

Syllable Structure in Spoken Sinhalese : A Prosodic Statement¹.

A syllable in spoken Sinhalese is always characterized by vocalic nucleus. At the phonological level, this nucleus is generalized and stated either as a phonematic element of structure, in which case it is indicated as V, or as a prosodic element of structure, in which case it is indicated as ə. V symbol presupposes a vowel commutation system² ; where no commutation system is set up syllabicity is stated as ə. Syllables whose nuclei are stated as V are invariably stressed.

Although both V and ə denote syllabicity, only V is stutable as a phonematic element of structure. The generalized phonematic structures of syllables in spoken Sinhalese are, then, CV, V and C³.

Prosodic elements of syllable structure

Syllabicity is a fundamental factor in distinguishing a syllabic unit from a non-syllabic unit. It was said that syllabicity is stated as V or ə, the former being a phonematic element and the latter a prosodic element of structure. If, for clarity of presentation, ə is to be indicated where necessary, the above three types may be expanded as CV, C³, V, ə.

Syllable prosodies are of two kinds :

- I. Unisyllabic prosodies, and
- II. Polysyllabic prosodies.

Unisyllabic prosodies are stated for single syllables only. Polysyllabic prosodies are stated for more than one syllable in a given stretch.⁴

1. For prosodic approach to phonological statement, see especially the papers quoted in En. 2 of my 'Gender in Colloquial Sinhalese,' *University of Ceylon Review*, XVI, 3 & 4, p. 120. See also Robins, R. H., *Aspects of Prosodic Analysis*, Proceedings of the University of Durham Philosophical Society, Vol. I, Series B. No. 1, 1957.

2. C and V are phonematic elements set up from a commutation point of view. Where commutation systems are not set up consonantal and vocalic articulations are not abstracted in terms of C and V but handled prosodically. More about this in the course of the paper.

3. Syllable division at the phonetic level : ka³no³va : kaa³vi : an : at : paan³da³re ; a³gə ; etc.

4. Stretch : a group of syllables at the phonological level.

Unisyllabic Prosodies

Unisyllabic prosodies are of three types :

1. *Prosodies of the syllable as a whole*
2. *Prosodies of syllable-initial*
3. *Prosodies of syllable-final.*

1. *Prosodies of the syllable as a whole*

A syllable is characterized by the following prosodies :

- (a) openness or closeness
- (b) short, medium or long quantity
- (c) h- or \underline{h} - prosody
- (d) n- or \underline{n} - prosody
- (e) y-, w- or o- prosody.

- (a) *Openness or closeness :*

A syllable may be open or closed. Open syllables are characterized by vocalic finality and closed syllables are characterized by consonantal finality. The final consonantal articulation in closed syllables is a neutral one, phonetically conditioned by its environment.⁵ It is therefore handled in terms of prosodies and not as a phonematic element of structure. As will be seen, these prosodies include gemination, labio-velarization, palatalization etc., which will be discussed in their appropriate places. All syllables in *k a n ə v a* are open ; all syllables in *k a n n a ŋ* are closed. There are, then, CV, V, C^o and ^o open syllables, as well as CV, V, C^o, and ^o closed syllables. By using Q as a tentative symbol, the closed syllables may be indicated as CV^Q, V^Q, C^oQ, and ^oQ, of which Q will be replaced by other symbols eventually.

- (b) *Short, medium or long quantity :*

A three-term system of quantity is postulated for the syllable as short, medium and long, whose exponents include durational differences. The time taken to articulate the consonantals and vocalics concerned in short syllables is shorter than that taken for medium syllables ; the time taken to articulate the consonantals and vocalics concerned in long syllables is longer than that taken for medium syllables.⁶

5. See pp. 112-113.

6. Vowel length is only an exponent of quantity and not quantity itself.

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Short syllables are always open ; long syllables are always closed. Short syllables are characterized by short vocalic articulations, and long syllables are characterized by long vocalic articulations. Thus, the two syllables in *k a n ə* are short, and the initial syllable in *p a a n d ə r ə* is long. Medium syllables may be open or closed : when open, they are characterized by vocalic length ; when closed, by vocalic shortness. Thus, the initial syllable of *p a a r ə* and the initial syllable of *k a n d ə* are medium in quantity. Short, medium and long syllables will be indicated by S, M and L respectively as follows :

$$\begin{array}{cccc}
 S_{CV} & S_V & S_{C^{\circ}} & S_{\circ} \\
 M_{CV} & M_V & M_{C^{\circ}} & M_{\circ} \quad ; \quad M_{CVQ} & M_{VQ} & M_{C^{\circ}Q} & M_{\circ Q} \\
 & & & & L_{CVQ} & L_{VQ} & L_{C^{\circ}Q} & L_{\circ Q}
 \end{array}$$

(c) *h-* or *ḥ-* prosody :

Exponents of *h-* prosody include breathiness in articulation. This breathiness is characteristic of the whole syllable concerned and not only of any part thereof. Thus, the first syllable in *k a n ə v a* is characterized by *h-* prosody. Another exponent of *h-* prosody is the voiceless consonantal articulation at the beginning of the syllable. *h-* syllables may be C initial or non-C initial, e. g., the initial syllables in *k a n ə v a* and *h a a n ə v a*. *h-*prosodic non-C initial syllables are characterized by glottal friction in the initial position.⁷ *ḥ-* prosody will be indicated by superscript *ḥ-*.

Exponents of *ḥ-* prosody include absence of breathiness and voicing characterizing all the articulations concerned. All syllables in *g a a n ə v a* are *ḥ-* prosodic. *ḥ-* prosody will be indicated by superscript *ḥ-*.

(d) *n-* or *ṇ-* prosody :

Exponents of *n-* and *ṇ-* prosodies include nasality and absence of nasality respectively. Nasality and absence of nasality are characteristic of all articulations in the syllables for which *n-* and *ṇ-* are stated ; they are not characteristic of certain consonantals or certain vocalics only. Thus, in *m a d i*, syllable 1 is characterized by *n-* prosody, nasality being observable

7. *h-* is not handled as a C element of structure. See pp. 115-116.

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throughout, and syllable 2 is characterized by \underline{n} -prosody, absence of nasality being observable throughout the syllable. In formulae these prosodies will be indicated by superscript $\overset{n-}$ and $\overset{\underline{n-}}$.

n -prosody and h -prosody are mutually exclusive; n -prosodic syllables are always \underline{h} -. \underline{n} -syllables may be h - or \underline{h} -.

(c) y -, w - or o -prosody :

One exponent of y -prosody is frontness in articulation; one exponent of w -prosody is backness in articulation. y - and w -syllables are also characterized by lip-spreading and lip-rounding respectively. Where a syllable is characterized by central quality and absence of lip-spreading or lip-rounding, it is stated as o -prosodic. Thus, the initial syllables of *kirəṇṇəva*, *burəṇṇəva*, and *baləṇṇəva* are y -, w - and o -prosodic respectively. Frontness, backness etc. and lip shape are characteristic of the whole syllable and not of any part thereof only. These prosodies will be indicated by superscript y -, w - and o -.

2. Prosodies of syllable-initial

In stating the prosodies of syllable-initial it is necessary to recognize two kinds of syllable as C initial and non-C initial.

C initial syllables are characterized by one of the following prosodies :

- (a) yotization (indicated by linear y)
 - (b) labio-velarization (indicated by linear w)
 - (c) Rhotacization (indicated by linear r)
 - (d) lateralization (indicated by linear l)
 - (e) absence of (a), (b), (c), (d) or (e) (indicated by leaving them unmarked).
- (a) One exponent of yotization is palatal semi-vocalic articulation at the prevocalic position in the syllable. Syllable 1 of *nyāyā* is yotized, i.e., yCV . Syllable 1 of *naāyā* is non-yotized.
 - (b) One exponent of labio-velarization is labio-dental or bilabial semi-vocalic articulation at the prevocalic position in the syllable. Syllable 1 of *jvərə* is labio-velarized, i.e., wCV . Syllable 1 of *jarāa* is non-labio-velarized.
 - (c) One exponent of rhotacization is alveolar flap or rolled articulation at the prevocalic position in the syllable. Syllable 1 of *krāme* is rhotacized, i.e., rCV . Syllable 1 of *kərənṇəva* is non-rhotacized.

- (d) One exponent of lateralization is alveolar lateral articulation at the prevocalic position in the syllable. Syllable 1 of *klaante* is lateralized, i.e., lCV.
- (e) As illustrated in the contrasting examples quoted in (a), (b), (c) and (d), the exponents of the prosody of absence of yotization, labio-velarization, rhotacization or lateralization include the absence of the phonetic characteristics mentioned in (a), (b), (c) and (d).

The articulations mentioned in the above exponential statement are only some of the exponents characterizing these syllables. One reason for focussing attention on these exponents is that they are predominantly observable, but at the same time do not affect the duration of the syllable. Thus, the pairs *klaante*, and *kaanti*, *kriyaa* and *kiyaa*, *svaami* and *saami*, are of equal duration. Recognized as exponents of prosodic elements of structure, these articulations are not handled in terms of phonematic elements.

Non-C initial syllables are characterized by one of the following prosodies :

- (a) yotization (indicated by linear y)
- (b) labio-velarization (indicated by linear w)
- (c) absence of (a) or (b)—indicated by leaving them unmarked.

Exponents of these prosodies are as stated for C-initial syllables. Syllable 1 of *yanava*⁸ is yotized, i.e., yV. Syllable 1 of *venava*⁸ is labio-velarized, i.e., wV. Syllable 1 of *enava* is characterized by non-yotization and non-labio-velarization.

3. Prosodies of syllable-final.

As certain prosodies which are partially syllable-final will be discussed under polysyllabic prosodies,⁹ only the others are discussed at this point. These prosodies are

- (a) yotization (indicated by linear y)
- (b) labio-velarization (indicated by linear w)
- (c) absence of (a) or (b)—indicated by leaving it unmarked.

8. y and v are not stated in terms of phonematic elements on account of certain peculiarities which distinguish them from other consonantal articulations. To give one instance, there are no 'yi' or 'vu' syllables in Sinhalese. In other words, their function is restricted.

9. e.g., g- prosody, p. 112.

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One exponent of yotization is the vocalic change to high front quality as in *k a i*, *b a l a i*. One exponent of labio-velarization is the vocalic change to high back quality as in *ɣ a m a u*, *o u*. The final syllables in *e p a*, *m a m ə*, *m a d i*, *a l u*, are characterized by non-yotization and non-labio-velarization.

II

Polysyllabic Prosodies

The following prosodies are stated for more than one syllable in a given stretch :

- (a) nasalization or absence of nasalization
- (b) retroflexion or absence of retroflexion
- (c) palatalization or absence of palatalization
- (d) gemination or absence of gemination.

(a) *Nasalization or absence of nasalization*

When a group of syllables is characterized by the prosody of nasalization, nasal articulation is observable in two or more consecutive syllables. Absence of nasalization corresponds to absence of nasality in articulation. Nasalization will be indicated by \sim , and absence of nasalization by leaving it unmarked. Nasalization is of two kinds :

- (i) nasalization involving plosives
- (ii) nasalization not involving plosives.

Where nasalization involves a plosive, the vocalic articulations in the syllable of which the plosive is an exponent, and the vowel in the preceding syllable are nasalized, e.g., $a \sim g ə$. In the articulation of such words as $a \sim g ə$, the vocalic articulation in the syllable preceding the plosive is more nasalized than the vocalic articulation in the syllable of which the plosive is an exponent.

Where nasalization does not involve a plosive, nasality extends over a series of syllables as a unified whole, with no cessation as at the plosive articulation in the previous instance of $a \sim g ə$. These syllables invariably involve a nasal consonantal articulation, e.g., the last two syllables in *k ə p u n a a v e*, *k a p ə n ə v a*, etc.

As opposed to $a^{\sim}g\partial$, $ag\partial$ is characterized by the absence of nasalization; as opposed to $k\partial p u n a a v e$ and $k\partial p \partial n \partial v a$, $k\partial p u v a a v e$ and $k\partial p \partial p u v a$ are characterized by the absence of nasalization.

(b) *Retroflexion or absence of retroflexion*

One exponent of retroflexion is the curling of the tip of the tongue in the articulation of at least two consecutive syllables. To illustrate i —in the pronunciation of $m a d \partial$, the tip of the tongue curls up together with the release of m , and remains curled till the end of the word. In the pronunciation of $m a d \partial$, however, (for which absence of retroflexion is stated as a prosody), the tip of the tongue does not take such a shape. Retroflexion is a prosodic term—it does not indicate areas of tongue contact. Retroflexion will be indicated by superscript R , and absence of retroflexion by leaving it unmarked.

(c) *Palatalization or absence of palatalization*

One exponent of palatalization is front articulation in at least two consecutive syllables. All vocalic and consonantal articulations are further front and palatal in quality than those in non-palatalized syllables. Thus, in $a a c c i$ both syllables are characterized by palatalization, as opposed to $a k k a$ which is characterized by absence of palatalization. Palatalization will be indicated by superscript J , and absence of palatalization by leaving it unmarked.

(d) *Gemination or absence of gemination*

Gemination is stated for two syllables at a time. Exponents of gemination include long consonantal articulation and vocalic tenseness. Contrast $a t t \partial$ for which gemination is stated, with $a t \partial$ which is characterized by absence of gemination. Gemination will be indicated by superscript G , and absence of gemination by leaving it unmarked.

Q as a prosodic element of structure in sentence final syllables

It is necessary to say a few words about the final consonantal articulations in word-final closed syllables. These articulations are conditioned by environment. One example may be given to illustrate this point: the word $p o t a k$ has a final voiceless velar stop when pronounced by itself, but

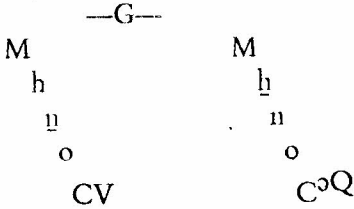
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when it is non-final in the sentence this final articulation is conditioned as follows :

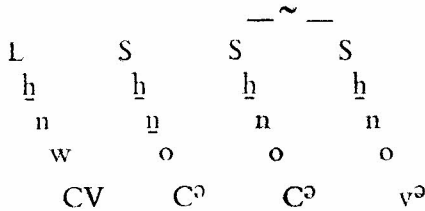
- potab baləṇəva*
- potag gatta*
- potak kiyaṇəṇəva*
- potal liyaṇəva.*

When words of this sort are non-final in the sentence the phonetic characteristic in question is handled as an exponent of G- prosody. But when such words are final in the sentence the syllables concerned are generalized as CV^Q, C^oQ etc.

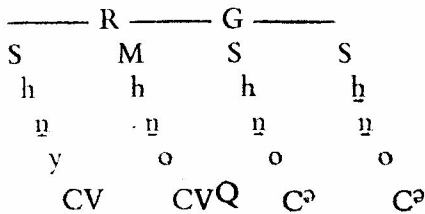
Having stated the prosodic elements of structure in this way, it will be useful to illustrate them with a few examples. The prosodic structure of *k a n n a η* is as follows :



The prosodic structure of *m o o r ə n ə v a* is as follows :



The prosodic structure of *p i ṭ a s t ə r ə* is as follows :



Phonematic elements of syllable structure

Duration, aspiration, nasality, lip-shape, r-colouring etc. being stated as exponents of prosodic elements, the number of phonematic units required for Sinhalese is reduced to a maximum of eleven, of which three are vowels and eight are consonants.

Vowel units :

Three vowel units are postulated for spoken Sinhalese as i , ϵ , and α , their implications being three grades of openness.

- i : close unit
- ϵ : mid unit
- α : open unit

These commute in syllables for which V is stated as a generalized element of phonematic structure. Syllables in which they commute may be characterized by any of the prosodies discussed in this paper.

Consonant units :

A maximum of three plosive units, two nasal units, two liquid units and one sibilant unit commute at C in any given syllable.

Plosive units :

- β : labial unit
- ϑ : apical unit
- γ : dorsal unit

Of these only ϑ functions in R- prosodic syllable stretches.

- R- prosodic : $CV\vartheta^{\partial}$: *kaʔa*
- Non-R- „ : $CV\vartheta^{\partial}$: *poʔa*

Only γ functions in J- prosodic stretches.

- J- prosodic : $CV\gamma^{\partial}$: *paʔa*
- Non-J- „ : $CV\gamma^{\partial}$: *deka*

Nasal units :

- μ : labial unit
- ν : apical unit

These do not function in syllables characterized by \underline{h} - prosody.

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Liquid units :

λ : lateral unit

ϱ : flap unit

Of these λ does not function in h- prosodic syllables. At the word-initial position ϱ does not function in h- syllables ; at the word-medial position ϱ does not function in h-syllables.

Sibilant unit :

σ , the apical sibilant unit, does not function in h- or n- syllables.

Where σ is an element of structure in the generalized statement, no vowel commutation is postulated. In the detailed formulaic statements σ will be used constantly in these places. As this setting up of σ is linked with grammar I do not propose to deal with the corresponding phonetic implications at this juncture.

A word must also be said about the glottal fricative which is treated prosodically. This articulation differs from the consonantals generalized as C in the following manner :

1. Where in my idiolect I distinguish two syllables, the second of which is -hə- as, for instance, *ahulənəva*, some speakers, even within the same dialect area, would have aspiration characterizing both syllables and not the second only as, for instance, *haulənəva*. Such other instances are as follows :

<i>ahinəva</i>	:	<i>hainəva</i>
<i>əhuva</i>	:	<i>həuva</i>
<i>ahanəva</i>	:	<i>haanəva</i>
<i>uhulənəva</i>	:	<i>huulənəva</i>

It is convenient to make an economic and consistent statement of these differences by treating aspiration in terms of a prosodic element of structure rather than by setting up two different phonematic structures to handle them. Being treated prosodically, then, aspiration is stated as an exponent of h- prosody, observed in the second syllable in the first set of examples, and in both syllables 1 and 2 in the second set.

2. [h] also has a more limited distribution than the consonants generalized in terms of C. For instance, where the vocalic articulation preceding [h] is open [a], the vocalic articulation following it is either close [i], [u], or open [a] only. e.g.,

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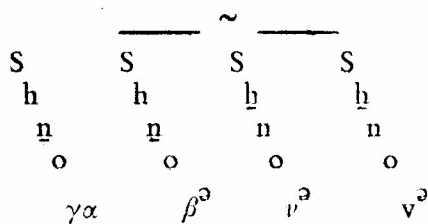
kahinava alulānava ahanava

Just as C- initial syllables are either h- or \underline{h} - prosodic, V- or $\overset{\circ}{}$ - syllables, too, are, then, h- or \underline{h} - prosodic in structure.

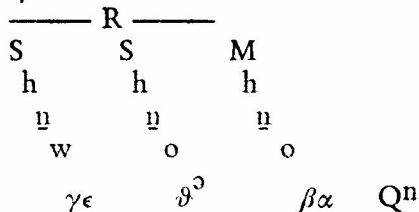
$\overset{h}{V}$ - *hadānava*
 $\underline{h}V$ - *adinava*

In conclusion, the above statement on the elements of structure of the syllable may now be illustrated with two examples.

1. *kapānava* :



2. *koṭṭapaṇ* :



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