /m/, /n/, /ŋ/, /ŋ/, and /j/; and six phonetic derivatives: [z], [b], [d], [g], [dʒ] and [w]. Kiswahili on the other hand has the following segmental consonants: /p, t, k, b, d, g, f, θ, s, h, x, v, ð, z r, tʃ, dʒ, m, n, ŋ, w, r, j/. These inventories show that the languages have a number of differences as capture in the following table.

kiswahili consonants not in ekegusii	ekegusii consonants not in kiswahili	consonants found in both languages
b	β	m
p	ɸ	
f		
v		
θ		
ð		
d		t, n
dʒ		tʃ, ŋ, j
z		s
l		r
G	ɣ	k, x, ŋ

H		
W		

Table(4). Differences and similarities between EkeGusii and Kiswahili phoneme inventories
There are consonant segments in Kiswahili which are realized in EkeGusii phonetically as in as the following table shows.

Kiswahili consonant phoneme	phonetic realization in EkeGusii
/b/	[b]
/d/	[d]
/z/	[z]
/dʒ/	[dʒ]
/g/	[g]
/w/	[w]

Table (5). Phonetic realization of Kiswahili phonemes in EkeGusii

It therefore can be observed that the two languages have more of what they share than they do not share. If the phonetic realizations of some of the Kiswahili consonant segment phonemes are included, then the difference could be minimal.

The given inventories show that there are consonant segments in Kiswahili not present in EkeGusii, especially the dentals, the interdental and most voiced consonants. Further, as table (4) indicates there are only three EkeGusii consonant phonemes absent in Kiswahili phonological inventory: the bilabials, /ɸ/ and /β/ and the velar /ɣ/.

The Kiswahili interdental /θ/ and /ð/ and the velar/x/ are foreign to Kiswahili phonology since according to Polome (1976), they only occur in Arabic words borrowed into Kiswahili. However, the velar /x/ is phonemic in EkeGusii.

Phonetically, the two languages behave in a similar manner. Except for the [θ], [ð] and [x] in Kiswahili, the distribution of segmental phonemes in both languages is governed by two simple rules: 1) that all vowels occur in initial or final word position as well as medially before or after vowels or consonant phonemes, 2) that all consonant phonemes occur in initial positions, they also occur in pre- and post- vocalic positions in both languages. Just like in all Bantu languages, only two types of consonant clusters occur: Nasal + Consonant; and Consonant + Glide clusters (Polome 1976).

1.3.2 Orthographic discrepancies

Most writing in both Kiswahili and EkeGusii are in the Romanized standard spelling. In sub- section (1.1.1), it was observed that EkeGusii has the following consonant graphemes: < b, g, m, n, r, s, t, y>. Kiswahili on the other hand has the following graphemes: < b, d, f, g, h, j, k, l, m, n, p, r, s, t, v, w, y, z >. The discrepancy between the two languages is captured in the following table.

Kiswahili graphemes	EkeGusii graphemes
b	B
d	-
f	-

g	G
h	-
j	-
k	K
l	-
m	M
n	N
p	-
r	R
s	S
t	T
v	-
w	-
y	Y
z	-

Table (7). Discrepancy between Kiswahili and EkeGusii graphemes.

Table (7) indicates that there several graphemes that are present in Kiswahili but not in EkeGusii: < z, w, v, p, l, j, h, f, d >.

The two languages have diagraphs (two graphemes written as one unit). These are presented in table (8).

Kiswahili diagraphs	EkeGusii diagraphs
dh	-
ch	Ch
th	-
sh	-
ny	Ny
ng	Ng
gh	-

Table (8). Discrepancy between Kiswahili and EkeGusii diagraphs

The table shows that Kiswahili has four diagraphs not present in EkeGusii, while three diagraphs are found in both languages.

In both languages there is a one to one correspondence between the consonant phonemes and the graphemes they represent (Polome 1976).

3.0 Methodology

This study used content analysis as well as descriptive research designs. The data analyzed was in the form of words and not numbers. Words misspelt and therefore mispronounced were identified, described and analyzed against EkeGusii spellings and pronunciations (from respondents- see the appendix) and the Kiswahili Bible spellings/pronunciations.

EkeGusii bible is assumed to have been translated from Kiswahili because of Kiswahili spelling and pronunciation features of some of the bible items. Data was collected from the EkeGusii Bible.

The sample sizes included: those of the data (words/names) that were analyzed and, the respondents from whom the spellings and pronunciations were obtained for comparison.

The population of the data (words) included all the words misspelt/mispronounced in the EkeGusii bible which are numerous. The sample size of these words was obtained by purposively choosing two words misspelt and mispronounced for each consonant grapheme/phoneme. The population of the respondents included all EkeGusii speakers who are able to read/write in EkeGusii language. However, due to time and space, 5 pastors were randomly selected. This was done by first randomly selecting five churches in Masimba Ward of Masaba South Sub-County of Kisii County. It is the pastors/fathers of these churches that were selected.

Two words with each Kiswahili consonant/graphemes/phonemes not found in EkeGusii were purposively selected from the bible. A questionnaire which doubled up as an interview schedule was prepared in which each word collected was presented with a blank space for the misspelt/mispronounced grapheme/phoneme, for example: “- o - sua” for Yoshua (Joshua) (see the appendix). The respondents were then requested to fill in the blanks and then read the words alone. The graphemes/phonemes filled in/produced were then identified and analyzed.

Data was analyzed using the qualitative content analysis technique. In which the presence, meanings and relationships of graphemes and phonemes of the languages under study are analyzed.

4.0 Presentation, analysis, interpretation and discussion of data

The following table presents the Kiswahili consonant phonemes/graphemes not found in EkeGusii, how they are used in the bibles of the two languages and their suggested accurate or correct usage in the EkeGusii bible.

Grapheme/ phoneme	Kiswahili Bible Spelling Pronunciation	EkeGusii Bible Spelling Pronunciation	Correct EkeGusii bible usage Spelling Pronunciation
 /b/	Biblia /bibia/ Obadia /obadia/ Ayubu /ajubu/	Ebibilia /ebibilia/ Obadia /obadia/ Ayubu /ajubu/	Ebibiria /eβiβiria Obadia /oβatia/ Ayubu /ajuβu/
<d> /d/	Danieli /danieli/ Obadia /obadia/ Yuda /juda/ Daudi /daudi/	Danieli /danieli/ Obadia /obadia/ Yuda /juda/ Daudi /daudi/	Tanieri /tanieri Obatia /oβatia/ Yuta /juda/ Tauti /tauti/
<f> /f/	Sefania /sefania/ Waefeso /waefeso/ Wafilipi /wafilipi/ Filemoni /filemoni/	Sefania /sefania/ Abaebefeso /aβaefeso/ Abafilipi /aβafilipi/ Filemoni /filemoni/	Sebania /seβania/ Abaebeso /aβaebeso/ Ababilibi /aβaβiriβi Biremoni /βiremoni/
<g> /g/	Wagalatia /wayalatia	Abagalatia /aβayalatia/	Abagaratia /aβayalatia/

	Galigaya / <i>yalilaja</i> /	Gariri / <i>gariri</i> /	Gariri / <i>gariri</i> /
<h> /h/	Hosea / <i>hosea</i> / Habakuki / <i>habakuki</i> / Yohana / <i>johana</i> /	Hosea / <i>hosea</i> / Habakuki / <i>habakuki</i> / Yohana / <i>yohana</i> /	Osea / <i>osea</i> / Abakuki / <i>aβakuki</i> / Yoana / <i>jɔana</i> /
<j> /dʒ/	Yeremia / <i>jeremia</i> / Yoeli / <i>joeli</i> / Yohana / <i>johana</i> / Juda / <i>juda</i> /	Yeremia / <i>jeremia</i> / Yoeli / <i>jɔeli</i> / Yohana / <i>jɔhana</i> / Juda / <i>juda</i> /	Cheremia / <i>tʃeremia</i> / Choeri / <i>tʃɛri</i> / Choana / <i>tʃɔana</i> / Chuta / <i>tʃuta</i> /
<l> /l/	Walawi / <i>walawi</i> / Samweli / <i>samweli</i> / Luka / <i>luka</i> / Wakolosai / <i>wakolosai</i> /	Abalawi / <i>aβalawi</i> / Samweli / <i>samweli</i> / Luka / <i>luka</i> / Abakolosai / <i>aβakolosai</i> /	Abarawi / <i>aβarawi</i> / Samweri / <i>samweri</i> / Ruka / <i>ruka</i> / Abakorosai / <i>aβakorosai</i> /
<p> /p/	Wafilipi / <i>wafilipi</i> / Petro / <i>petrɔ</i> /	Abafilipi / <i>aβafilipi</i> / Petero / <i>petero</i> /	Ababiribi / <i>aβaβiriβi</i> / Betero / <i>βetero</i> /
<v> /v/	Yavani / <i>javani</i> / Vashti / <i>vasti</i> /	Yavani / <i>javani</i> / Vasti / <i>vasti</i> /	Yabani / <i>jaβani</i> / Basati / <i>βasati</i> /
<z> /z/	Ezra / <i>ezra</i> / Zaburi / <i>zaburi</i> / Ezekieli / <i>ezekieli</i> / Zekaria / <i>zekaria</i> /	Ezara / <i>ezara</i> / Zaburi / <i>zaburi</i> / Ezekieli / <i>ezekieli</i> / Zakaria / <i>zakaria</i> /	Esira / <i>esira</i> / Saburi / <i>saβuri</i> / Esekieri / <i>esekieri</i> / Sakaria / <i>sakaria</i> /
<th> / <dh> /θ/ / /ð/	Timotheo / <i>timɔðeɔ</i> /	Timotheo / <i>timɔðeɔ</i> /	Timoti / <i>timoti</i> /
<sh> /ʃ/	Yoshua / <i>jɔfua</i> /	Yoshua / <i>jɔfua</i> /	Chosua / <i>tʃosua</i> /

Table (9). Kiswahili consonant phonemes and graphemes, how they are used in Kiswahili and EkeGusii bibles and their suggested accurate usage in the EkeGusii bible.

As observed in table (9), there are changes of Kiswahili consonants borrowed into EkeGusii. The change is done by substituting the Kiswahili consonants not present in the EkeGusii phonological system with those of EkeGusii. Section 1.3 has shown that a number of consonant segments found in the phonological system of Kiswahili do not exist in EkeGusii phonology. These include: /f/, /v/, /l/, /θ/, /ð/, /z/, /ʒ/, /ʃ/, /h/. As it has already been observed in this paper, the voiced plosives /d/, /g/, and /b/ only occur with nasals homorganically in EkeGusii 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 Whiteley (1960). Cammenga (2002) suggests that this plosive is “increasingly noticeable in the speech of the younger generation which has had contact with Swahili and English.” This study 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 only in nativized words from the languages mentioned by Whiteley. The

following sub-section show how the Kiswahili consonants (listed above) not found in EkeGusii phonological structure are realized by EkeGusii speakers.

**4.1 Realization of the Kiswahili /f/ <f> and /v/ <v> as [β] and [ϕ] **

The English labiodental fricatives share the labial feature value with EkeGusii [β], which they are substituted for. The feature value that separate the Kiswahili consonants from that of EkeGusii are: while /f, v/ are [+DENTAL], and [+STRIDENT]; [β] is [-DENTAL] and [-STRIDENT]. It is the labial feature which they share which probably make them substitutable as shown in (7).

7) Realization of Kiswahili /f/ and/v/ by EkeGusii [β], [ϕ]

Kiswahili bible spelling/ pronunciation	EkeGusii bible spelling/ pronunciation	Accurate/ correct spelling/ pronunciation
B ib lia /b ib lia/	E ib ilia /e ib ilia/	E ib iria /e ib iria
Ob ad ia /o ad ia/	Ob ad ia /o ad ia/	Ob ad ia /o ad ia/

(7) shows that the English voiced labiodental fricatives /v/ and its voiceless counterpart /f/ are realized as [β], a voiced bilabial fricative in EkeGusii. The possible explanation to this is that EkeGusii phonology lacks these anterior strident labiodental fricatives and therefore the anterior non strident bilabial fricative substitutes them because of phonetic similarity between them. They share [+labiality] and [+continuancy], differing majorly in terms of stridency. Therefore, the realization of /v/ and /f/ as [β] is as a result of phonetic similarity. Other languages nativize the English /v/ and /f/ in a similar manner. In Dholuo for example, /v/ becomes [b] (Owino, 2003). This is even when the phonetic distance between the two obstruents seem to be more than it is in EkeGusii.

An alternative explanation to the realizations given in (y) above can be given. In Tonga, (Zivenge, 2009), the English voiceless labiodental fricative /f/ is realized as [v], a strident labiodental just like /f/. This is irrespective of the fact that the voiceless labiodental is present in both the phonology of English and Tonga. Zivenge attributes this occurrence to the fact that the sound is constrained in terms of occurrence to onsets of the last syllable of class 7 nouns in Tonga. This occurrence, however, can be given another interpretation. In EkeGusii, in which as data set (96) shows, this labiodental fricative is realized as the voiced bilabial fricative [β], while in KiKamba loans from English, Mutua (2013), it is realized as [ϕ], a voiceless bilabial fricative. In White Hmong loans from English, Golston and Yang (2001), the fricative is maintained, irrespective of the position it occupies in a word.

While it is agreeable that the labiodental takes different realizations in loanwords from English, depending on the phonology of the host languages, it can be argued that whichever segment they substitute in the target language, is normally voiced inter-vocally and voiceless in voiceless environments.

In Tonga (Zivenge, 2009), the English word scarf /ska: f/ is realized as sikava [sikava]. In EkeGusii, as (y) shows, the word Ayubu /ajuβu/ is realized as Ayubu /ajuβu/. These show that the two languages realize the sound /f/ differently inter-vocally; [v] in Tonga, and [β] in EkeGusii. Besides these sounds sharing labiality and frication, they are voiced.

4.2 Realization of the Kiswahili /ð/ <dh> and /θ/ <th> as [t] <t>

The consonants [θ] and [ð] are characterized by the feature values [+interdental], [+continuant], [+coronal], and [+anterior]. They are distinguished by the feature [voice]. While [θ], is voiceless, [ð] is voiced. The consonant [t], with which the given Kiswahili consonants substitute, share a number of feature values such as: [+anterior], and [+coronal], which determine its choice for substitution. EkeGusii does not have interdental fricatives. This is perhaps the reason behind the avoidance of the interdentals, which are marked, in EkeGusii as (8) shows.

8) Realization of the English /θ/ and /ð/ as EkeGusii [t]

Kiswahili bible	EkeGusii bible	Accurate/ correct
<u>spelling/ pronunciation</u>	<u>spelling/ pronunciation</u>	<u>spelling/ pronunciation</u>
Timotheo /timɔðɛɔ/	Timotheo /timɔðɛɔ/	Timoti /timɔti/

The voiced equivalent of /θ/; that is, /ð/ is also substituted for [t]. This is explained as follows. Firstly, EkeGusii does not have the two interdental fricatives and therefore the nearest consonant, in terms of feature values; that is, [t] is the likely choice in this case. As has already been observed, [t] is characterized as an alveolar in EkeGusii (Whitely, 1960 and Cammenga, 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 study 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 English words loaned into EkeGusii.

Secondly, EkeGusii language lacks voiced consonants (except pre-nasal stops, nasals, and the fricative [ndʒ]) (Cammenga, 2002). This means that chances of the Kiswahili voiced inter-dental /ð/ being an output in the nativized Kiswahili loaned words in EkeGusii are minimal, if at all. McCarthy (2003) suggests an Optimality Theory constraint which bans interdentals in languages, in other words, interdentals are marked. A survey of literature seem to support this proposal: In Tonga, Zivenge (2009), English /θ/ is realized as [s] as in theory /θɪəri/ → [sijori], while /ð/ is realized as [dʒ], as in leather /leðə/ → [ledʒa]; in Japanese, Kay (1996), English /θ/ is realized as [s] as in thrill /θɪrɪl/ → [siriru], among others. In all these realizations, there is avoidance of the English interdentals. Thus, the proposal that the given interdental fricatives, and the interdental position generally are marked is supported.

4.3 Realization of the Kiswahili /l/ <l>

The Kiswahili consonant /l/ is realized as [r] in EkeGusii. [l] and [r] are characterized by the following feature values [+anterior], [coronal], among other features. They are distinguished by the feature lateral; while, [l] is [+lateral], [r] is [-lateral], meaning that it is a trill. EkeGusii phonology does not have the lateral consonant. Given that the two consonants are closely related, in terms of feature values, substituting [l] for [r] is natural as in (9).

9) Substitution of English /l/ by EkeGusii [r] (/l/ → [r])

Kiswahili bible	EkeGusii bible	Accurate/ correct
<u>spelling/ pronunciation</u>	<u>spelling/ pronunciation</u>	<u>Accurate spelling/ pronunciation</u>
Walawi /walawi/	Abalawi /aβalawi/	Abarawi /aβarawi/
Samweli /samweli/	Samweli /samweli/	Samweri /samweri/

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In (9), the Kiswahili consonant /l/ is realized as [r] in EkeGusii. The consonant /l/ is not found in EkeGusii phonological system. This explains why it is not realized in (9). Substitution of [r] for the English /l/ by second language speakers is a common phenomenon. For example, in Japanese, Kay (1996), like in EkeGusii, English /l/ is realized as [r] as in (10).

10) substitution of English /l/ for Japanese [r]

<u>English noun</u>	<u>pronunciation</u>	<u>Japanese nativized form</u>	<u>pronunciation</u>
hustle	hʌsl	hassuru	[hasuru]
last	læst	rasuto	[rasuto]
slip	slɪp	surippu	[suripu]

Adapted from Kay (1996)

In Japanese, like in EkeGusii, the alveolar lateral [l] is not found in its phonological system (Kay, 1996). That is why it is substituted for the alveolar trill as in (9 & 10) above, which is closer to it in terms of phonetic features as has already been observed.

Some languages however, behave in the exact opposite of what happens in EkeGusii and Japanese regarding these two segments. In Hawaiian, (Golston & Yang, 2001), KiKamba, (Mutua, 2007), and Tonga (Zivenge, 2009), among others for example, English /r/ is realized as [l]. Thus, in Hawaiian; /merɪ/ merry → [mele], in Tonga; /ru:lə/ ruler → [lula], while in KiKamba; kri:m cream → [kelimo]. In these languages, unlike EkeGusii and Japanese, [r] is not found in their phonological systems.

What these substitutions of the Kiswahili /l/ for [r] in target or borrowing languages and the other way round mean is that one of these approximants normally occur in a language and not both. In other words, it is normally, only either of them which occur in a given phonological system and not both. This however does not close out the possibility of some languages having both of these approximants, for example, in Kalanga, (Chebanne and Phili, 2015), just like in English, both [l] and [r] are present in its phonological system. That is why the approximants are retained in Kalanga nativized forms from English as in (11).

11) Kalanga nativization of the English approximants /l/ and /r/

<u>English noun</u>	<u>pronunciation</u>	<u>Kalanga nativized form</u>	<u>pronunciation</u>
driver	/draɪvə/	dirayivara	[dirajivara]
film	/fɪlm/	filimu	[filimu]

Adapted from Chebanne & Phili (2015)

In this data, the English sounds /r/ and /l/ are retained in Kalanga nativized forms of English. The explanation that can be given as to why these approximants are substitutable cross linguistically is that they share all but only one phonetic feature; they are produced at the alveolar ridge, they are approximants and voiced. But while [l] is a lateral, [r] is a trill. The cross linguistic alternation between these segments as observed above is a common phenomenon (John, 1984).

4.4 Realization of the Kiswahili /z/ <z> as /s/ <s>

The common feature values that characterize these consonants include [+obstruent], [+continuant], and [+anterior], among others. they are distinguished by the feature [voice]. While [z] is [+voice], [s] is [-voice].

EkeGusii does not have the voiced obstruent, which explains why it is not realized in Kiswahili borrowed words as in (12).

12) Substitution of Kiswahili /z/ for EkeGusii [s]

Kiswahili bible	EkeGusii bible	Accurate spellings/ pronunciation
Ezra /ezra/ Zaburi /zaburi/	Ezara /ezara/ Zaburi /zaburi/	Esira /esira Saburi /saβuri/

This kind of Substitution in loanwords affects other languages too, especially those that lack in their phonological systems. In Kikamba, (Mutua, 2007),for example, fees /fi:z/ → viisi [φiisi]. A similar occurrence is witnessed in Dholuo (Owino, 2003) as in ‘gazette’ /gəzət/ → [gaset]. This is even when the two assimilating languages are from different language families; KiKamba being Bantu, while Dholuo being Nilotic.

The substitution of [s] for [z] can be explained by the fact that the segments share all but one feature. They are: [+obstruent], [+coronal], and [+anterior] among other features. They are distinguished by the feature voice. While [s] is voiceless, [z] is voiced.

4.5 Realization of the Kiswahili /ʃ/ <sh> as /s/

These consonants share the feature values [+coronal], and [+continuant] among others. But while /ʃ/ are [-ANTERIOR], the consonant [s] is [+anterior]. Thus, EkeGusii does not allow non-anterior coronal continuants, explaining why they are avoided by speakers as in (13).

13) Realization of Kiswahili /ʃ/ as [s] in EkeGusii.

Kiswahili bible <u>spelling/ pronunciation</u>	EkeGusii bible <u>spelling/ pronunciation</u>	Accurate/ correct <u>spelling/ pronunciation</u>
Yoshua /jofua/ Shemu /femu/	Yoshua /jofua/ Shemu /femu/	Chosua /tʃosua/ Semu /semu/

(13) indicates that the English consonantal segment /ʃ/ is not realized by EkeGusii speakers. It is not found in EkeGusii phonological system. It is substituted for by the segment [s], which is, in terms of phonetic features, closest to it. They share the features: [+ coronal, + continuant, +coronal]. however, while [s] is [+ anterior], [ʃ] is [-anterior]. This points to the fact that the feature [anterior] determines the choice of [s] and not [ʃ] in EkeGusii realization. Thus, EkeGusii does not allow [-anterior, +coronal +continuant] in its outputs.

These analyses point to the fact that non anterior coronal continuants are marked. This observation is supported by similar realization of the English /ʃ/ loaned words in other languages such as in Dholuo as in (14).

14) Nativization of English /ʃ/ in Dholuo

English noun pronunciation EkeGusii nativized form pronunciation

fashion /fæʃn/ fason [fason]

bishop /bɪʃɒp/ pisopu [pisopu]

Source: Owino (2003)

In (14), the English consonant /ʃ/ is realized as [s] in Dholuo. Thus, like in EkeGusii, the consonant is equally marked in Dholuo.

4.6 Realization of the Kiswahili /h/ <h> as a vowel

15) Realization of Kiswahili /h/ as a vowel in EkeGusii.

Kiswahili bible EkeGusii bible Accurate spelling/pronunciation

Hosea /hosea/	Hosea /hosea/	Osea /osea/
Yohana /johana/	Yohana /yohana/	Yoana /joana/

5.0 Concussions and recommends

This paper investigated the traces of Kiswahili phonology and orthography in the EkeGusii holy Bible as translated from Kiswahili language. It was intended to establish the consonant orthographic and pronunciation inaccuracies in the EkeGusii bible translated from Kiswahili and recommend ways of correcting the inaccuracies. This was in the view of the fact that EkeGusii consonant orthography and phonology in the existing published EkeGusii texts such as Ngoko (1979) and Bosire & Machogu (2013) among others seem to be accurate. The study specifically sought to: 1) Establish the discrepancies between the orthographies and phonologies of EkeGusii and Kiswahili languages 2) Determine what EkeGusii phonological and orthographic systems do to the Kiswahili graphemes and phonemes not present in the EkeGusii systems that enter into the systems as observed in the EkeGusii Holy bible and 3) Suggest corrective measures to any inaccuracy observed in the EkeGusii holy bible. It was established that there are a number of Kiswahili consonant phonemes and graphemes not present in the EkeGusii phonological and orthographic systems. It was further established that the spellings and pronunciations of Kiswahili were transferred to EkeGusii orthography and pronunciation respectively in the EkeGusii bible, hence the inaccuracies observed. In view of these findings, it is concluded that the inaccuracies in the EkeGusii bible are caused by errors of translation because as Nyakundi (2010) correctly observes, “arguably the missionaries could not have known the EkeGusii language well (in this case the phonological and orthographic systems). It is also possible that the people who assisted the missionaries in translation were not experts in this field (linguistics).” It is recommended that the inaccuracies established be corrected by replacing the Kiswahili phonemes and graphemes transferred into the EkeGusii Holy bible with the EkeGusii consonant phonemes and graphemes that are nearest to the Kiswahili ones in terms of phonological and orthographic features.

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Appendix

Interview schedule/Questionnaire

The following questions were used to collect data from pastors on the spellings/ pronunciations of the EkeGusii Bible. It is for Purposes of linguistic studies only. The selected pastors were made aware of this fact.

INSTRUCTIONS:

The names/ words below are taken from the EkeGusii Holy Bible. Fill in the blank spaces with the appropriate letter and then produce the word/name aloud. Against each word is an English name/word to guide you.

Questons

1. E – i – ilia (Bible)
2. O - adia (Obadia)
3. Ayu – u (Job)
4. - aniel (Daniel)
5. Oba – dia (Obadia)
6. Yu- a (Jude)
7. – au- i (David)
8. Ze – ania (Zephania)
9. Abae – eso (Ephesians)
10. Abai–ipi (Filipians)
11. – ilemoni (philemon)
12. Aba – arati (Galatians)
13. – ariri (galilee)
14. – osea (Hosea)
15. – abakuki (Habakkuk)
16. Yo – ana (John)
17. – eremia (Jeremiah)
18. – oeli (Joel)
19. – uda (Jude)
20. Aba – awi (Leviticus)
21. Samwe – i (Samwel)
22. – uka (Luke)
23. Abako – osai (Collossians)
24. Abafili – i (Philipians)
25. – etero (Peter)
26. Ya – ani (Javan)
27. – asti (Vashti)
28. E – ara (Ezra)
29. – aburi (Psalms)
30. E – ekieli (Ezekiel)
31. – akaria (Zecharia).

Thank you and God bless you.