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Original Research Article

EkeGusii, a Language without Consonantal Clusters?

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ABSTRACT

The main objective of this study is to argue for the nonexistence of cluster of consonants in Bantu Phonology. Just like Morrison (2009) observes, the segmental status of Homorganic Nasal Consonant sequences has been a topic of debate in Bantu linguistics. While some linguists are of the opinion that these sequences are consonant clusters (Downing 2005 among others), others such as Morrison (2009), Hyman and Katamba (1990) view these sequences as single segments. In this paper, using data from EkeGusii, a Bantu language spoken in western Kenya and native speaker intuition, it is argued that Bantu languages do not allow any consonant clusters, concluding that these languages do not entertain consonant clusters of any kind.

Introduction

This paper argues that there are no consonant clusters of any nature in EkeGusii a Bantu language. Thus, underlying nasal consonant and consonant glide clusters are declusterized in the language surface forms. This is in agreement with Hyman and Katamba (1990) who observe that Bantu languages do not have consonant clusters. To Hyman and Katamba, the only combinations of consonants that seem to be clusters of consonants are those of: the nasal consonant (NC), consonant glide (CG) and nasal consonant glide (NCG) forms. This is the position taken in this study; that EkeGusii does not have obvious consonant clusters. What seems to be nasal consonant and nasal glide clusters are in fact secondary articulations motivated by the hormorganization (Anyona 2017). These nasal consonant and nasal glide secondary realizations are what the study refers to as declusterization.

Hyman and Katamba (1990) identify two kinds of consonant combinations that are of significance in the phonology of Bantu: homorganic nasal consonant sequences, also called pre-nasalized consonants, discussed above and consonant glide sequences (CG). These two at times overlap to produce a nasal consonant glide (NCG) cluster as illustrated by (1).

1) EkeGusii Nasal Cconsonant Glide (NCG)

Underlying form		surface form	gloss
|n-βu-ate|	→	[mbwate]	'hold me'

[m b w a t e]
N C G

Adapted from Katamba (1993)

(1) shows that the underlying nasal |n| is homorganized to [m], which in turn assimilates the consonant, |β|, a continuant to [b], a stop. Further, the underlying vowel |u|, which is high rounded, is assimilated to the glide [w] an equally rounded approximant, by the vowel [a], which is low. This is for ease of articulation (Katamba, 1993). (2) gives further examples of consonant glide sequences yielding hormorganization.

2) EkeGusii consonant glide hormoganization

i) Input: /buata/ 'hold'

Output: [βwata]

Hormorganization process

/βu.ata/ → [βwata]→ [$β^{w}$u-ata]

CG

ii) Input: sieka 'close'

Output: sjeka

Hormorganization process

/sieka/ → [sjeka]→ [s^{j}eka]

CG

where C^{w} and C^{j} are secondary articulations

Adapted from Hyman and Katamba (1990)

There is enough evidence in support of the consonant glide hormoganization argument advanced here as elsewhere. In LuGanda for example when two vowels are adjacent, the first vowel is deleted unless it is high (in which case it becomes a glide [w] or [j] (Katamba 1993), Similarly, in Emai, if two vowels are contained in lexical morphemes following one another, and that the vowel in the first morpheme is high, [i] or [u], the high vowel changes into homorganic glide of the appropriate place of articulation (McCarthy, 2007) as shown in (3) below repeated from McCarthy (2007:9).

3) Emai consonant glide hormorganization

(i) /ku ame/ → [Kwame] 'through water.'

(ii) /fi ɔpia/ → [fjɔpia] 'throw cutlass.'

In (3i), the high vowel /u/ hormoganically changes to the labial consonant glide /w/, while in (3ii) /i/ changes to the palatal consonant glide /j/. EkeGusii consonant glide hormoganization in (19) above behaves the same way as the Emai hormoganization in (3). In 'sieka' in (2) for example, the high vowel /i/, which is adjacent to the vowel /e/, changes to the homorganic consonant glide [j].

The secondary articulations as in C^w and C^j in (2) above advance the argument that instead of treating a sequence as a consonant glide (CG), it is occasionally treated as a secondary articulation on a single consonant, [$\underline{\beta}^w$ata] and [$\underline{s}^j$eka] respectively. This means that the consonant here is one (the primary one- underlined, which is accompanied with a secondary one which is a semi vowel- superscripted). Similar arguments have been advanced by Hargus and da Conceicao (1999) who propose that Ronga language (spoken in Mozamique) has distinctively labialized consonants, for example the nasal consonant [n], in the word [n^wala] 'fingernail', rejecting a cluster analysis on the grounds that there are no any other onset clusters in the language. Similarly, Otterloo and otterloo (2011) treats potential clusters of the type [Pj, Kw] in Pahari language (spoken in in Northeastern Parkstan) as violating secondary articulated palatalized and labialized consonants [P^j and K^w], respectively.

Methodology

Data analyzed in this paper was collected from two main secondary sources: the EkeGusii Holy bible: *Ebibilia Enchenu* and EkeGusii –English dictionary: *Authoritative EkeGusii Dictionary, Endabaro Endabasi Y'EkeGusii.* Native speaker intuition was also relied up on. Words were purposively collected from the given sources using native speaker intuition as and when needed for analysis.

Discussion and Results

Argument for Nasal -Consonant Glides

Following the observations in section 1, this paper argues in support of the view that EkeGusii language does not have consonant clusters. Instead, it has secondary realizations in cases of consonant glides as (4) illustrates.

4) Ekegusii consonant glides homorganization as secondary articulations

Word	underlying form	surface form	Gloss
a) rwana	/ru-ana/	[rwana	fight
b) kwani	/ku-ani/	[kwani]	greet
c) chwei	/tʃu-eri/	[chweri]	saw
d) etia	/e-ti-a/	[etja]	pass it
e) berja	/βeri-a/	[βerja]	boil
f) tjana	/ti-ana/	tjana	swear

Example (4a) can be represented in figure (1).

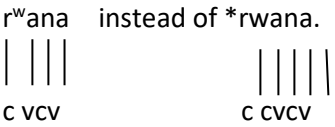

Figure (1): Articulation of cosonant glides in EkeGusii

In the figure, the realization *rwana is treated as ungrammatical or unacceptable because as has been argued before, it allows a cluster of consonants, which is against Bantu phonology which disallows consonant clusters.

In syllabic nodes, the syllables in (figure 1) above will be represented as in figure (2).

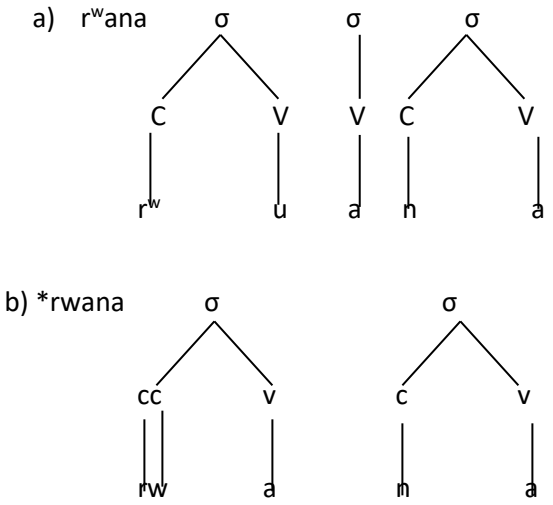

Figure (2): EkeGusii consonant glide syllabic nodes

Figure (2a) shows that the realization of the given word is grammatical in that it does not have any consonant cluster, while realization (2b) is ungrammatical because it contains a consonant cluster which is disallowed in Bantu phonology.

Herbert (1975) and Downing (2005) pose two questions about nasal consonant sequences in Bantu phonology. They wonder if the sequence is a single segment or a cluster, and if it is a cluster how the given components are syllabified. These are the same questions that this research sought to answer.

The reason why NC sequences such as [nt] and [nd] are treated as two segments, which is rare, is that they are bi-morphemic, arising by joining of an autonomous nasal (a consonant) with another consonant. For example, in Matumbi language (spoken in Tanzania), the sequence [mb] as in the word [mbajite] “I said”, derives from “nitbajite” which is optionally realized as [nimbajite], for ease of pronunciation (Herbert, 1975 and Downing, 2005). However, the reason why these NC clusters may not be treated as two segments, especially in Bantu languages (which favours the arguments advanced in this study), is that this would favor languages (such as EkeGusii) with a typology of uncommon syllable structure such as onset and coda clusters which, violate the sonority sequencing principle (Sievers, 1981 & Clements, 1990).

To avoid treating and calling NC sequences consonant clusters, linguists employ the term “pre-nasalized stops” (Herbert, 1975). According to Hebert, Makaa, a Bantu language spoken in Tanzania for example, has twenty-two simple consonants and eight prenasalized stops. Equally, Alnet (2009) lists a series of pre-nasalized consonants in Shimaore language.

Following the foregoing observations and arguments, this study argues that EkeGusii has pre-nasalized stops and other consonants and therefore no NC clusters in its syllable structure. (5) gives the four pre-nasalized consonant stops in EkeGusii.

5) EkeGusii prenasalised consonant stops

Prenasalised consonant	Example of word		Gloss
a) |n+b|> /mb/	engombe	[ɛŋɔmbɛ]	‘cow’
b) |n+r| > /nd/	enda	[enda]	‘stomach’
c) |n+t| >/nt/	egento	[eɣento]	‘thing’
d) |n+k|>/ŋg/	egechanga	[eɣetʃaŋga]	‘wire’

In (5), the NC ‘clusters’ (underlined) are treated as one consonant. In other words, there are no consonant clusters in essence. For example, (5b) can be represented syllabically as in figure (3).

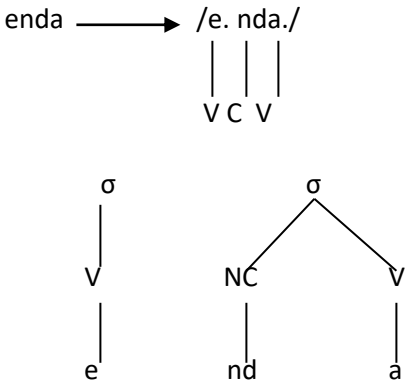

Figure (3): Nasal consonant syllabification in EkeGusii

The first syllable is made up of only the syllable nucleus, which is allowable in this language as in many other Bantu languages. The second syllable, it is argued, is made up of a pre-nasal consonant: a consonant proper (and not two consonants) and a vowel. Thus, it has an onset a pre-nasalized consonant and not an NC cluster.

Clements (1978) observes that there is vowel lengthening before NC clusters in most Bantu languages as illustrated by (6) adapted from Katamba (1989).

6) Ekegusii NC clusters

	Word	pronunciation	gloss
a)	omoonto	/omoonto/	person
b)	ebaando	/eβaando/	maize
c)	engombe	/ɛŋgɔɔmbɛ/	cow
d)	eyaanga	/ejaaŋga/	dress

This data shows that the vowel before every nasal consonant is doubled (lengthened). For example, in omoonto in (6a) the vowel /o-/ in the prefix {omo-} is doubled so that it becomes the nucleus of the initial syllable of the root {nto}. Clements (1978) observes that such lengthening regularly holds in many Bantu languages, including Yao, Hehe, Sukuma and Kuria spoken in Tanzania and Kikuyu, Luhyia, Kuria spoken in Kenya and many others.

The assumption, according to Clements (1978), is that a pre-consonantal nasal has a special prosodic status that is dominated by a vowel rather than a consonant. This normally results in syllabification of the nasal into the coda of the preceding syllable, but the fact that syllables should not be closed (Prince and Smolensky, 1993) is taken to argue against positing nasals in the coda position or having closed syllables. The syllable is therefore syllabified in the onset of the following syllable, which leads to compensatory lengthening of the preceding vowel by re-association of the standard timing unit as illustrated by (7).

7) EkeGusii compensatory lengthening of vowels

Input:	Omoonto	'person'
i)	*moon.to	nasal as Coda
ii)	moo.nto	nasal as Onset
iii)	*moo.n.to	nasal as syllabic consonant

This data shows that it is (7ii) which necessitates compensatory lengthening. This argument depends on the assumption that the nasal in the vowel NC sequence must be in non-linear analysis (Clements, 1986). Here, the pre-nasal consonant lengthening is treated as compensatory lengthening coming from the fact that the nasal is deprived of its vowel slot because it is moved into the onset slot in the word and so a vowel must come in to fill the empty vowel space left by the nasal. This is demonstrated by Figure (4).

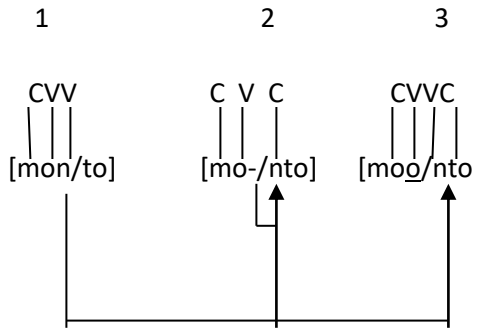

Figure (4): EkeGusii vowel lengthening Adapted from Katamba (1989)

Figure (4) indicates that the vowel [o] moves in (in 3) to fill in the gap left behind (in 2) by the nasal [n], which is in the onset position (in 2) having moved from the coda position (a mora) (in 1) leaving behind an empty slot necessitating vowel lengthening. This is presented on a syllable node as figure (5).

Figure (5): EkeGusii compensatory lengthening

Adapted from Katamba (1989)

The phonological evidence in support of the fact that the nasal in NC combination is Onset is that in most languages, most syllables are open; that is, syllables normally end in vowels (Kager, 1999).

Defricativization

Defricativization is another process that is caused by Pre-nasalization. Here, according to Cammenga (2002), if the consonantal element in the combination that is pre-nasalized is a voiced continuant, it loses the [+CONTINUANT] feature. In other words, it becomes [-CONTINUANT]. This, Cammenga observes, is accounted for as rightward spreading of [-CONTINUANT] specification of the nasal to the consonantal element. This process is described thus: Voiced continuants are turned into voiced obstruents whenever they are prenasalised. In EkeGusii, /β/ is turned into[b], /ɣ/ into [g] and /r/ into [d] as illustrated by (8).

8) EkeGusii defricativisation

i) /β/ →[b]

input: /e-n-/ + /βori/	'goat'
affixation	| e-n-βori|
Prenasalisation	/ enβori/
Nasal homorganisation	[embori]

ii) /ɣ/ → [g]

input: /ɛ-n-/ + /ɣɔri/	'rope'
affixation	ɛnɣɔri
Prenasalisation	ɛnɣɔri
Nasal homorganisation	ɛŋgɔri

iii) /r/ → [d]

input: /e-n-/ + /raɣera/	
affixation	enraɣera
Prenasalisation	enraɣera
Nasal homorganisation	endaɣera

Adapted from Cammenga (2002)

This data shows that whenever a voiced continuant obstruent is adjacent to a nasal, it loses its [+CONTINUANT] feature and becomes [-CONTINUANT]; in other words, it is defricativised. This confirms the fact that EkeGusii does not have the stops: ([b], [g] and [d] respectively, which are the end products of defricativization.

EkeGusii Nasal re-syllabification

Ferguson (1963), Hyman (1985), and Nasukawa (2004) observe that syllabic nasals, which are found in languages such as Pali, Japanese, and many Bantu and Ogoni languages, exhibit both consonantal and vocalic characteristics in terms of their tonal properties and syllabic distribution. This is true of EkeGusii language. According to Cammenga (2002), whenever pre-nasals occur word initially, their nasal elements may optionally become syllabic and bear tone. This tone may or may not be distinct from that of the next tone bearer, that is, the next syllable. Such changes may occur in word initial position only. Nor does it seem to be limited to pre-nasals only. In explaining the nasal re-syllabification process in this section, this paper will, in the process, explain other rules, which according to Cammenga and indeed this study are presupposed by the process. In fact, Cammenga simply refers to the various processes which finally lead to syllabification as delinking rule.

Though viewed as optional occurrence in word initial positions, nasal syllabification is a common process, especially in Bantu languages. In cases where a nasal is followed by a consonant, syllabification takes place as exemplified by (9) adapted from Cammenga (2002:90).

9) a) nasal syllabification in word initial position

/n-to- taatʃ -ɛ/
F-1p-fetch-FV
[ntotaatʃe]
'We will fetch (water) today'

b) /in- mo- taa ts- e/

F– 2p1-fetch-fv
[mmotaatʃe]
'You will fetch (water) today'

c) in-βa-taatʃ-e/

F-3p-fetch-fv
[mbataatʃe]
'They will fetch water today'

Syllable nasals are underlined in (9). The data indicates that the nasal element is in the word initial position. There are cases where nasals may also be syllabified before vowels as in (10).

(10) Nasal syllabification before vowels

Input:	/-eβ-/	'forget'
Suffixation		-eβe
Prefixation		n-eβ-
Nasal resyllabification		neβ-
Pre-nasal /i/ insertion		ineβ-
Nasal velarization		-iŋeβ-
Output:		[iŋeβe] <ingebe> 'forget me'

Adapted from Cammenga (2002: 90)

Data sets (9) and (10) are accounted for by word initial delinking rule, which is exemplified by figure (6).

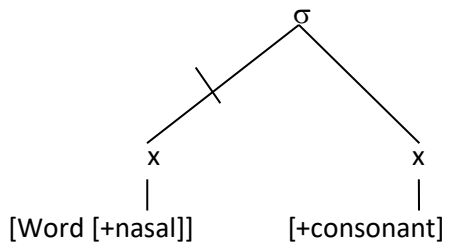

Figure (6): EkeGusii delinking rule

Source: Cammenga (2002)

This figure shows that, the delinking rule optionally delinks, in word initial position, a pre-nasalized consonant from the syllable ([σ]) to which it is attached. This is what necessitates re-syllabification. This is because, the delinked word initial nasal floats, which by convention may not be relinked to the following consonant, figure (7) further exemplifies.

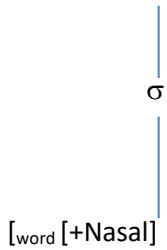

Figure (7): EkeGusii nasal re-syllabification rule

Source: Cammenga (2002)

This rule optionally assigns a nucleus to any floating word initial nasal. This is nasal re-syllabification. The process of nasal syllabification starts with pre-nasalization, where word initial nasals are pre-nasalized. Pre-nasalization then triggers nasal homorganization, in which a nasal shares place feature with the consonant it precedes. Then defricativization takes place where and when applicable especially when the following consonant is a fricative (continuant). This is then followed by the nasal de-linking process, as in figure (6) and finally, re-syllabification as in figure (7). This process is summarized in (11).

11) EkeGusii nasal syllabification process

Input	/-ɣor-/ ‘buy’	
Suffixation	/-ɣore/	
Prefixation	/n-ɣore/	
Prenasalisation	/nɣore/	
Nasal homogenization	ŋɣore	
Defricatirization	ŋgore	
Nasal delinking	ŋ-gore	
Nasal resyllabification	ŋ.gore	
Output	[ŋ.go.re]	Adapted from Cammenga (2002)

This data show that the nasal consonant in the syllabified form forms the initial syllable of the word in which it is initial. This is after delinking itself from the syllable in which it is attached. This means that it does not form a consonant cluster with the consonant with which it occurs.
This is illustrated by Figures (8) and (9) for the output in (11) above.

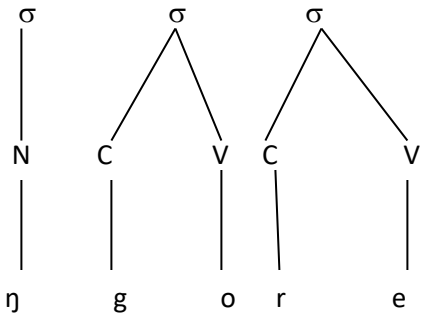

Figure (8): Nasal delinking leading to nasal syllabification
Adapted from Cammenga (2002)

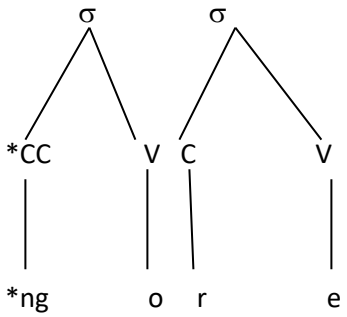

Figure (9): Nasal consonant cluster forming part of a syllable

Adapted from Cammenga (2002)

In figure (8), the nasal forms a syllable on its own; it has delinked itself from the syllable to which it is attached, while in figure (9) it is part of the syllable it is attached to, thus forming a consonant cluster which is not allowed in EkeGusii.

Following the foregoing discussion and conclusions on nasal re-syllabification which has mainly drawn from Cammenga (2002), this study supports the argument that EkeGusii and indeed other Bantu languages do not treat nasals plus consonants as a cluster of consonants; but rather as a pre- nasal consonant- the nasal (which is vowel like since it is syllabic) and a consonant.

Conclusion

The arguments advanced in this paper have given supportive evidence to the view that nasal consonant sequences in EkeGusii are pre-nasalized consonants. Thus, nasal consonant glides are treated as secondary realizations of homorganized vowels aimed at ease of articulation, all the nasals in EkeGusii are syllabified because the delinking of the nasal from the consonant with which it occurs, makes the nasal stand on its own as a syllable (in EkeGusii, like in most languages, vowels, unlike consonants, form syllables on their own), therefore, the nasals in this study are treated more as vowels as compared to consonants, because they occupy vocalic

positions in syllables. All these observations support the argument that EkeGusii does not entertain consonant clusters.

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