Dahl's Law in Kitharaka

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Abstract

This paper discusses the nature of Dahl's Law in Kitharaka. It is shown that the rule has diachronically operated on Kitharaka roots and that it operates on the prefixes synchronically. Moreover, it is argued that, whereas the motivation for the rule's diachronic operation is not clear, its synchronic operation is motivated by the need to conform to a condition in Kitharaka grammar whose function is to prevent occurrence of word forms that contradict the outcome of the diachronic operation of the rule.

Besides Kitharaka words of native stock that undergo the synchronic operation of the rule, further evidence has been adduced from loan words to demonstrate that Dahl's Law is, indeed, synchronically operational in the language.

In article entitled "Dahl's Law and Thagicu", Bennett (1967:133) states that:

> *Dahl's Law is a dissimilatory phenomenon, or more accurately, the name given to a number of similar dissimilatory phenomena, found in a number of the Bantu language of East Africa and named after Edmund Dahl, who noted it in Nyamwezi: Its geographical distribution is very limited: it is restricted to the north-eastern corner of the Bantu area, its limits being roughly the Thagicu Group on the north, Hehe and Bena on the South and Nyarwanda on the West.*

Bennett (1976:133) goes on to comment on the Dahl's Law as it applies, according to him, in Kitharaka:

> *In Tharaka, the only non-post nasal consonant affected is again k. Also affected, however, are mp, nt and ŋk. The status of Dahl's Law in prefixes is uncertain. The consonants conditioning Dahl's Law in Tharaka are t, c, k, nt, ŋk, and probably, though no examples are available, mp and ɲc.*

Bennett's claims on Dahl's Law in Kitharaka are, broadly speaking, corroborated by our investigation. However, it is not true that the status of Dahl's Law in prefixes is uncertain. On the contrary, Dahl's Law in Kitharaka operates on the voiceless velar stop found in the prefixes for noun classes 7, 12, 15 and 17. The noun prefixes for these classes are {ke}, {ka}, {ko} and {ko} respectively. The rule challenges /k/ into [ɣ].

Besides /t/, /c/, /k/, /nt/ and /ŋk/ which, as Bennett correctly observes, condition the operation of the rule, the rule also operates in the environment of /mp/ and /ɲc/ as he suspects. Moreover, /p/ likewise conditions the operation of the rule. In a nutshell, any voiceless consonant, including devoiced nasals, will condition the change as illustrated below[1]:

(1)

/t/

/ko + tɛm + a/	→ [ɣotɛma]	to cut
/ko + ter + i + a/	→ [ɣotirya]	to postpone

/c/

/ko +cɛry + a/	→ [ɣocɛrya]	to search for
/ka + camba/	→ [ɣacamba]	small bull, small cock

/k/

/ka + ka/	→ [ɣaka]	this one (cl.12)
/ko + ko/	→ [ɣoko]	here (cl.17)

/nt/

/ko + nto/	→ [ɣonto]	somewhere (cl.17)
/ka + nto/	→ [ɣanto]	something (cl.12)
/ke + nto/	→ [ɣento]	something (cl.7)[2]

/ k/

/ka + aŋki/	→ [ɣa:ŋki]	small fire
/ke +ɔŋka/	→ [ɣyɔŋka]	alone (cl.7)

/mp/

/ka + ɛmpɛ /	→ [ɣɛ:mpɛ]	small wooden honey container
/ke + ɛmpɛ/	→ [ɣyɛmpɛ]	wooden honey container

/ c/

/ko + iɲcy + a/	→ [ɣwiɲcya]	to close the eyes
/ka + iɲci/	→ [ɣaiɲci]	dry thorny shrub, small fence made of thorny branches

/p/

/ka + pɛmpɛ / ⟶ [ɣapɛmpɛ] small maize cob, small maize plant
/ka + pandi/ ⟶ [ɣapandi] small grass-hopper

All the examples given above show the operation of Dahl's Law within a morphological word. This need not be the case. The rule also operates beyond the boundary of a morphological word such that it affects segments in a preceding word[3]. The two words, however, should constitute only one phonological word. This extended range of Dahl's Law is illustrated by the data below:

(2)

/ke + a # ke + rem + i/ ⟶ [ɣyakeremi] - Kirimi's (cl.7)
/ko + a # ka + ɣɔndu/ ⟶ [ɣwakaɣɔndu] - At Kagondu's
/ka # to + ɣit + ɛ/ ⟶ [ɣatoɣitɛ] - Let us cut

The voicing of the initial /k/ in each of the three phonological strings is clearly due to the dissimilative influence of the voiceless segment occurring immediately after the (morphological) word boundary. When the first segment of the second morphological word is voiced, the string-initial /k/ remains voiceless. Thus:

(3)

/ke + a # mo + rem + i/ ⟶ [kyamoremi] Morimi's (cl.7)
/ko + a # n + jɛro/ ⟶ [kwaɲɟɛro] At Njeru's
/ka # ro + ɲu + ɛ/ ⟶ [karoɲuɛ] Let them (cl.12) drink

When three voiceless segments (with intervening vowels) follow one another in a phonological word, Dahl□s Law operates retrogressively until it exhausts the candidates for its operation. This happens after the second of the three voiceless segments is voiced. Once this happens, the process cannot precede any further because its structural description does not exist any more.

According to the above data, Dahl's Law as it operates on /k/ Stipulates that /k/ in a prefix changes into [ɤ] when the first consonant of the root is voiceless. The formal rule for the process is given in (4) below:

(4)

$$\begin{bmatrix} +\text{con} \\ +\text{back} \\ +\text{high} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cont} \\ +\text{voice} \end{bmatrix} / \text{—} \; [+\text{syll}] \; (+\text{syll}) \; \begin{bmatrix} +\text{cons} \\ -\text{voice} \end{bmatrix}$$

In Wa Mberia (1981:63) it was observed that although the morpheme {to} is also prefixed to roots beginning with voiceless consonants, /t/ does not undergo any change in spite of the fact that /k/ and /t/ are both voiceless stops. This writer further observed that:

> *Either the motivation for the rule is non-phonetic and that /t/ does not meet the structural description for the rule, or that the rule belongs to the category of p-rules but non-phonetic factors block it from extending to /t/. There is no evidence that the rule is motivated by non-phonetic factors...*

This writer (Wa Mberia, 1981: 64)) concluded that the rule belongs to the category of p-rules (in the sense of Hooper (1976) but its application to /t/ is blocked by semantic considerations because if the morpheme {to} were to be realized as [ro] whereby /t/ changes into [r] the morpheme would merge with class 11 marker {ro} which is also realized as [ro].

Our position on this issue has since shifted. We no longer think that the operation of the rule is blocked from applying to {to} by semantic considerations. Our current investigation has revealed that {to} is not the only prefix with a voiceless consonant that does not undergo Dahl's Law. {ci} likewise does not undergo the process. Thus:

(5)

/ci + a + kwa/	⟶	[cyakwa]	mine (cl.10)
/ci + a + ɛto/	⟶	[cyɛto]	ours " "
/ci + a + kɛ /	⟶	[cyakɛ]	his/hers " "
/ci + a + ku/	⟶	[cyaku]	yours (sg) " "

When the substitute {ke} or {ka} for {ci} the /k/ in each of the two prefixes changes into [γ] as show below:

(6)

/ke + a + kwa/	⟶	[γyakwa]	mine (cl.7)
/ko + a + ɛto/	⟶	[γwɛto]	at ours (cl.17)
/ka + a + kɛ /	⟶	[γa:kɛ]	his/hers (cl.12)
/ke + a + ku/	⟶	[γyaku]	yours (sq). (cl.7)

Our categorization of the rule has also changed. Our position is that Dahl's Law as it operates in Kitharaka is not a p-rule as earlier suggested but

rather an MP-rule. One basic characteristic of p-rules is that they operate in such a way that they leave no exceptions (Hooper, (1976). The rule under discussion does not apply to {to} and {ci} which, from a phonetic point of view, are similar (in terms of voiceless of the consonant) to {ke}, (cl.7) {ka} (cl.12) {ko} (class 15) and {ko} (class 17). All of these prefixes have a voiceless consonant. From where, then, does the rule derive its motivation?

A scrutiny of Kitharaka roots containing more than one consonant reveals that the language does not allow occurrence of roots in which two voiceless consonants (with one or more intervening vowels) follow one another. On the contrary, the roots take the form of the examples given in (7) below:

(7)

Root	Word containing the root	Gloss
Nouns		
βweβwe	mbweβwe	spider
ɲɛɲɟɛ	ɲɛɲɟɛ	cockroach
βori	mbori	goat
moɲaɣati	moɲaɣati	brown ants
ðena	maðena	problems
Verbs		
ɣor	koɣora	to buy
ririkan	koririkana	to remember
tan	ɣotana	to circumcise
kɛð	ɣokɛða	to harvest
rem	korema	to cultivate
Adjectives		
nɛnɛ	omonɛnɛ	big (cl.1 and cl.3)
nini	kaniní	little, small
nɔru	enɔru	fat (cl.9)
jɛro	iɲɟɛro	white (cl.10)
jiro	iɲɟiro	black (cl.10)

There appears to be a relationship between the phonological nature of the above forms and Dahl's Law. Indeed there is a relationship. However, the roots on the one hand and the prefixes on the other, require different treatment with regard to the rule.

We have presented the change /k/ ⟶ [γ] as a synchronic process because synchronic processes link two surface forms (Hooper, 1976). In this case, the rule links [k] to [γ] both of which are surface forms occurring in different phonetic environments.

Now, let us look again at the roots in (7) above. These forms are too systematically devoid of any sequences of two voiceless consonants for the phenomenon to be attributed to chance. The voicing of some of the consonants (some are inherently voiced being reflexes of voiced proto-segments) has resulted from the operation of Dahl's Law. However, whereas the operation of the rule in the prefixes is synchronic, what is evidenced in the roots is the outcome of the diachronic operation of the rule. In other words, unlike the synchronic alternations in the prefixes, the root forms to which the rule applied (that is, the structural description) do not surface in the language. What surfaces is the outcome of the rule, that is, its structural change. The structural description of the rule in the context of the roots belongs to an earlier stage of Kitharaka or, perhaps, to an ancestor of the language.

For the purposes of our discussion, let us compare the current Kitharaka roots with their equivalents in Common Bantu (C.B.) as reconstructed by Guthrie (1970/71):

(8)

Gloss for C.B.	**C.B. Form**	**Kitharaka Equivalent**	**Exemplification in a Kitharaka Lexical Item**	**Gloss for Kitharaka**
bush	*caka	ðaka	keðaka	bush
wake	*cicimuk titimuk	ðitimok	koðitimoka	to stir of animals
cat	*paka	βaka	kaβaka	small cat, kitten
cut	*ket	γit	koγita	to cut
quarrel	*tet	ðɛt	koðɛta	to quarrel
chicken	*kuku/koko	γoko	ŋgoko	chicken
laugh	*cek	ðɛk	koðɛka	to laugh
three	*tatu/catu	ðato	iðato	three
python	*catu	ðato	nðato	python
eyelash	*kope/kopi	kɔβɛ	ŋkɔβɛ	eyelashes
mat	*keka/	γɛka	moγɛka	mat
well	*cima/tima	ðima	keðima	well

Looking at these data it is clear that, phonologically, the Kitharaka forms are linked to their common Bantu equivalents by, among other things, a rule that voices one of the two voiceless consonants occurring in a sequence (with an in-

tervening vowel). Except for –kɔβɛ (the root for "eyelashes") where the second consonant becomes voiced, it is the first consonant in a sequence of two consonants voiceless that becomes voiced. The nature of the diachronic change is therefore similar to the one obtaining in the synchronic operation of Dahl's Law whereby the first voiceless consonant in a sequence is voiced and the next voiceless consonant remains voiceless. This similarity in the structural change between the process that operated diachronically in the roots and the one that operates in the prefixes is further evidence that we are dealing with two manifestations of the same rule: namely, diachronic and synchronic operations of Dahl's Law respectively.

The historical changes through which Kitharaka roots have evolved from their Common Bantu equivalents (allowing for telescoping) may be show as follows:

(9)

C.B.	Kitharaka
*caka	ðaka
*cicmuk/ titimuk	ðitimuk
*paka	βaka
*ket	γit
*kuku/koko	γoko
*cek	ðɛk
*tatu/catu	ðato
*catu	ðato
*kope/kopi	kɔβɛ
*keka	γɛka
*cima/tima	ðima

When we abstract individual Proto-segments with their corresponding reflexes the following pattern emerges:

(10)

*c > ð

*t >ð *p > β

*k > γ

Whereas the voicing of *p and *k gave rise to different reflexes in Kitharaka, the voicing of *c and *t resulted in a phonological merger whereby both gave rise to /ð/.

The outcome of the historical operation of the rule has been maintained in Kitharaka roots by Grammatical Requirement given in (11):

(11)

A voiceless consonant may not immediately precede another voiceless consonant in a sequence of syllables within a phonological word.

The motivation for the diachronic operation of Dahl's Law in Kitharaka is not clear. However, if we accept the presence of Requirement (11) in Kitharaka grammar, then the motivation for the synchronic operation of the rule becomes obvious. We pointed out above that as it applies Dahl's Law is synchronically a morphophonemic rule. The presence of Requirement 11 in the language provides the morphophonetic motivation for the rule. The rule applies to the prefixes to satisfy the demands of the Requirement.

It might be queried whether the data we have given to illustrate the synchronic operation of Dahl's Law does not, infact, merely show the end result of the rule's diachronic operation. In other words, one might doubt that Dahl's Law is synchronically operational in Kitharaka. There is evidence to show that the rule is indeed synchronically operational in the language. Loan words that satisfy its structural description undergo it. Thus:

(12)

/ka + kare/	→ [ɣakare]	a small car
/ka + kompyuta	→ [ɣakompyuta]	a small computer
/ka + cukuru/	→ [ɣacukuru]	a small school

Where the loan words do not meet the rule's structure description they retain the voiceless velar stop in the prefix. For example:

(13)

/ka + βaisikiri/	→ [kaβaisikiri]	a small bicycle
/ke + βasi/	→ [keβasi]	a big (not so nice looking) bus
/ka + βaraβara/	→ [kaβaraβara]	a small road.

We can say with certainty, therefore, that, whereas the absence of voiceless segments in succession in Kitharaka roots is the result of the diachronic operation of Dahl's Law, the voicing of /k/ as demonstrated in the above data clearly shows that the rule is still operational in the language.

Endnotes

1. Kitharaka has a nasal devoicing rule

2. /mp/, /nt/, / ɲc/ and /ŋk/ are consonant clusters. The nasal is however voiceless owing to the influence of the following obstruent

3. A phonological word in Kitharaka is marked by a single stress on the penultimate syllable

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