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Word-minimality vis-à-vis morphophonemics of genitives in NKB

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Abstract

The constraint of word-minimality stipulates that every grammatical word is a prosodic word: every content word must have a foot. Preferred foot type across languages is a disyllabic (mostly) trochee. Bimoraicity sneaks in in the absence of required segmental melody phonologically. The metrics the Noakhali Dialect of Bangla (now on NKB) predominantly falls in line with this general preference. In it (a) scansion takes place left-to-right; (b) only one foot –a syllabic trochee -- is constructed aligned with the left edge; (c) all syllables are light (L) i.e., long vowels or diphthongs are not distinctive in terms of weight value (both monomoraic) and codas are not moraic. Corollary: no iterativity is practiced; quantity sensitivity/insensitivity is ruled out. Compounds are kept out of consideration here. Focusing only on genitive suffixation the paper explores the NKB mechanism/s to fulfill word minimum requirements. The paper arrives at the following findings:

- NKB has an undominated constraint for syllabic trochee of (LL) type. If the base is monosyllabic phonetic lengthening is resorted to ensure moraic binarity for a trochee.
- Under affixation of the genitive –ɛɾ/-ɛr the incoming mora of the suffixal vowel is put into service as mora-provider, and simultaneously moraic lengthening of the base vowel is discarded/not required.
- ɛɾ/-ɛr is the UR form of the genitive suffix, not –r. The latter is at the most an allomorph of the former.
- Word minimality condition is satisfied at every level through a disyllabic/bimoraic foot.
- As for morphophonemics, vowel lengthening at phonetic level is resorted to as and when needed. Neither vowel epenthesis nor deletion is attested. Vowel assimilation creeps in and ensures the clandestine presence of the suffixal vowel –ɛ/ɛ.

Keywords: morphophonemics, word minimality, moracity, phonetic lengthening

1. Introduction

Every content word in a natural language must be a grammatical word. For this there must be a foot in the word constituted either on the syllabic or moraic level or both. The foot shape is binary constituted of either two syllables or moras. Thus, the minimum shape of word is minimally a foot. In the Noakhali variety of Bangla (henceforth NKB) the minimum word size is of a disyllabic trochee. In the absence of any phonetic melody as in a monomorphemic word the foot is a moraic trochee. Under suffixation this canonical stand is multiply challenged. However, the dialect resorts to various morphophonemic means to uphold its fundamental prosodic tenets. In the present study, this has been illustrated in respect of the suffixation of genitive suffix -r/-er. In course of the following issues crop up and they are given a principled account in terms of the underlying prosodic grammar of NKB.

- Monosyllabic CV and CVC words acquire prosodic word status through formation of moraic trochees via phonetic lengthening since coda is non-moraic and indifferent to metrification processes.
 Under suffixation of genitives, sequences with one or more syllables with final CVC take the suffix –er/-er:han-er ‘of beetle leaf’, beɽ-er ‘of cane’ etc.
- Those with final CV go for –r: sā-r ‘of tea’, bo-r ‘of bride’ etc. or ɽoi-r ‘of curd’, bōi-r ‘of book’. Optional forms with –ɛr/-er also exist though ɽoi-er, bōi-er.

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- Thus a priori there exists an ‘allomorphic’ relation between the two SR forms of the genitive –er/-er and –r.
- Superficially, this general equation is driven by the cross-linguistic phonotactics of syllabification.
- However, things get problematized when one notices exceptions galore to these phonotactically determined rules.
- Why do CV bases take –er/-er (VC) as the suffix at the apparent cost of bimoracity acquired through phonetic lengthening of the base vowel, and Maximal Onset Principle? How does the theory account for the presence of the immigrant mora? Is no lengthening deployed? Is the lengthened vowel curtailed to one-mora size? Or is it treated as extrasyllabic?
- Answer to these queries is found out to be as the following:
 - a) No phonetic lengthening is deployed once the suffixal vowel enters the scene with its own mora, and consequently, ensures bimoracity at the syllabic or/and moraic level.
 - b) In between a high and a low vowel (at the morpheme boundary) a glide [j] emerges fulfilling the phonetic requirement for an onset in the second (VC) syllable.
- The contention for –r as the UR suffix fails on the principal count that often native speakers do not prefer it in case of monosyllables with CV despite the process and result thereof being phonotactically amiable: bimoracity is ensured on moraic/syllabic (LL) count with –er/-er.
- If not totally discounted, –r is treated as optional coexisting with –er/-er. Further, in words like gĩa-r ‘of

cream color’, /sia-r/ ‘of musk rat’ the UR form of the genitive is –er/-er. It is clandestinely present with the non-high vowel –e/e- assimilated to second part of the diphthong in the base i.e. -a. A clinching and clear-cut piece of evidence is derivable in this respect from the optional co-existence of –r and –er/-er in kia-r ~ ki-er ‘of what’: -e supplants base /a/ and asserts its moraic value.

The discussion moves along the following: Section 2 presents the relevant data. 3 analyses CVC-er; 3.1 deals with CVVC-er. Metrics of diphthongs are addressed in 3.2. while section 3.3 takes up the issues relating to trisyllables with final CVC. 3.4 focuses on Quadra-syllables with final CVC. Section 3.5 continues the analysis with words incorporating more CVCs. In 4.0 we discuss the metrification of CV sequences: 4.1 deals with disyllables (CV.CV), 4.2 with trisyllables (CV.CV.CV). 4.3 extends the discussion to Quadra-syllables (CV.CV.CV.CV). 4.4 brings in issue of open and closed syllabic combines and 4.4.1 takes it further ahead. Section 5.0 opens up the issue of the underlying form of the genitive suffix in NKB and puts forth a formidable contention for –er. 5.1 takes the discussion on to open monosyllables that opt for –er only. 5.2 explores monosyllables with diphthongs. 5.3 offers a comparative discussion on what logically deserves to be the underlying suffixal form of the genitive in NKB -- -er or -r. 6.0 concludes the study recapitulating its salient findings.

2. Data

1. CVC-er → CV.CVC (σ.σ) (LL)

han-er	‘of beetle leaf’	ḍaṭ-er	‘of tooth’
mḍ-er	‘of wine’	zḍl-er	‘of water’
bḍ-er	‘of the Vedas’	bḍ-er	‘of cane’

2. CVVC-er → CVV.CVC (σ.σ) (LL)

hoor-er	‘of father-in-law’	hoon-er	‘of phone’
sail-er	‘of rice’	ḍain-er	‘of witch’
hial-er	‘of jackal’	hian-er	‘of that one’

3. CV.CVC-er → CV.CV.CVC (σ.σ)σ (LL)L

go.rib-er	‘of poor’	fo.ril-er	‘of the body’
bḍ.ḍaiṭ-er	‘of domestic animals’	biḍal-er	‘of crooked’
gḍ-er	‘of morsel’	gḍ-er	‘of glass’

4. CV.CV.CVC-er → CV.CV.CV.CVC (σ.σ)σσ (LL)LL

u.lu.sḍn-er	‘of wild grass’	ha.ri.ken-er	‘of lantern’
mḍ.ra.mḍ-er	‘of repairing’	k ^h o.ḍa.mḍ-er	‘of request’
si.ga.rḍ-er	‘of cigarettes’		

5. CVC.CVC-er → CVC.CV.CVC (σ.σ)σ (LL)L

ḍom.pḍd-er	‘of property’	hḍr.bḍ-er	‘of mountain’
an.ḍaz-er	‘of guesswork’	un.ḍur-er	‘of rat’
hḍm.boil-er	‘of jute stick’	hen.ḍḍl-er	‘of pant’

6. CVC.CVC.CVC-er → CVC.CVC.CV.CVC (σ.σ)σσ (LL)LL

ʃəŋ.rək.kən-er	‘of preservation’		
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7. CV- r/-er → CVC ~ CV.[j]VC (σ) ~ (σ.σ) (L) ~ (LL)

ga-[a]r ~ ga-er	‘of body’	sã-[a]r ~ sã-er	‘of tea’
hi-[i]r ~ hi-er	‘of paternal aunty’	ǰi-[i]r ~ ǰi-er	‘of rarefied butter’
bo-[o]r ~ bo-er	‘of bride’	zō-[o]r ~ zō-er	‘of jolt’
ku-[u]r ~ ku-er	‘of cooing’	gu-[u]r ~ gu-er	‘of stool’
ɦu-ur ~ ɦu-er	‘of blowing’	ʃu-ur ~ ʃu-er	‘of shoe’

8. CVV-r → CVVC (σ) (L)

kia-r/ki-er	‘of what’	ǰia-r	‘of cream color’
sia-r	‘of musk rat’	zīã-r	‘of vegetable type’
kua-r	‘of well’	dua-r	‘of refrain’
bia-r	‘of the fake’	mua-r	‘of musk/direction’
kōa-r	‘of cell of jackfruit’	k ^h oa-r	‘of dew’

9. CVV-r/-er → CVVC ~ CVV.[j]VC (σ) ~ (σ.σ) (L) ~ (LL)

hāi-r ~ hāi-er	‘of husband’	beai-r ~ beai-er	‘of son’s/daughter’s father-in-law’
ǰēi-r ~ ǰēi-er	‘of husking device’		
koi-r ~ koi-er	‘of fish type’	k ^h oi-r ~ k ^h oi-er	‘of burst rice’
gōi-r ~ gōi-er	‘of dry cow dung’	soi-r ~ soi-er	‘of cot’

10. CVV-er → CVV.[j]VC (σ.σ) (LL)

kui-er	‘of cooing’	ɖui-er	‘of two’
rui-er	‘of rohu fish’	zūi-er	‘of jūi flower’
ɖūi-er	‘of a type of cake’	būi-er	‘of land’
mūi-er	‘of mother’s sister’	hūi-er	‘of a kind of vegetable’

11. CV.CVV-er/-r → CV.CVVC ~ CV.CVV.[j]VC (σ.σ) ~ (σ.σ)σ (LL) ~ (LL)L

go.ʃai-r ~ go.ʃai-er	‘of priest’	za.mai-r ~ za.mai-er	‘of bridegroom’
bi.lai-r ~ bi.lai-er	‘of cat’	ʃi.lai-er ~ ʃilai-r	‘of sewing’
kə.loi-r ~ kəloi-er	‘of pulse type’	k ^h ə.loi-r ~ k ^h əloi-er	‘of fish-keeping basket’

12. CV.CVV-er → CV.CVV.[j]VC (σ.σ)σ (LL)L

hi.ʃai-er	‘of miser’	hi.lai-er	‘of envious person’
bi.ɖai-er	‘of departure’	zə.loi-er	‘of nail’
ha.nai-er	‘of shehnai/pipe’	na.ɖai-er	‘of reel’
zi.nai-er	‘of oyster’		

(-r is possible but less preferred)

13. CV.CV -r → CV.CVC (σ.σ) (LL)

bi.ri-r	‘of bidi’	ma.ʃi-r	‘of mother’s sister’
no.ɖi-i	‘of river’	ɖo.ni-r	‘of the rich’
sa.ra-r	‘of seedling’	ma.ʃa-a	‘of head’
go.ra-r	‘of root/base’	hi.ga-r	‘of that person’

14. CV.CV.CV-r → CV.CV.CVC (σ.σ)σ (LL)L

ba.ʃa.ʃa-r	‘of candy’	a.ma.ʃa-r	‘dysentery’
hə.na.mi-r	‘of donation’	bai.a.li-r	‘of friendship’
bai.sa.li-r	‘of trickery/joking’	ʃa.la.ʃi-r	‘of bamboo ladle’
ga.sa.lu-r	‘of wild potato’	hə.na.lu-r	‘of a tree type’

15. CV.CV.CV.CV-r → CV.CV.CV.CVC (σ.σ)σσ (LL)LL

hã.zi.la.mi-r	‘of playfulness’	go.ri.mo.ʃi-r	‘of idleness’
a.ra.sa.li-r	‘indiscipline’	k ^h oi.a.ʃa.li-r	‘of irregular behavior’
bi.ða.la.mi-r	‘of crookedness’	boi.ʃa.la.mi-r	‘of crookedness’
sɛ.ra.me.ri-r	‘of twisting of the body’	no.ɖi.gi.ri-r	‘of debauchery’
ʃo.ʃa.mo.ɖi-r	‘of cajoling’		

16. CVC.CV.CV-r → CVC.CV.CVC (σ.σ)σ (LL)L

hãiz.la.mi-r	‘of playfulness’	bais.la.mi-r	‘of playfulness’
hɔɖ.ga.ia-r	‘of the hateful person’	hon.ɖa.ni-r	‘of intercourse/cheating’
hɔl.ɖa.ni-r	‘of intercourse/cheating’	bɔɖ.ma.ʃi-r	‘of crookedness’
ail.ʃa.mi-r	‘of indolence’	har.ma.ɖi-r	‘of evilness’
noit.ʃa.mi-r	‘of debauchery’	k ^h ɔn.na.ʃi-r	‘of naughtiness’
kan.ɖa.mi-r	‘of mischievousness’	beit.ʃa.mi-r	‘of effeminateness’

17. CV.CVC.CV-r → CV.CVC.CVC (σ.σσ)σ (LL)L

ha.ʃail.la-r	‘of width’	boi.ʃail.la-r	‘of unpredictable person’
soi.ʃail.la-r	‘of summer time’	ɖi.gail.la-r	‘of crosswise length’
ha.ʃair.ga-r	‘of irresponsible person’	bi.zɔr.ma-r	‘of the illicit born person’
ka.ɖail.la-r	‘of Kathalia’	bɔ.ɖoil.la-r	‘of laborer’

18. CV.CV.CVC-ɛr → CV.CV.CV.CVC (σ.σ)σ (LL)LL

a.la.mɔt-ɛr	‘of indiscipline’	mɛ.ra.mɔt-ɛr	‘of repair’
bɛ.a.ɖɔp-ɛr	‘of manner less one’	bɛ.i.ʃab-ɛr	‘of non-calculation’
bɛ.ʃa.mal-ɛr	‘of one without control’	bɛ.ʃɔ.ʃar-ɛr	‘of one without commonsense’
ɔ.na.ɖɔr-ɛr	‘of disregard’	ʃɔ.ma.sar-ɛr	‘of news’
ɔ.na.sar-ɛr	‘of bad conduct’	bɛ.ra.zal-ɛr	‘of chaos’

3. Analysis of CVC-[ɛ]r: CVC.VC → CV.CVC → (σ.σ) → (L̇L)

NKB has two variants for the genitive marker: -ɛr or -r. Beyond their allomorphic relation ascertaining the UR morpheme is a challenging task, expected to be accomplished as the study proceeds. To begin with, -r is assumed to be the underlying suffix. Added to roots of CVC type the result will be an unpronounceable coda cluster Cr#. Additionally, NKB is a cluster-free language (a variety of Bangla). To get around this phonotactic constraint on the syllable structure a vowel ɛ is epenthesised. Thus, a disyllabic word emerges with CV.CVC structure¹: ha.nɛr ‘of beetle leaf’, ɖa.ʃɛr ‘of tooth’, mɔ.ɖɛr ‘of wine’ etc.

Notably, both in the root and the suffixed forms stress remains aligned with the left edge. The final CVC syllable fails to snatch stress. This could be a strong piece of evidence for, (a) coda non-moracity in NKB; and consequently for, (b) denial of ‘heavy’ status to a CVC syllable. One could make a logical argument for the ‘extrametrical’ status of the final C: i.e., CV.CVC → CV.CV(C) → (L̇L). In other words, the dialect insists on disyllabic word minimum and strongly avoids mora count of coda. The prosodic word emerges with an ideal syllabic trochee (L̇L) in disyllables.

3.1 CVVC-ɛr → CVV.CVC → CV[V].CV(C) → (σ.σ) → (L̇L)

Does this hold also for monosyllables with ‘long’ vowels? It needs to be stated categorically that vowel length is not phonemic in NKB. CVC goes to CVV(C) phonetically to cater to the need of a minimum of two units within a trochee, in this case two moras (first one being phonemic, and the second one on the SR being its phonetic extension). It also reemphasizes coda non-moracity: hor → ho[o]r ‘father-in-law’, hon → ho[o]n ‘phone’ etc.

Under suffixation of the genitive r -- CV[V]C.C -- the new-born final CC cluster, a prohibited item, is declustered by insertion of ɛ in between. The epenthetic vowel brings in a new mora and hence phonetic extension of the root vowel becomes redundant. A disyllabic (bimoraic) structure is the result with the primary stress invariably left-aligned because of the UNDOMINATED demand for a syllabic trochee: CVVC-ɛr → CV[V].CVC → CV[V].CV(C) → (σ.σ) → (L̇L). However, the root bimoracity occasionally continues to exist perhaps because of volitional factors; this optionality of root bimoracity is attested and documented in derived forms like ho[o]r-ɛr ~ hor-ɛ/r ‘of father-in-law’, ho[o]n-ɛr ~ hon-ɛr ‘of phone’.

3.2 Metrics of diphthongs

Diphthongs are cross-linguistically monomoraic. Monosyllabic words of CVC type with diphthong get legitimized as foot by virtue of phonetic lengthening: coda contributes no mora. Such a foot is bimoraic and a trochee

¹ Whether ɛ is the default/unmarked vowel in NKB or a part of the underlying genitive suffix itself can remain at bay for now.

in NKB. Phonetic lengthening to ensure bimoracity becomes needless since in the wake of suffixation of genitive -r an epenthetic vowel ϵ enters the scene with a default mora. The result is the same as the one for hor-er or hon-er. But this time no optionality is attested: CVVC-er \rightarrow CV.CV(C) ($\acute{\sigma}\sigma$) ($\acute{L}L$) -- boin-er 'of sister', huar-er 'of use' etc. (cf. words in (2)).

The findings so far offer a logically competent explanation to the metrics of mono- and disyllabic words with a coda consonant in NKB – former without suffixation of the genitive -r and the latter with it.

3.3 Trisyllables with final CVC

A jolt of sorts is encountered by the theory in making, by trisyllabic words born of genitive suffixation: CV.CVC-er \rightarrow CV.CV.CVC. The base itself is disyllabic and hence bimoraic; with no mora the coda consonant is debarred from participating in the metrical computation. Following suffixation of -er the stranded coda of the base gets parsed as the onset of the suffixal syllable and a new word-final CVC is born in CV.CV.CVC. Once again, the

19. $\acute{u}.lu.s\acute{o}n\text{-er} \rightarrow \acute{u}.lu.s\acute{o}.n\acute{e}r \rightarrow \acute{u}.lu.s\acute{o}.n\acute{e}(r) \rightarrow (\acute{\sigma}\sigma)\sigma \rightarrow (\acute{L}L)LL$ 'of wild grass'.
 $\acute{s}\acute{i}.g\acute{a}.r\acute{e}t\text{-er} \rightarrow \acute{s}\acute{i}.g\acute{a}.r\acute{e}.\acute{t}\acute{e}r \rightarrow \acute{s}\acute{i}.g\acute{a}.r\acute{e}.\acute{t}\acute{e}(r) \rightarrow (\acute{\sigma}\sigma)\sigma \rightarrow (\acute{L}L)LL$ 'of cigarette'

3.5 Words with more CVCs

The proposed analysis so far also successfully accounts for the metrical pattern in words with more than one CVC of which one is understandably non-final. Coda non-moracity is so strong that even in non-final positions coda consonants remain indifferent to metrical operations. In consequence

20. CVC.CVC-er \rightarrow CVC.CV.CVC \rightarrow CV(C).CV.CV(C) \rightarrow ($\acute{\sigma}\sigma$) $\sigma \rightarrow$ ($\acute{L}L$)L
 $\acute{h}\acute{o}m.boil\text{-er} \rightarrow \acute{h}\acute{o}m.boi.l\acute{e}r \rightarrow \acute{h}\acute{o}(m).boi.l\acute{e}(r) \rightarrow (\acute{\sigma}\sigma)\sigma \rightarrow (\acute{L}L)L$ 'of jute stick'
 $\acute{h}\acute{e}n.\acute{d}\phi\text{-er} \rightarrow \acute{h}\acute{e}n.\acute{d}\phi.l\acute{e}r \rightarrow \acute{h}\acute{e}(n).\acute{d}\phi.l\acute{e}(r) \rightarrow (\acute{\sigma}\sigma)\sigma \rightarrow (\acute{L}L)L$ 'of pant'

Disyllabic trochee aligned left in the prosodic word, coda non-moracity, vowel length non-distinction, and non-iterative scansion once again rule the roost!

Finally, a clinching piece of evidence in support of our contention so far is provided by the lone word in (6). It has a

21. CVC.CVC.CVC-er \rightarrow CVC.CVC.CV.CVC \rightarrow CV(C).CV(C).CV.CV(C) \rightarrow ($\acute{\sigma}\sigma$) $\sigma \rightarrow$ ($\acute{L}L$)LL
 $\acute{f}\acute{o}\eta.r\acute{o}k.k\acute{o}n\text{-er} \rightarrow \acute{f}\acute{o}\eta.r\acute{o}k.k\acute{o}.n\acute{e}r \rightarrow \acute{f}\acute{o}(\eta).r\acute{o}(k).k\acute{o}.n\acute{e}(r) \rightarrow (\acute{\sigma}\sigma)\sigma \rightarrow (\acute{L}L)LL$ 'of preservation'

Non-compound or unreduplicated words of longer sequences with CVC within are not attested in NKB.

4. Metrification of CV sequences

Let us now turn to CV sequences in NKB and examine the competence of the theorem proposed here as to its ability to account for the metrics of coda-less sequences. -r is assumed, as previously, the underlying genitive suffix. We begin the exploration with disyllables (cf.13).

22. CV.CV -r \rightarrow CV.CVC \rightarrow CV.CV(C) \rightarrow ($\acute{\sigma}\sigma$) \rightarrow ($\acute{L}L$)
 $bi.r\acute{i}\text{-r} \rightarrow bi.r\acute{i}r \rightarrow bi.r\acute{i}(r) \rightarrow (\acute{\sigma}\sigma) \rightarrow (\acute{L}L)$ 'of bidi'
 $\acute{h}\acute{i}.g\acute{a}\text{-r} \rightarrow \acute{h}\acute{i}.g\acute{a}r \rightarrow \acute{h}\acute{i}.g\acute{a}(r) \rightarrow (\acute{\sigma}\sigma) \rightarrow (\acute{L}L)$ 'of that person'
 $k\acute{o}.s\acute{u}\text{-r} \rightarrow k\acute{o}.s\acute{u}r \rightarrow k\acute{o}.s\acute{u}(r) \rightarrow (\acute{\sigma}\sigma) \rightarrow (\acute{L}L)$ 'of arum'

extrametricality treatment of the coda renders the sequence as CV.CV.CV(C) i.e., $\square\square\square = LLL$ with an ideal disyllabic trochee of ($\acute{L}L$) constructed on the two left most syllables. The final L syllable remains unparsed and unmetrified. The metrical pattern of words like $\acute{f}\acute{o}.r\acute{i}l\text{-er} \rightarrow \acute{f}\acute{o}.r\acute{i}.l\acute{e}r$ 'of body', $be.\acute{f}\acute{a}i\text{-er} \rightarrow be.\acute{f}\acute{a}i.\acute{t}\acute{e}r$ 'of domestic animals', $ba.lu\acute{s}\text{-er} \rightarrow ba.lu.\acute{f}\acute{e}r$ 'of pillow' illustrates this stand (cf. data (3)).

3.4 Quadra-syllables with final CVC

The morphophonemics of four syllable words derived through suffixation unfolds a similar metrical history. The trajectory is traced as CV.CV.CVC-er \rightarrow CV.CV.CV.CVC \rightarrow CV.CV.CV.CV(C) \rightarrow ($\acute{\sigma}\sigma$) $\sigma \rightarrow$ ($\acute{L}L$)LL. Absence of vowel length distinction and coda-moracity redefines 'all' NKB syllables as CV or light (L). Disyllabic trochee is formed with left alignment. Only one stress (secondary stress is rare, if at all present, in NKB) is placed on the leftmost syllable thanks to a strong aversion towards iterative footing. The scansion of two representative words from (4) illustrates this:

only virtual light (L) syllables participate in and define the metrics of such sequences. Suffixal concatenation has no effect on the phonology of the derived sequences. The journey of the morphophonemics is traceable as below. For additional examples refer to (5).

sequence of three CVC syllables in the base. Following genitive suffixation, the stem gets enlarged by one more syllable VC; a major reshuffling of the configuration ensues. But the proposed theory so far in the present study prevails unchallenged, unhurt.

4.1 Disyllables: CV.CV

When the genitive -r is suffixed to a CV.CV base a CV.CVC sequence results. The principle of non-moraic coda renders the final C irrelevant for computation of metrics. The consequence is predictable – it is the emergence of an ($\acute{L}L$) trochee. For illustration have a look at the following:

4.2 Trisyllables: CV.CV.CV

The story of the metrical computation for trisyllables replicates the one for disyllables. The final odd numbered

syllable – CV(C) – stands extrametrical. Syllabic-trochee-aligned-left predominates here too.

23. CV.CV.CV-r → CV.CV.CVC → CV.CV.CV(C) → (σ.σ)σ → (L.L)L
 baí.sa.li-r → baí.sa.lir → baí.sa.li(r) → (σ.σ)σ → (L.L)L ‘of trickery/joking’
 gá.sa.lu-r → gá.sa.lur → gá.sa.lu(r) → (σ.σ)σ → (L.L)L ‘of wild potato’
 ʃá.la.ʃi-r → ʃá.la.ʃir → ʃá.la.ʃi(r) → (σ.σ)σ → (L.L)L ‘of bamboo ladle’

4.3 Quadra-syllables CV.CV.CV.CV

The metrification process of four L syllables also follows suit. The final CVC syllable with the suffixal r is rendered light with the latter’s invisible presence thanks to

extrametricality. A disyllabic trochee is constructed on the two syllables from the left and the remaining two remain stranded as unmetrified. Following illustrations bear this out (cf. 15).

24. CV.CV.CV.CV-r → CV.CV.CV.CVC → CV.CV.CV.CV(C) → (σ.σ)σσ → (LL)LL
 há.zi.la.mi-r → há.zi.la.mir → há.zi.la.mi(r) → (σ.σ)σσ → (L.L)LL ‘of playfulness’
 bí.ɖa.la.mi-r → bí.ɖa.la.mir → bí.ɖa.la.mi(r) → (σ.σ)σσ → (L.L)LL ‘of crookedness’
 sé.ra.me.ri-r → sé.ra.me.rir → sé.ra.me.ri(r) → (σ.σ)σσ → (L.L)LL ‘of twisting of body’

4.4 CVC.CV.CV

The theory proposed here proves its mettle also in accounting for metrics of polysyllabic words containing both CVC and CV type syllables. The essential constraints of disyllabic trochee, one-foot in one prosodic word, no

quantity distinction between syllables, coda non-moracity and left-to-right non-iterative scansion are duly honored. Illustrations in (25) are supportive of this (based on data in (16)).

25. CVC.CV.CV-r → CVC.CV.CVC → CV(C).CV.CV(C) → (σ.σ)σ → (L.L)L
 baís.la.mi-r → baís.la.mir → bai(s).la.mi(r) → (σ.σ)σ → (L.L)L ‘of playfulness’
 aíl.ʃa.mi-r → aíl.ʃa.mir → aí(l).ʃa.mi(r) → (σ.σ)σ → (L.L)L ‘of indolence’
 hóɖ.ga.ia-r → hóɖ.ga.iar → hóɖ(ɖ).ga.ia(r) → (σ.σ)σ → (L.L)L ‘of the hateful person’
 hóɓ.ɖa.ni-r → hóɓ.ɖa.nir → hóɓ(l).ɖa.ni(r) → (σ.σ)σ → (L.L)L ‘of intercourse/cheating’

4.4.1 CV.CVC.CV

Additional justifications for the above are derivable from the metrical grammars of CV.CVC.CV (cf. 17) and CV.CV.CVC (cf. 18) words.

26. CV.CVC.CV-r → CV.CVC.CVC → CV.CV(C).CV(C) → (σ.σ)σ → (L.L)L
 bó.ɖoil.la-r → bó.ɖoil.lar → bó.ɖoi(l).la(r) → (σ.σ)σ → (L.L)L ‘of laborer’
 há.ʃail.la-r → há.ʃail.lar → há.ʃai(l).la(r) → (σ.σ)σ → (L.L)L ‘of width’
 bí.zɔr.ma-r → bí.zɔr.mar → bí.zɔ(r).ma(r) → (σ.σ)σ → (L.L)L ‘of the illicit born person’
27. CV.CV.CVC-er → CV.CV.CV.CVC → CV.CV.CV.CV(C) → (σ.σ)σσ → (L.L)LL
 bé.a.ɖɔp-er → bé.a.ɖɔ.per → bé.a.ɖɔ.pɛ(r) → (σ.σ)σσ → (L.L)LL ‘of manner less one’
 mé.ra.mɔɾ-er → mé.ra.mɔ.ɾer → mé.ra.mɔ.ɾɛ(r) → (σ.σ)σσ → (L.L)LL ‘of repair’
 bé.i.ʃab-er → bé.i.ʃa.bɛr → bé.i.ʃa.bɛ(r) → (σ.σ)σσ → (L.L)LL ‘of non-calculation’
 ó.na.sar-er → ó.na.sa.rɛr → ó.na.sa.rɛ(r) → (σ.σ)σσ → (L.L)LL ‘of bad conduct’

Despite the overall success of the metrical grammar of NKB proposed here one must have noticed that the variant of the genitive marker used in (27) is -er and this is in consonance with the phonotactic dispreference for clusters in the coda (in this case) which results from choosing -r as the genitive suffix. For a unifying approach, as has been done previously in this study, -r can be treated as the underlying morpheme and ε is a sheer epenthetic entry phonetically accomplished for declustering. The specific implications of this approach however have many crucial ramifications:

- r is the bona fide genitive marker in NKB;
- ε does not have any underlying existence as a part of the genitive suffix – its existence is sheer ad hoc and for SR

- only;
- c. coda consonants being non-moraic a vocalic segment (realized as ε here) is forced into service;
- d. ε is moraic and its role is delimited to augmenting the base by one syllable/mora to satisfy the high ranked constraint of a disyllabic trochee in NKB.

All these conjoin to weaken the locus standi of ε underlyingly in the morphemic inventory of NKB, albeit as a part of -er. As a counterview to this stand, the dialect provides plenty of evidence strongly arguing for the existence of -er as an allomorphic variant of the genitive marker. In V-ending bases r is the bona fide claimant for

realizing the genitive suffix but -er supplants -r either obligatorily or optionally! This phenomenon is glaringly present in monosyllables and disyllables. An explanation of the issues as sheer allomorphic exclusivity between -r and -er driven by the phonotactics of CV# vs. CVC# is at the most partially justified.

In the following section a strong case is made in favor of -er as the underlying genitive marker in NKB despite the phonological stipulation of coda non-moracity. Moraic value of an underlying vowel stands stronger to reason than a mere epenthetic one!

5. The genitive suffix in NKB: a case for -er

To begin with, let us have a look at the following set of disyllabic words.

28. A -r	B -er	
go.ʃai-r ~	go.ʃai-er	‘of priest’
za.mai-r~	za.mai-er	‘of bridegroom’
bi.lai-r ~	bi.lai-er	‘of cat’
ʃi.lai-r ~	ʃilai-er	‘of sewing’
kɔ.loi-r ~	kɔloi-er ²	‘of pulse type’
kʰɔ.loi-r~	kʰɔloi-er	‘of fish-keeping basket’

In (28A) CV.CV bases take -r as the genitive marker. That diphthongs are underlyingly mono-moraic and hence equals a monophthong has been convincingly argued for previously in (3.1-3.2) in this article. The final CV easily incorporates the suffixal -r producing a CVC. The theoretical proposition put forth here logically accounts for the metrical parsing of the resultant sequence in terms of the following itinerary:

29. CV.CV-r → CV.CVC → CV.CV(C) → (σ.σ) → (L.L)
bi.lai-r → bi.lair → bi.lai(r) → (σ.σ) → (L.L) ‘of cat’
kʰɔ.loi-r → kʰɔ.loir → kʰɔ.loi(r) → (σ.σ) → (L.L) ‘of fish-keeping basket’

But why the optional existence of the corresponding derived forms with -er in (28B)? As such given the analysis in (29) with the ‘morphological presence but phonological invisibility’ of the suffixal consonant even optional entry of -er into the picture is redundant. The need for an unmarked trochee of (L.L) type is well met with coda non-moracity and hence extrametricality.

Conversely, -er can be justifiably claimed to be the underlying genitive suffix in NKB. A naked -r syllabified into the coda of the final open syllable of the base stands precariously under the threat of losing its perceptual salience that licenses its locus standi as a distinct morpheme.

Assuming ε to be a ‘default’ and epenthetic vowel inserted only to ensure the survival of -r does not sound sensible either, since no phonotactic restriction prevents the incorporation of a C (-r) into the coda of a CV syllable, especially word finally. Metrical grammar does not require its presence since it contributes no mora and moreover there is no need for an additional mora after a legitimate (L.L) is formed. That it is still present in the grammatical word is

because it IS the underlying genitive suffix in NKB. It stands unmetrified as a V(C) or L at the right edge of the derived sequence. This stand is illustrated through the metrification of the same two words, this time taken from (28B).

30. CV.CV-er → CV.CVC → CV.CV.[j]V(C) → (σ.σ)σ → (L.L)L
bi.lai-er → bi.lai.er → bi.lai.[j]ε(r) → (σ.σ)σ → (L.L)L ‘of cat’
kʰɔ.loi-er → kʰɔ.loi.er → kʰɔ.loi.[j]ε(r) → (σ.σ)σ → (L.L)L ‘of fish-keeping basket’

The glide [j] in the final syllable is the result of phonetic enforcement to articulate a low vowel immediately after a high vowel. Additionally, it, a non-vocalic element, can vacuously fulfill the need for an onset in the third syllable. To re-emphasize our argument in favor of the UR status of -er let us now examine the metrics of some words where the base does avoid concatenation of -r: NKB natives instinctively go for -er (-r is possible but less preferred).

31. CV.CV-er → CV.CVC → CV.CV.[j]V(C) → (σ.σ)σ → (L.L)L
ʰí.ʔai-er → hí.ʔai.er → hí.ʔai. ‘of miser’
[j]ε(r) → (σ.σ)σ → (L.L)L
ná.ɖai-er → ná.ɖai.er → ná.ɖai. ‘of reel’
[j]ε(r) → (σ.σ)σ → (L.L)L
há.nai-er → há.nai.er → há.nai. ‘of shehnai/pipe’
[j]ε(r) → (σ.σ)σ → (L.L)L
hí.lai-er → hí.lai.er → hí.lai. ‘of envious person’
[j]ε(r) → (σ.σ)σ → (L.L)L

5.1 Open Monosyllables opting for -er

NKB presumably does not tolerate foot degeneracy. Hence in content words with open monosyllables the monophthong is subjected to phonetic lengthening so that two moras are ensured on the surface for the sake of constructing a bimoraic (equivalent to LL) trochee. Words like sā ‘tea’, bo ‘bride/wife’, ǵi ‘rarefied butter’, hi ‘paternal aunt’ are citable for illustration.

Under suffixation of the genitive marker -r (assuming the latter to be the UR genitive) the surface lengthening of the base vowel persists to equate the length of two moras: remember coda does not have mora.

In both the cases we get mono-syllabic but bimoraic trochees. With two subsequent monosyllables with one mora each the result is the same: bimoraic as well as disyllabic. For convenience of explication let us treat the bimoraic monosyllables at par with bimoraic disyllables, and both as forming virtual (L.L) trochees.

The metrical grammar of the CVs is therefore projected as CV → CV[V] → μ[μ] → (σ) = (σ[σ]) = (L.L) = minimal word.

² The subtle distinction between ε and e is insignificant here. Vowel assimilation can take care of it.

³ The fact that both in (30) and (31) the base ends in a diphthong and takes -er as the underlying form of the genitive is intriguing and opens up new scopes for study: is this merely co-incident or rule-governed? The present study refrains from undertaking the issue, however.

For CV-r the metrification process can be captured as CV-r → CVC → CV[V]C → CV[V](C) → μ[μ] → (σ̇) = (σ̇[σ]) = (L̇.L) = minimal word.

Words in (32A) are referable as illustration.

32. A -r		B -er	
sā-[a]r	~	sā-er	'of tea'
bo-[o]r	~	bo-er	'of bride'
ḡi-[i]r	~	ḡi-er	'of rarefied butter'
gu-[u]r	~	gu-er	'of stool'

So far the proposed account of the NKB metrics has turned out to be successful. It is however challenged by words in (32B) where the genitive suffix surfaces as -er. Its morphemic significance is unquestioned, but what about its metrical properties?

Coda consonant of the incoming suffixal VC cannot contribute any mora but the suffixal vowel can. Hence there would be two moras – the first prerequisite for a trochee be it moraic or syllabic. Phonetic lengthening of the base monophthong needs not be resorted to any more. There emerges a phonetic glide in between the base and the suffixal vowels where plausible, and this fulfils the need for an onset in the second syllable. The derivational process can be tracked as (33).

33. CV-er → CV.VC → CV.[j]V(C) → (σ̇.σ) = (L̇.L)

The presence of the suffixal vowel thus not only ensures the perceptual salience of the genitive marker, but also vacuously guarantees the satisfactory fulfillment of the desire for a syllabic trochee in NKB. This is another piece of clinching evidence for the contention that -er is the legitimate candidate for representing the genitive suffix in the dialect.

5.2 Monosyllables with diphthongs

Diphthongs, as discussed earlier, are monomoraic in NKB. In unsuffixed form they undergo moraic lengthening on the surface so as to approximate the property of a bimoraic/dissyllabic trochee. Thus, a monosyllabic content word acquires the status of prosodic word: kia-r 'of what', kōa-r 'of cell of jackfruit', hōa-r 'of cucumber' etc., for example (cf. 8). Words of this formal property strongly disprefer -er. Our theory easily generates such metrics.

Under suffixation two possible developments accrue. Should -r be the genitive morpheme, its presence is not a threat since codas are non-moraic and hence are non-participants in metrification.

However, for the sake of a unified theoretical perspective let us advocate for and assume -er as the genitive in NKB.

Next in the line are a large number of words with a diphthong in the base. They optionally allow suffixation of either -r or -er. For example, consider the following (cf. 9 for more).

34. A -r		B -er	
hāi-r	~	hāi-er	'of husband'
ḡēi-r	~	ḡēi-er	'of husking device'
koi-r	~	koi-er	'of fish type'

lau-r	~	lau-er	'of gourd'
ḡeu-r	~	ḡeu-er	'of web'

The metrical account presented earlier for diphthongal monosyllables opting for -r as genitive holds for (34A). For words in (34B) a slightly different account, also proposed earlier, holds good. The base vowel, though a diphthong is monomoraic but no moraic lengthening on the surface is needed as the suffixal vowel offers the second mora for a moraic/syllabic trochee. The additional burden of phonetic lengthening of the base vowel is anti-economy and hence better eschewed. -er as the genitive facilitates in the process and ensures economy of computation.

Finally, our metrical account developed so far for diphthongs can be extended to analyze the metrical configuration of probably the only word with 'triphthong' given below.

35. A -r		B -er	
beai-r	~	beai-er	'of son's/daughter's father-in-law'

That triphthongs are also monomoraic is clear from beai-er: suffix vowel supplies the needed second mora for a trochee. Thus, word minimality is ensured. Converse, in beai-r the base triphthong being monomoraic gets notionally (if not actually) lengthened for mora augmentation. The result is a moraic trochee. But the native speakers' judgment for relative choice is indecisive!

5.2 Diphthongs that take only -er

The climax of the contention in favor of -er being the legitimate candidate for the underlying genitive marker in NKB is arrived at when one witnesses a sizable number of noun bases of CV type with diphthongs which categorically decline to admit -r as the signifier for the genitive. Some are cited below (cf. 10 for more).

36. kui-er	'of cooing'
ḡui-er	'of two'
hūi-er	'of a kind of vegetable'
ḡūi-er	'of a type of cake'
ḡai-er	'of piercing'
sai-er	'of fishing trap'
bāi-er	'of balance/credit'
zāi-er	'of fishing net'
ḡoi-er	'of curd'
ḡoi-er	'of female friend'

The account for the metrics of such words agrees with that offered for monosyllables with monophthongs in (33) repeated below.

37. CV-er → CV.VC → CV.[j]V(C) → (σ̇.σ) = (L̇.L)

Diphthongs being monomoraic the sequence needs an additional mora to graduate to a legitimate prosodic word with a moraic trochee (of virtual (L̇.L) type). Phonetic augmentation of the base mora need not be roped in. Computational economy is vindicated. Emergence of the

phonetic glide [j] is SR-dictated (a [+high] vowel is immediately followed by a [-high] one) and vacuously serves as the necessary onset of the suffixal VC.

This explanation reinforces the case in favor of -er as the genitive marker over that of -r. In addition, it upholds the analytical efficacy of the theory in making here.

5.3 Counterbalance?

A challenging voice of counterbalance sneaks in, however, with examples like the following.

38. kia-r/ki-er	‘of what’
ǵia-r	‘of cream color’
sia-r	‘of musk rat’
ǰiã-r	‘of vegetable type’
kua-r	‘of well’
đua-r	‘of refrain’
bua-r	‘of the fake’
mua-r	‘of musk/direction’
kõa-r	‘of cell of jackfruit’
k ^h oa-r	‘of dew’

The base vowel is a diphthong with downwards trajectory i.e., ending in a [-high] or low vowel. Minimum word status of the base is ensured via moraic lengthening resulting in a trochee. Non-moraic coda supplied by the suffix -r, as might be claimed it to be, is phonologically irrelevant.

But we contend, in conformity with our proposition, -er is the genitive suffix. In course of its incorporation into the prosodic word -ε by dint of its moraic independence occupies the place of the second mora thwarting the process of mora lengthening of the base. That the surface appearance of -ε is indistinguishable from the second half of the base diphthong is due to vowel harmony affecting the feature of height. The bottom line of the mystery therefore is: -ε is present in the UR though hidden under the guise of assimilation in SR. A crucial piece of evidence for this theoretical stand is available in the co-existence of kia-r ~ ki-er ‘of what’ in (38). If -er were not the UR suffix ki-r or kii-r would have sufficed. But the native speakers vehemently reject both and insist primarily on ki-er though accept kia-r too as a second choice.

The pair kia-r ~ ki-er thus turns out to be a double-edged weapon and entails a serious discussion offered below.

5.3.1 kia-r vs. ki-er: -r vs. -er

ki is semantically equivalent to /kia/ as base. In case of kia the suffix is -r and in respect of the former it is -er. This allomorphy based explanation undermines the need for phonetic lengthening of the unsuffixed word ki endangering its prosodic legitimacy: it will have no foot then.

kia Takes -r because the base is already bimoraic, could be claimed! But that diphthongs are not bimoraic in NKB is discussed and established above. Cross-linguistic support is also available in plenty. So, to become a licit prosodic word it must have a foot at the moraic level. This is possible only

through phonetic lengthening of the base mora: phonetic lengthening redeemskia.

Conversely, if only -r is added, bimoracity (whether phonological or phonetic) of the base prevails as suffixal C is a coda and hence non-moraic in NKB. On the contrary, if -er is the suffix, the suffixal vowel will have to be divested of or devoid of any moracity! It must be moraicly naked. Suffixal C is non-moraic already. So, the suffix is virtually non-existent phonologically. Same is the case for -r.

The converse interpretation can be: the base diphthong can be treated as monomoraic. And hence lengthening is a must. But mora, once lengthened cannot (/need not) be shortened because the cyclic mode debars application of any rule retrospectively to accommodate new entries (here the suffixal mora) if any. Hence suffixal vowel has to be is moraicless. Suffixal coda C is also moraicless. So, suffix is moraicless! Only a suffix with its abstract morphemic value is needed. It is immaterial if the suffix is -r or -er i.e., C or VC!

As for ki it is monomorphemic with a monophthong. To survive as a prosodic word, it must have a foot (here trochee) consisting of two moras. So phonetic lengthening is acceptable. A bimoraic base should have no problem in accepting a mora-less suffix. In that case -r is the ideal choice. But *kir (*ki[i]r) is strongly rejected by the NKB speakers! They emphatically insist on having kier. However, provided -er is moraicless, and base ki is bimoraic, -er can be admitted.

But such a stand sounds rather queer and unscientific, to say the least! It goes against native speakers’ intuition, above all.

It is more sensible to assume -er as the UR genitive suffix with a mora attached to the vowel only. Moraic vowel of the suffix stops the base mora from lengthening: that lengthening is redundant. The suffixed form with two moras graduates to a legitimate trochee en route to a licit prosodic word.

So, to argue for -r as the UR suffix for genitive leads to unnecessary digression full of ad hoc argumentations and maneuvering; and above all it is anti-economic. Projecting -er as the candidate fits into a principled unified account for the entire issue of genitive suffixation in NKB. -r is moraicless but loaded with semantic value of the genitive. So, it can exist as phonologically invisible. But it is always preceded underlyingly by -e with a definite moraic value. Its presence may be phonetic, or remain in disguise. In the second case, -r seeks to steal the show. But from the in-depth exploration above -er conquers in the final calculation!

6. Conclusion

In keeping with the crosslinguistic trend the NKB metrics displays some straightforward but remarkable features. In this dialect of Bangla (a) scansion takes place left-to-right; (b) only one foot –a syllabic trochee is constructed aligned with the left edge; (c) all syllables are light (L) i.e., long vowels or diphthongs are not distinctive in terms of weight value (both monomoraic) and codas are not moraic. Consequently, there is no iterative foot parsing. The latter is unbounded. To be more specific, the paper arrives at definitive conclusions that

- a. NKB has an undominated constraint for syllabic trochee of (Ḷ.L) type. If the base is monosyllabic phonetic lengthening is resorted to, to ensure moraic binarity for a trochee.
- b. Under suffixation of the genitive –er/-er the incoming mora of the suffixal vowel is put into service as mora-provider, and simultaneously moraic lengthening of the base vowel is discarded.
- c. –er/-er is the UR form of the genitive suffix, not –r. The latter is at the most an allomorph of the former.
- d. Word minimality condition is satisfied at every level through a disyllabic/bimoraic foot.
- e. As for morpho-phonemics, vowel lengthening at phonetic level is resorted to as and when needed. Neither vowel epenthesis nor deletion is attested. Vowel assimilation creeps in and ensures the clandestine presence of the suffixal vowel –ε/e.

7. References

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