LINGUISTIC COMPARISON
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A COMPARISON OF ARAKANESE AND BURMESE
BASED ON PHONOLOGICAL FORMULAE

By R. K. SPRIGG

INTRODUCTORY

In ‘Prosodic Analysis, and Phonological Formulae, in Tibeto-Burman Linguistic Comparison’ (pp. 79–108) I stated my belief that lexical-item phonological formulae, arrived at by applying to each language or dialect the techniques of prosodic analysis, would provide the most satisfactory forms for the linguistic comparison of Tibeto-Burman languages (p. 79); in this paper I attempt to prove my contention by using Arakanese and Burmese lexical-item phonological formulae as a basis for constructing formulae for Arakanese-Burmese (A.-B.), a first step towards formulae for what Shafer has termed the Southern Unit of the Burmese Branch, comprising Burmese, Arakanese, Tavoyan, Taungyo, Intha, Danu, and Yaw, of which only Burmese is now a written language.¹

Since Verbs are less susceptible to borrowing than Nouns, I have restricted myself to Arakanese and Burmese Verbs, with a further restriction to monosyllabic Verbs.² My material comprises 1,002 Burmese, and 667 Arakanese, phonologically distinct Verbs; the former are a complete inventory of such Verbs for one speaker.³ The corpus of Arakanese examples is much smaller than the Burmese because, having elicited an example of a Verb with an aspirate initial, I did not always inquire for an otherwise phonetically identical Verb with an unaspirated initial, and vice versa.

For a very few of the Arakanese Verbs no regular correspondence can be shown with a Spoken-Burmese Verb, e.g. ṭett throw a shadow, ṭett shiver, ṭet string [a necklace].⁴

MAJOR PROSODIC SYSTEMS

There are four major prosodic systems in terms of which Arakanese and Burmese monosyllabic Verbs can be classified: Tone, Quality, Voice Quality, Labialization.

In both Arakanese (A.) and Burmese (B.) Verb Words (comprising a Verb Syllable only) and Verb-and-Particle Words (comprising a Verb Syllable and one or more Particle Syllables) can be classified in accordance with differences

² When used as formally established phonological or grammatical terms, Verb, Word, Syllable, etc., are distinguished by a capital letter.
³ My informant for the Burmese material was U Tin Maung, an Upper Burman, from Sagaing, and for the Arakanese Saw Hla Pru, an aircraft-engineering student, from Akyab.
⁴ Verbs are cited in the phonetic form appropriate to junction with the Particle Syllable re/te (A.) or te/də (B., sai).
in pitch behaviour as Tone-1 or Tone-2 Words, e.g. (r symbolizes a fricative, i.e. the s of the I.P.A.):

Tone 1 (\'-, etc.) : A. póre thaîre lootë ; B. póde thaünde loótë ;
Tone 2 (\'-, etc.) : A. pore thaîre ; B. pôde thaünde

(pui'saî sends ; thuînsaî is damp ; lupsaî works ; puisaî exceeds ; thuînsaî sits).\(^1\)

Those monosyllabic Verbs which can be exemplified only in Tone-1 Words are therefore classified as Tone-Word-1, or Tone-1, Verbs, while those which are exemplified only in Tone-2 Words are, correspondingly, classified as Tone-2. On the basis of identity, or close similarity, of translation-meaning of particular Arakanese and Burmese lexical items, supported by regular correspondences between the components of their phonological formulae, the Tone components 1 and 2 of Burmese can be shown to correspond to 1 and 2 respectively of Arakanese, whence *1 and *2 can be established for A.-B., with 1 as the reflex of *1 in either language, and 2 of *2.

The Quality systems of both Arakanese and Burmese are three-term : z, m, k.\(^2\) The exponents of these three terms are drawn from features of both the Verb Syllable and the following (Particle) Syllable, e.g. (f = Fast Tempo ; s = Slow):

\[
\begin{array}{ccc}
|   & (i) & (ii) | \\
|---|------|------|
| z : | A. prôre & prû:re: | B. \{pjô:dë & pjû:de: \} \\
| m : | A. sâöre & khôöre: | B. \{sâ:o:ndë & khoo:nde: \} \\
| k : | A. kraôtte & tshootë | B. \{tsha:otte & tshootë \} \\
\end{array}
\]

(prosaî speaks ; phrûsaî is white ; con'saî waits ; khunsaî jumps ; khroksaî fears ; khyupsaî sews).

The exponents of z, m, and k are stated in full in my other paper (pp. 87-8); the above examples are enough to show that they comprise syntagmatically related Syllable-final features of the Verb Syllable (vowel quality, nasality versus non-nasality, presence versus absence of final stop) and Syllable-initial features of the following Syllable (plosion versus flap or friction, nasality v. non-nasality, voice v. voicelessness).

Verbs are classified as z-Piece (or z), m-Piece (or m), or k-Piece (or k) according as they are exemplified in the z, the m, or the k, disyllabic Piece (‘Prosodic Analysis’, p. 89).

---

\(^1\) For Words in which the Verb is disyllabic, see ‘Junction in Spoken Burmese’, *Studies in Linguistic Analysis*, Oxford, 1957.

There is a regular correspondence of each of the terms z, m, and k of the Burmese system to z, m, and k respectively of the Arakanese, whence *z, *m, *k can be established for A.-B., with reflexes z, m, and k respectively in either language.

A z or an m Verb can be either Tone-1 or Tone-2 in either language, but a k Verb must also be Tone-1. In phonological formulae the component k therefore implies the component 1; and an economy can be achieved in the Arakanese and Burmese, and in the A.-B., formulae, through a convention whereby k does duty for the component 1 (in A.-B., *1).

The third major prosodic system is two-term: g (from glottal-trill), ģ. A g Syllable is invariably characterized by glottal-trill (or 'creaky') voice quality, a ģ almost invariably by clear voice quality,\(^1\) e.g.:

\[
\begin{align*}
g & : A \ z \ \check{\acute{p}}\grave{o} ; \ m \ \check{\acute{p}}\acute{r}\check{\grave{a}}\check{o} ; \\
\check{g} & : A \ z \ \check{\acute{p}}\acute{o} ; \ m \ \check{\acute{p}}\acute{r}\check{\acute{a}}\check{o} ; \ k \ \check{\acute{p}}\acute{a}\check{o}t ; \\
& B \ z \ \check{\acute{p}}\grave{o} ; \ m \ \check{\acute{p}}\acute{r}\check{\grave{a}}\check{o}n ; \ k \ \check{\acute{p}}\acute{a}\check{o}t
\end{align*}
\]

(po' is light; phron' is straight. po is plentiful; pro:n moves; pok is pierced).

There is a regular correspondence of g and ģ in Burmese with g and ģ respectively in Arakanese, whence *g and *ģ can be established for A.-B., with reflexes g and ģ respectively in either language.\(^2\)

All Tone-2-Word Verbs are also ģ, and so also are all Tone-1-Word k Verbs (1k); since, therefore, the components 2 and k imply ģ, the component ģ can be omitted from any formula containing either of them. Indeed, it is possible to achieve further economies in symbolization: since every Tone-1 z or m Verb (1z, 1m) must also be further classified as either g or ģ (1zg, 1 zg; 1mg, 1mg), a similar convention to that whereby the component k does duty for the Tone component 1 in both Arakanese and Burmese, and in A.-B., formulae, can also be adopted for g and ģ, and the component 1 omitted from any formula containing either of them.

Thus far, there has been a term-for-term correspondence between the terms of Arakanese and Burmese systems (Tone, Quality, Voice Quality); in the case of the fourth major prosodic system to be considered, the Labialization, this identity in number of terms as between the two languages breaks down. The Burmese Labialization system comprises the five terms s (from spread), c (from centralized), \(\partial\), f (from fronting), and b (from back); the Arakanese comprises the four terms s, \(\partial\), f, and b.\(^3\) Since all Burmese b monosyllabic Verbs regularly correspond to Arakanese b monosyllabic Verbs, and vice versa, whence A.-B. *b, b-Syllable correspondences are considered first.

---

\(^1\) 'Prosodic Analysis', p. 97, above.
\(^2\) The only non-correspondence to be noted was of Arakanese ģ in 'oō, is overcast, with Burmese g, 'oon um'.
\(^3\) 'Prosodic Analysis', p. 96.
b Syllable

Burmese b Syllables can be distinguished from Burmese s, f, c, and ə Syllables, and Arakanese b Syllables from Arakanese s, f, and ə Syllables, by the following, among other features: (i), complete or partial rounding of vowel (ʊ o o ō; ə), and (ii), rounding of initial consonant if non-palatal (except Syllables in əo), e.g. A., khoō jumps, əo is reduced; B., khaat folds khot, ōon bows num', except for one sub-category of ə Syllable, in either language, that is characterized, like the b Syllable, by rounding of vowel, e.g. B., wot wears wat, then harrow thran; A., wə̆ overflow, kwot is spotted; from this sub-category of ə Syllable the b Syllable is distinguished in either language by potential initial glottal plosion (ʼ), e.g. A., ʼā lays an egg, ʼaō passes (an examination); B., ʼoon swarms round un, ʼaot is musty ok (*ə- is not a possible Burmese, or *ə- a possible Arakanese, sequence).

Burmese

Burmese b Syllables can be further classified in terms of three prosodic systems: Juncture, Aspiration, Palatalization.

The fourteen-term Juncture system (p, m, t, n, c, l, w, k, ŋ, j, p, y, s, v) and the two-term Aspiration system (h, ŋ) are set up in order to be able to associate initial localization and posture features of the Verb Syllable (labiality and plosion, labiality and nasality, dentality and friction, etc.) with the corresponding final features of Syllables preceding them in Intraverbal Junction, i.e. within the same Word, e.g. -k'g- and -ng- in the two k-Juncture Piece examples sokkois (təaok'gaō) soklim'mañ he may well drink, koinskois (kaonggaō) well, and -t'th- in the t-Juncture Piece lakthok (le(t')thaor) charā assistant.¹

The two-term Aspiration system (h, ŋ) is also set up in order to associate voice or voicelessness as a feature of the vowel of the Verb Syllable (V; V, or h), or, in the case of non-occlusive-initial Syllables, as a feature of the initial consonant (m versus m, l v. l, etc.), with the corresponding features of a preceding Syllable in Intraverbal Junction, e.g. h, -V(t')th-; ŋ, -k'g-; as in le(t')thaor and təaok'gaō respectively in the immediately preceding paragraph.²

Each b Verb is then classified as e.g. p, m, or s, or as h or ŋ, according to which type of Juncture Piece or Aspiration Piece it can be exemplified in (as second Syllable of the Piece) except that no b Syllables can be classified as w (p. 113).³

The two-term Palatalization system (y, ŋ) needs to be stated in order to account for syntagmatically related features of the initial consonant or consonants of b Syllables and the vowel: in y Syllables initial palatality (i n pi, etc.) is associated with Syllable-initial lip-spreading, with relative frontness of vowel (ʊ o ao, etc.),

¹ For Intraverbal and Interverbal Junction see 'Prosodic Analysis', pp. 90–1, and for the Juncture system, ibid., pp. 91–5.
² ibid., pp. 91 ff.
³ ibid., p. 96.
and with relative lack of rounding (əə o o o, etc.); in ſ Syllables initial non-palatality (⁺ ph θ, etc.) is associated with initial lip-rounding (except in ao Syllables) and with relative backness of vowel (u o ao, etc.) :

\[
\begin{align*}
\text{y} : & \quad \text{pi pij mi pij te(h) j s n ſ} \\
\text{Ỹ} : & \quad \text{p(h) m m t(h) n ſ s(h) l l k(h) η θ' h} \\
\text{y} : & \quad \text{piu pru does} ; \quad \text{jaoe rok arrives} ; \quad \text{mja myo floats} ; \quad \text{mə mo is tired.}^1 \\
\text{Ỹ} : & \quad \text{pu pũ is hot} ; \quad \text{aon on matures} ; \quad \text{mo mo is tired.}^1
\end{align*}
\]

Since, however, the j, ſ, and y Juncture components correlate with the Palatalization component y, while the Juncture components t, n, c, l, k, ſ, and v correlate with the Palatalization component ſ, either ſ or y is invariably implied by one or other of these more specific components, and can without ambiguity be omitted from a phonological formula containing any of them (but not from formulae containing p or m).

The Syllable-initial features of b Verbs as classified in terms of the Juncture, Palatalization, and Aspiration systems, are as follows, when Word-initial :

\[
\begin{align*}
\text{Juncture :} & \quad p \quad m \quad t \quad n \quad c \quad l \quad k \quad ſ \\
\text{Palatalization :} & \quad ſ y \quad ſ y \quad ſ y \quad ſ y \quad ſ y \quad ſ y \quad ſ y \quad ſ y \\
\text{Aspiration :} & \quad h h h h h h h h h h h h h h h h h h h h h h h h h h h h h
\end{align*}
\]

\[
\begin{align*}
\text{Juncture :} & \quad j \quad ſ \quad m \quad ſ \quad ſ \quad m \quad ſ \quad ſ \quad ſ \quad ſ \quad ſ \quad ſ \quad ſ \quad ſ \quad ſ \\
\text{Palatalization :} & \quad ſ y \quad ſ y \quad ſ y \quad ſ y \quad ſ y \\
\text{Aspiration :} & \quad h h h h h h h h
\end{align*}
\]

(from this figure it will be seen that the Aspiration system does not apply to the (disyllabic) ſ Piece).

There being no further prosodic systems in terms of which the b type of Syllable can be classified, it remains only to state the b-Syllable phonematic systems, of which there are two. Both are V systems (there are no C systems in Burmese). A three-term V system (U, O, Ω) is stated for those b Syllables which are also classifiable as z by reference to the Quality system (p. 110), zb Syllables, and a two-term (U, O) for those which are also classified as m or as k (mb and mk Syllables). The phonetic exponents of these terms are :

\[
\begin{align*}
\text{z} & \quad \text{m, k} \\
\text{U : closeness} & \quad u ; \quad \text{U : half-closeness} \, œ ; \\
\text{O : half-closeness} & \quad o ; \quad \text{O : openness} \, œ ; \\
\text{Ω : half-openness} & \quad o^2
\end{align*}
\]

^1 ibid., pp. 97-8.  
^2 ibid., p. 98.
Examples of Burmese b-Syllable lexical-item phonological formulae are given on p. 116 below. The component b can be omitted from formulae containing U, O, or Ω: they are restricted to, and therefore imply, the b Syllable. On like grounds z (of the Quality system) can be omitted from formulae containing the z-Verb phonematic component Ω.

Arakanese

Arakanese b Syllables can also be classified in terms of four further systems, Juncture, Rhotacization, Aspiration, and Palatalization, two of which, Aspiration (h, ñ) and Palatalization (y, ñ), are identical in number of terms with the Burmese. The Arakanese Juncture system, on the other hand, comprises not fourteen but fifteen terms, to which the same names have been given as for the Burmese (p, m, t, etc.) but with the addition of r¹; and the Arakanese b Syllables can be classified, as p, m, n, etc., by reference to this system, but not as w (there are no such sequences as *wu, *wañ, *woot.

The Arakanese Rhotacization system comprises two terms (r, ñ). This system serves to associate alveolar friction with labiality and velarity in initial-consonant sequences (pr nr nr, etc.), but not with alveolarity, dentality, or palatality, for example (e.g. t n s).²

The exponents of these terms are, then:

r : labiality/velarity and alveolar friction pr pf nr nr kr kr nr
ñ : labiality, velarity, etc. and no alveolar frication, e.g. p(j) m(j) kh θ

e.g.

r : pru is white; krąot terrifies; ńro resents;
ñ : pu is hot; mjo floats; raot arrives.

As in Burmese, h and ñ both correlate with every Juncture component except s; the Juncture components j, n, and y, correlate with the Palatalization component y, while t, n, c, l, r, k, ñ, s, and v correlate with ñ, and so does the Rhotacization component r (as in Burmese, y and ñ therefore need to be explicitly formulated only in bp and bm Syllables); only the Juncture components p, m, k, and ñ correlate with the Rhotacization component r; but all fourteen Juncture components correlate with ñ (and the ten components t, n, c, l, r, j, ñ, y, s, and v exclusively with ñ).

¹ The time available for the Arakanese research was short, and the number of Arakanese examples that require the setting up of the Juncture system, e.g. the p Piece pambè(ţe), is tired, with labiality and plosion as its phonetic exponents (-mb-), and the t Piece tatte, climbs, with alveolarity and occlusion followed by plosion (-tt-), is consequently small; but no examples have been noted that are inconsistent with the stating of this system.

² r has been used to symbolize an Arakanese alveolar fricative (I.P.A. Ɂ) as being more convenient typographically.
The Syllable-initial phonetic features of each type of Arakanese b Verb classified prosodically in terms of the Juncture, Palatalization, Rhotacization, and Aspiration systems are, in Interverbal Junction (i.e. when Word-initial), as follows:

<table>
<thead>
<tr>
<th>Junc.</th>
<th>p</th>
<th>m</th>
<th>t</th>
<th>n</th>
<th>c</th>
<th>y</th>
<th>s</th>
</tr>
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<tbody>
<tr>
<td>Pal./Rhot.</td>
<td>y̍̊</td>
<td>y̍̊</td>
<td>r̄̏</td>
<td>y̍̊</td>
<td>r̄̏</td>
<td>y̍̊</td>
<td>r̄̏</td>
</tr>
<tr>
<td>Asp.</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junc.</th>
<th>l</th>
<th>r</th>
<th>k</th>
<th>j</th>
<th>n</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pal./Rhot.</td>
<td>(y̍̊)</td>
<td>(y̍̊)</td>
<td>r̄̏</td>
<td>y̍̊</td>
<td>r̄̏</td>
<td>y̍̊</td>
</tr>
<tr>
<td>Asp.</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
</tbody>
</table>

The phonematic systems statable for Arakanese b Verbs, and the corresponding components, are the same in number of terms and in exponency as for Burmese (p. 113): z, U u, O o, Ω o; m/k, U oo, O ao.

A.-B.: *b CORRESPONDENCES

Regular correspondences can be established between the Burmese and the Arakanese Aspiration components h and h, whence *h and *h, with h and h as their respective reflexes in either language.

Regular correspondences can also be established between the Burmese and the Arakanese Juncture components, in combination with the Palatalization and Rhotacization components, as follows:

A. p̍̊ | py̍̊ | pr̄̏ | m̍̊ | my̍̊ | mr̄̏ | t̍̊ | n̍̊ | c̍̊ |
B. p̍̊ | p̍̊ | p̍̊ | m̍̊ | m̍̊ | m̍̊ | t̍̊ | n̍̊ | c̍̊ |
A.-B. *p̍̊ | *p̍̊ | *p̍̊ | *m̍̊ | *m̍̊ | *m̍̊ | *t̍̊ | *n̍̊ | *c̍̊ |

A. 1(y̍̊) | r̄̏ | k̍̊ | k̍̊ | η̍̊ | η̍̊ | j̍̊ | p̍̊ |
B. 1(y̍̊) | y̍̊ | k̍̊ | j̍̊ | η̍̊ | p̍̊ | j̍̊ | p̍̊ |
A.-B. *1(y̍̊) | *r̍̊ | *k̍̊ | *k̍̊ | *η̍̊ | *η̍̊ | *j̍̊ | *p̍̊ |

A. y̍̊ | s̍̊ | v̍̊ |
B. y̍̊ | s̍̊ | v̍̊ |
A.-B. *y̍̊ | *s̍̊ | *v̍̊ |

From the above correspondences it will be seen that (i), the Arakanese Palatalization component y̍̊ regularly corresponds to the Burmese Palatalization component y, whence *y; (ii), Burmese y̍̊ regularly corresponds to Arakanese y̍̊, whence *y̍̊; and (iii), Arakanese r̄̏ corresponds to Burmese y̍̊, whence *r.
The Arakanese phonemic components U, O, and Ω correspond each to its Burmese homograph, whence *U, *O, and *Ω.

The following are examples of b-Syllable correspondences (implied, and therefore omissible, components are enclosed in parentheses):

\[
\begin{array}{ccc}
\text{A.-B.} & \text{A.} & \text{B.} \\
(\text{b1})\text{gp}_\text{f}\text{h}_\text{O}z & (\text{b1})\text{gp}_\text{f}\text{h}_\text{O}z & \text{pō} & (\text{b1})\text{gp}_\text{f}\text{h}_\text{O}z & \text{pō} & \text{pui}' \\
(\text{b1})\text{gmy}_\text{h}_\text{Ω}(\text{z}) & (\text{b1})\text{gmy}_\text{h}_\text{Ω}(\text{z}) & \text{mjo} & (\text{b1})\text{gmy}_\text{h}_\text{Ω}(\text{z}) & \text{mjo} & \text{myo} \\
(\text{b1})\text{gth}_\text{U}z & (\text{b1})\text{gth}_\text{U}z & \text{thu} & (\text{b1})\text{gth}_\text{U}z & \text{thu} & \text{thū} \\
(\text{b1})\text{gnh}_\text{O}z & (\text{b1})\text{gnh}_\text{O}z & \text{no} & (\text{b1})\text{gnh}_\text{O}z & \text{no} & \text{nu} \\
(\text{bgy})\text{cch}_\text{O}m & (\text{bgy})\text{cch}_\text{O}m & _\text{shaō} & (\text{bgy})\text{cch}_\text{O}m & _\text{shaō} & \text{choi} \\
(\text{bgy})\text{cch}_\text{O}m & (\text{bgy})\text{cch}_\text{O}m & _\text{lu} & (\text{bgy})\text{cch}_\text{O}m & _\text{lu} & \text{lu} \\
(\text{b1})\text{grh}_\text{U}m & (\text{b1})\text{grh}_\text{U}m & \text{pōō} & (\text{b1})\text{grh}_\text{U}m & \text{pōō} & \text{rhu} \\
(\text{b1})\text{gkr}_\text{hO}k & (\text{b1})\text{gkr}_\text{hO}k & _\text{kraot} & (\text{b1})\text{gkr}_\text{hO}k & _\text{kraot} & \text{rhm} \\
(\text{b1})\text{gnf}_\text{hO}z & (\text{b1})\text{gnf}_\text{hO}z & \text{no} & (\text{b1})\text{gnf}_\text{hO}z & \text{no} & \text{nu} \\
(\text{b1})\text{ghj}_\text{Uk} & (\text{b1})\text{ghj}_\text{Uk} & _\text{tshoọt} & (\text{b1})\text{ghj}_\text{Uk} & _\text{tshoọt} & \text{khr} \\
(\text{b1})\text{gph}_\text{O}m & (\text{b1})\text{gph}_\text{O}m & \text{pnaọ} & (\text{b1})\text{gph}_\text{O}m & \text{pnaọ} & \text{nọ} \\
(\text{b1})\text{gyh}_\text{O}(\text{z}) & (\text{b1})\text{gyh}_\text{O}(\text{z}) & \text{pō} & (\text{b1})\text{gyh}_\text{O}(\text{z}) & \text{pō} & \text{lho} \\
(\text{b1})\text{gph}_\text{O}m & (\text{b1})\text{gph}_\text{O}m & _\text{thọō} & (\text{b1})\text{gph}_\text{O}m & _\text{thọō} & \text{swi} \\
(\text{bgy})\text{cch}_\text{O}m & (\text{bgy})\text{cch}_\text{O}m & _\text{aọ} & (\text{bgy})\text{cch}_\text{O}m & _\text{aọ} & \text{ou} \\
\end{array}
\]

(sends, floats, is different, wakes, carries, offers, shrinks, terrifies, resents, sews, is exhausted, loosens, uses, passes [examination]).

**S Syllable**

Burmese and Arakanese s Syllables (B. -i, -ew, -et; A. -i, -eĩ, -et; so named from spreading) are distinguished from Burmese and Arakanese ə and f prosodic types of Syllable by the fact, among other criteria, that in neither language can velarity (k kh ṇ) immediately precede the syllabic vowel, and there are therefore no sequences *kV or *nV*. In fact, in Burmese, initial velarity is not a feature of s Syllables at all; but in Arakanese, velarity is a feature of the initial sequences kr and ŋr, and, though only in Nouns, ky, e.g. kri, ñreĩ, ñwi (B. t'ai krĩ, ñen ñrĩm, kye kʰweɪ), but does not immediately precede the vowel.

Arakanese s Syllables are further distinguished phonetically from b, ə, and f Syllables by the initial combination of features labiality, plosion, and voice, e.g. bri be finished, run.

**Burmese**

Burmese s are distinguished from c Syllables (-t, so named from centralized) by the fact that while, in s Syllables, initial labiality is either (i), non-palatalized

---

1. U Tin Maung volunteered two exceptions: keun kyin/kins sleep [of monks, buddhas] and khi [obscene], only the former of which appears in *Judson's Burmese-English Dictionary* (Rangoon, 1953); keun is a learned alternative to the more usual tseun.
(p m), in sm or sk Syllables (s Syllables that are also classifiable as m or as k by reference to the Quality system), e.g. pet, pit shut, meun mhin: shut [eyes], or (ii), palatalized or non-palatalized equally (pj mj ; p m), in sz Syllables, e.g. pii phre untie, mji mraññ, pii prñ: finish, in c Syllables, on the other hand, initial labiality must be palatalized, e.g. pijt pac throw, mijt mrac obstruct.

S Syllables can be classified, like the b (p. 113), in terms of the Aspiration, Juncture, and Palatalization systems, but with the difference that no s Syllables can also be classified as k or ñ (Juncture), a difference that reflects the absence of velarity (k ñ) from the permitted initial phonetic features of the s Syllable, and that the Palatalization system associates initial palatality (ts n j ñ, and, in sz Syllables, pj mj) with relative closeness of vowel (i eü), through the y term, and non-palatality (e.g. p n ñ s) with relative openness, through the y term. In s Syllables that are also classifiable, by reference to the Quality system, as m or k, sm and sk Syllables, the Juncture components p and m correlate with ñ (there are no sequences *pjñt and *mjñt).

The Syllable-initial features of Burmese s Syllables as classified in terms of the Juncture, Palatalization, and Aspiration systems, are, in Interventral Junction:

(i) sm and sk Syllables (-en, -et)

| Junct. | p m t n c l j n y s v |
| Pal.   | (y) (y) (y) (y) (y) (y) (y) (y) (y) (y) |
| Asp.   | h h h h h h h h h h h h h h h h h h h |
|        | p p h m m t th n ñ s sh l l t e t e h n ñ j e th ' h |

(ii) sz Syllable (-i)

| Junct. | p m t n c l j n y s v |
| Pal.   | y y y y (y) (y) (y) (y) (y) (y) (y) |
| Asp.   | h h h h h h h h h h h h h h h h h h |
|        | p p h p j m m m j m t th n ñ s sh l l t e t e h p ñ j e th ' |

Only one possible vowel is appropriate to the s Syllable, whether sz, sm, or sk : sz, i ; sm/sk, eü. It is not, therefore, possible to set up a V commutation system; and the appropriate vowels are, accordingly, adequately formulated by the prosodic component s, qualified by the Quality components z, m, and k.

Examples of s-Syllable formulae are given on pp. 120-1 below.

**Arakanese**

Arakanese s Syllables can be further classified by reference to the Aspiration, Rhotacization, Palatalization, and Juncture systems on the same grounds, in general, as the b Syllable, but with certain differences as regards the Juncture and Palatalization systems.
Syllables can be classified in terms of the Juncture system not only as being also p, m, t, n, c, l, r, k, ṇ, j, n, y, s, or v, like the b Syllable, but also as w, e.g. wi, is distant. This additional Juncture component correlates with the Palatalization component ŭ and the Rhotacization component ĭ (there is no initial sequence *wr).

The Palatalization system (y, ŭ) not only discharges the same sort of syntagmatic function in the Arakanese s Syllable as in the Burmese (p. 117) but, in sw Syllables (below), it associates initial palatality (ts) with labio-palatality (i) through its y term, but, through its ŭ term, non-palatality (e.g. t, n, m) with labio-velarity (w), e.g.

y: təqi feeds;
y: twi finds; ŭwi warms.

Of the Juncture components only j, n, and y correlate with the Palatalization component y.

Two further prosodic systems, Nasalization and Labio-velarization, need to be stated for Arakanese sz Syllables (-i/t) but not for sm or sk (-e, -et).

The Nasalization system comprises the two terms n and ŋ, and is designed to account for the syntagmatic association of nasality of vowel, in conjunction with a relatively open vowel quality (j), with nasality as an initial-consonant feature (m m̪w n n̪w ñ̪w n ŋ n̪r), through the n term, and non-nasality of vowel, together with relative closeness, with non-nasality as an initial feature, through the ŋ term, e.g.:

n: m̪i asks; ŋ̪i warms; ŋr̪ grumbles (B. m̪e, nhwe, ŋr̪i)
n: pi gives; kri is big; ñwī gets dry (B. pe, krī, swe).

The n term correlates exclusively with the m, n, ŋ, and ŋ Juncture components, and the ŋ with the remaining Juncture components (p, k, s, etc.), with the result that for the present purpose there is no need to formulate them independently of the Juncture components.

The two-term Labiovelarization system (w, òw) deals with syntagmatically related labial features: the w term relates a non-syllabic rounded vowel (w ŋ w ŋ) to lip-rounding as an initial-consonant feature, e.g. ŋ, m, ŋ, and to relative retraction of vowel (j); the òw term relates absence of a rounded non-syllabic vowel to features the reverse of those, to lip-spreading and to a relatively advanced type of i vowel, e.g.:

w: ŋ̪i warms; wi is far; təqi feeds (B. nhwe, we, krwe)
òw: li slices; pi gives; òi dies (B. l̪hī, pe, se.

All the Juncture components except w correlate with the Labiovelarization component òw; all of them except l, p, and v also correlate with w; it is only, therefore, from formulae containing l, p, or v that òw can be omitted without giving rise to lexical ambiguity.
The Syllable-initial features of s Verbs classified in terms of the Juncture, Palatalization, Rhotacization, Labiovelarization, and Aspiration systems, are, in Interverbal Junction:

(i) sm/sk Syllable (-ei, -ett)

\[
\begin{align*}
\text{Junc.}: & \quad p(y) \quad m(y) \quad t(y) \quad n(y) \quad c(y) \quad l(y) \quad r(y) \\
\text{Rhot.}: & \quad \bar{r} \quad r \quad \bar{r} \quad \bar{r} \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \\
\text{Asp.}: & \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
& \quad p \quad ph \quad p\bar{r} \quad m \quad m\bar{r} \quad m \quad t \quad th \quad n \quad \eta \quad s \quad sh \quad 1 \quad l \quad r \\
\text{Junc.}: & \quad k(y) \quad \eta(y) \quad j(y) \quad p(y) \quad y(y) \quad s(y) \quad v(y) \\
\text{Rhot.}: & \quad (r) \quad (r) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \\
\text{Asp.}: & \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
& \quad kr \quad \eta r \quad t e \quad t \bar{e} \quad h \quad n \quad j \quad e \quad \theta \quad h \\
\end{align*}
\]

(ii) sz Syllable (-i/-i)

\[
\begin{align*}
\text{Junc.}: & \quad p(y) \quad m(y) \quad t(y) \\
\text{Rhot.}: & \quad \bar{w} \quad w \quad \bar{w} \quad w \quad \bar{w} \quad w \quad \bar{w} \quad w \quad \bar{w} \quad w \\
\text{Lab.}: & \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
& \quad p \quad -1 \quad b r \quad p\bar{r} \quad - \quad m \quad m w \quad -1 \quad -1 \quad t \quad th \quad tw \quad t w \\
\text{Junc.}: & \quad n(y) \quad c(y) \quad l(y) \quad r(y) \quad k(y) \\
\text{Rhot.}: & \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \\
\text{Lab.}: & \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
& \quad n \quad \eta \quad n w \quad \eta w \quad s \quad sh \quad - \quad s w \quad 1 \quad l \quad r \quad -2 \quad r w \quad r w \quad k w \quad 1 \quad k r \quad k r w \quad - \\
\text{Junc.}: & \quad \eta(y) \quad j(y) \quad p(y) \quad y(y) \quad s(y) \quad v(y) \\
\text{Rhot.}: & \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \quad (\bar{r}) \\
\text{Lab.}: & \quad (w) \quad (\bar{w}) \quad (\bar{w}) \quad (w) \quad (w) \quad (w) \quad (w) \quad (w) \quad (w) \\
& \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
& \quad - \quad - \quad \eta r \quad - \quad t e \quad t e \quad t e \quad -1 \quad n \quad \eta \quad - \quad e \quad w \quad - \quad \theta \quad w \quad - \\
\end{align*}
\]

Since, like Burmese (p. 117), there is only one possible vowel in an Arakanese s Syllable (sz : i/i ; sm/k : e), there are no V systems, and no phonematic components.

Examples of Arakanese s-Syllable formulae are given at pp. 120–1 below.

1 There are, however, Noun examples: pýwā pwi ringworm, mryñ̄ mřl earth, mř̄fí snake, (w)kř̄h kř̄ dog, jw̄ tēii sweat.
2 ei, be, the only Verb example in his dialect, Saw Hla Pru considered to be a Burmese loanword (r̄i), for which the correct Arakanese form was r̄i in Akyab but hi in the country districts. Cf. also the Noun example ri [personal name].
In the prwh Syllable, and in this type of Syllable alone, voice is a Syllable-initial feature, even in Interverbal Junction, e.g. bri, finish, run (B. pris and pre respectively).

A.-B. : *s CORRESPONDENCES

Burmese s Syllables regularly correspond to Arakanese s Syllables (but the converse does not hold: some Arakanese s Syllables, including all sw Syllables, correspond to Burmese a Syllables; p. 124); an A.-B. category *s can therefore be established, with reflexes s in either language.

The same correspondences of Palatalization, Rhotacization, and Aspiration components can be established as for the *b:

A. h h y(r) r yR
B. h h y y y
A.-B. *h *h1 *y *r *y

The Juncture components correspond as follows:

(i) sm and sk Syllable

| A. | pR pr mR mr t n c l r k(r) η(r) j j |
| B. | p  m m t n c l y j η j j |
| A.-B. | *pR *mR *t *n *c *l *k *η *j *j |
| A. | y s v |
| B. | y s v |
| A.-B. *y *s *v, e.g.: |

A.-B. |

*(g)2spRhm | (g)2spRhm _pet (g)2spRhm _petn pin is thin |
*(g)2smRhm | (g)2smRhm _met (g)2smRhm _meun mhin is dim |
*(g)2smRhm | (g)2smRhm _mre (g)2smRhm _meun mrin enjoys |
*(1g)sthk | (1g)sthk _tett (1g)sthk _tett tit is quiet |
*(1g)srhk | (1g)srhk _rett (1g)srhk _rett rit reaps |
*(1r)gsRhm | (1r)gsRhm _kre (1g)gsRhm _tcream krim: frightens |
*(g)2sRhm | (g)2sRhm _pre (g)2sRhm _neun nrin is quiet |
*(1g)sjhk | (1g)sjhk _tchett (1g)sjhk _tchett khyit hooks |
*(1g)sjhk | (1g)sjhk _nett (1g)sjhk _nett nitt nods |
*(g)2syhm | (g)2syhm _eet (g)2syhm _een rhin is hot |

(ii) sz Syllable

| A. | prw mRw tw nRw cR w 1 k(r)Rw η(r)Rw jw j y s w v |
| B. | py my t n c l j η j j y s |
| A.-B. *pr *mR *t *n *c *l *k *η *j *y *s |

1 One exception has been noted: A. h, phet shut; B. h, pett pit.

* The sole Arakanese example of pr, 'prR, shiver, has no corresponding Burmese Veb form; but compare phin'phin' (phēmōhē) tumañ, it trembles.
There are six Burmese syllables that correspond not to Arakanese syllables but to "e" syllables in the V term H (Gk. ᾳτα) :

<table>
<thead>
<tr>
<th>A.-B.</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(g)*2sprhz</td>
<td>(g)n)2sprwzh <em>pri</em></td>
<td>(g)2psyhz <em>pji</em> pdf 2 unties</td>
</tr>
<tr>
<td>*(1)gsmwyz</td>
<td>(1)n)gsmwzh <em>mɪ</em></td>
<td>(1)gsmwyz <em>mi</em> mɪ catches</td>
</tr>
<tr>
<td>*(g)*2nwhz</td>
<td>(gn)snwzh <em>ni</em></td>
<td>(g)2nhz <em>ni</em> nɪ is red</td>
</tr>
<tr>
<td>*(1)gskwzh</td>
<td>(1)n)gskrwzh <em>kri</em></td>
<td>(1)gskwzh <em>kri</em> is big</td>
</tr>
<tr>
<td>*(1)gsnpwzh</td>
<td>(1)n)gsnpwzh <em>nɪ</em></td>
<td>(1)gsnpwzh <em>nɪ</em> nɜː grumbles</td>
</tr>
<tr>
<td>*(g)*2shjhz</td>
<td>(g)n)2shjwzh <em>teh</em></td>
<td>(g)2shjhz <em>teh</em> khyi lifts</td>
</tr>
<tr>
<td>*(g)*2spnwhz</td>
<td>(gn)2spnwhz <em>ئ</em></td>
<td>(g)2spnwhz <em>ئ</em> ihi stinks</td>
</tr>
<tr>
<td>*(1)gsyhwz</td>
<td>(1)n)gsyhwz <em>ئ</em></td>
<td>(1)gsyhwz <em>ئ</em> rhi is</td>
</tr>
</tbody>
</table>

On the other hand there are a number of Arakanese syllables, including all Arakanese sw syllables, that correspond to Burmese "e" syllables, in the V term E. The next stage must therefore be to give an account of the Burmese and the Arakanese "e" syllable.

**e** syllable

In order first to dispose of the correspondence of Arakanese s to Burmese "e" syllables (-e, -ɛ, -a; -un, -an, -ən; -ɛt, -at, -ət) mentioned in the preceding paragraph it is convenient to consider first those "e" syllables which are also classifiable in terms of the quality system as z, "az" syllables (-e, -ɛ, -a); for these outstanding correspondences are all correspondences involving z syllables (A. sz, B. az); the "em" and the "ek" syllable are dealt with subsequently (pp. 126-30).

**az** syllable

To distinguish the Burmese az syllable from the two remaining prosodic types of syllable, the f (from fronting) and the c (from centralized), it is only necessary to point out that f syllables can also be classified, in terms of the quality system, as m or as k, and c syllables as k, but neither as z; cf. az, pe pet, we way, əwə swəs; fm, than thuin, fk, lait luik; c(k), pitt pac. The Arakanese az syllable

---

1 Page 119, note 2. The Akyab form ɐ and the rural Arakanese ɐ would give correspondences:

* (1)gsrhz | (1)n)gsrwhz *ɐ* | (1)gsyhz *ɐ* rhi is

2 Arakanese ɐ, is finished, an example of the rhotacisation component r, corresponds not to a Burmese y syllable (*pji) but, irregularly, to a ţ syllable, *pɪ pɪt;* but the Burmese reading-style pronunciation *pji would give a regular correspondence *(1)gsprfzh.
is similarly distinguished from the sole remaining Arakanese prosodic type of Syllable, the f, by the fact that the latter can be also classified as m or as k but not as z; cf. œz, lo goes, swe pulls; fm, that sits; f’k, latl follows, patl throws.

Burmese

Burmese œz Syllables can, like the b and the s, be classified in terms of the Aspiration (h, ḫ) and the Palatalization (y, ỹ) systems; but, unlike the b and the s Syllable, they can also be classified by reference to a two-term Labiovelarization system (w, ōw).

The Burmese Labiovelarization system is set up on the same grounds as the Arakanese (p. 118): to associate a non-syllabic rounded vowel (w ƞ) with initial lip-rounding (except in y Syllables, which have initial palatality: yēn te) and with a relatively back vowel quality (ẽ ƞ a) in w Syllables, but to associate consonantal and vocalic features the reverse of these with absence of labiovelarity or labio-palatality in ōw Syllables; e.g.:

\[
\begin{align*}
\text{w} & : \text{wè we} ; \quad \text{tσ} \tilde{\text{g}} \text{ khyway} ; \quad \text{ðwà swà} ; \\
\text{ōw} & : \text{jè re} ; \quad \text{νè ṕíy} ; \quad \text{jà ra}
\end{align*}
\]

All the Juncture components except w correlate with ōw; all the Juncture components except ŷ and v correlate with the Labiovelarization component w.

This new system, Labiovelarization, affects the statements of exponency of the y and ŷ terms of the Burmese Palatalization system in much the same way as it affected the Arakanese (p. 118): in ōw Syllables the y term associates initial palatality (pì mi ji ti ji ƞ a) with lip-spreading and relative frontness of vowel (ẽ ƞ a), while in w Syllables its role is to associate initial palatality (ta ji ƞ) with labio-palatality (ƞ); in the ōw Syllable the ŷ term associates non-palatality (e.g. p ƞ s') with relative backness of vowel (e ƞ g), and in w Syllables it associates non-palatality (e.g. p ƞ s, but not ŷ) with labiovelarity (w), e.g.:

\[
\begin{align*}
\text{y} & : (\text{w}) \text{pià pra} ; \quad \text{jà ra} ; \quad (\text{w}) \text{tσà krwa} ; \quad \text{juà rwà} ; \\
\text{ỹ} & : \text{pà pà} ; \quad \text{tха tha} ; \quad \text{pwa phwàs} ; \quad \text{ðwà swà} ;
\end{align*}
\]

but because of their correlation with the Juncture components, y and ŷ need to be formulated independently of them only in formulae containing the Juncture components p and m (cf. the b Syllable, p. 113).

Classified prosodically in terms of the Juncture, Palatalization, Labiovelarization, and Aspiration systems the Syllable-initial features of œz Syllables, as they appear in Interverbal Junction, are as follows:

\[
\begin{array}{cccc}
\text{Junc.} & & & \\
\text{Pal./Lab.} & & & \\
\text{Asp.} & & & \\
\end{array}
\]

\[
\begin{array}{cccc}
\text{p} & \text{m} & \text{t(y)} \\
\text{yw y(w)} & w(y) & \text{yw y(w)} & w(y) & \text{w} \\
\text{h h h h h h h h h} & \text{h h h h} & \text{h h h h} & \text{h h h h h h} \\
\text{p ph pì pì pw pw m m m mj mj mw mw t th tw t w y} \\
\end{array}
\]
A phonematic system, a three-term V system (E, H, A), is statable for əz Syllables, the exponents of each term being:

\[ E : \text{half-closeness} (e \ e \ e) ; \ H : \text{half-openness} (e \ e \ e) ; \ A : \text{openness} (a \ a \ a)\].

The prosodic components ə (Labialization) and z (Quality) can be omitted from a formula containing any of the (more specific) phonematic components.

Examples of Burmese əz formulae are given at pp. 124–6.

**Arakanese**

Arakanese əz Syllables (-e, -a) are also further classifiable, like sz Syllables, in terms of the five prosodic systems Aspiration (h, ū), Palatalization (y, ū), Rhotacization (r, ū), Labiovelarization (w, ū), and Juncture, but differ from them phonetically in having the following Syllable initials: pj mj nį lw lw k kh jį and əŋ, and in not having voice and plosion (br) as an initial feature. The phonological differences reflected in these phonetic differences are too great for the prosodically classified list of sz Syllable initials (p. 119) to stand for the əz Syllable, even with modifications; and the following əz list is therefore given, in which the Juncture components p and m correlate with y as well as with ū (pj mj nį), l and y with w as well as with ū (lw lw jį nį), and k with ū as well as with w (k kh):

\[
\text{Junct.:} \quad \frac{p}{m}
\]

\[
\text{Rhot.:} \quad \frac{\bar{r}}{r\bar{y}w} \quad \frac{\bar{r}}{r\bar{y}w}
\]

\[
\text{Pal./Lab.:} \quad \frac{\bar{y}w}{y(\bar{w})} \quad (\bar{y}w') \quad \frac{\bar{y}w}{y(\bar{w})} \quad (\bar{y}w')
\]

\[
\text{Asp.:} \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
- \, ph \quad pj - \, pw \, pw \, pr \, pr \quad m \, mj \, nį \quad mw \, nį \quad mr -
\]

\[
\text{Junct.:} \quad \frac{t(\bar{r}į)}{n(\bar{r}į)} \quad \frac{c(\bar{r}į)}{l(\bar{r}į)} \quad \frac{r(\bar{r}į)}{r(\bar{r}į)}
\]

\[
\text{Lab.:} \quad \frac{\bar{w}}{w} \quad \frac{\bar{w}}{w} \quad \frac{\bar{w}}{w} \quad \frac{\bar{w}}{w} \quad \frac{\bar{w}}{w} \quad \frac{\bar{w}}{w}
\]

\[
\text{Asp.:} \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \quad h \\
t \, th \quad tw \, tw \quad n -1 \quad nw - \quad s \, sh \quad sw \, sw \quad l \, lw \quad lw \, r \, r \quad rw -
\]
A two-term phonematic V system (H, A) is established for Arakanese ṣz Syllables, the exponents of which are:

\[ H : \text{half-closeness (ə e ə)} \quad \text{A : openness (a q a)} \]

Since the corresponding phonematic components H and A imply both ə and z, these two prosodic components can be omitted from formulae containing H or A.

A.-B. : ARAKANESE-s-SYLLABLE AND BURMESE-ə-SYLLABLE CORRESPONDENCES (*E)

Arakanese sw(z) Syllables (pp. 117–8) regularly correspond to Burmese əw Syllables in E, whence *əwE(z), with s as the Arakanese reflex of *E, and ə as the Burmese; some Arakanese sw(z) Syllables, other than those considered on pp. 120–1, correspond to Burmese (ə)wE(z) Syllables, whence *wE.

The correspondences of the Aspiration (h, ť), Palatalization (y, ŷ), and Rhotacization (r, ř) components are as stated for the *s correspondences (p. 120); the Arakanese Labiovelarization components w and ť correspond to the Burmese w and ť respectively, giving *w and *w.² The Juncture components too do not differ significantly in their correspondences from those stated for the *s correspondences: there are no examples of *ŋ (A. ŋ, B. ɲ), *n (A. n, B. n), or *y (A. y, B. y); but there are in addition *r (A. r, B. y) and *w (A. w, B. w); e.g.:

<table>
<thead>
<tr>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
</table>
| *(1)ɡpýwH | *(1)ɡsp rubbish(z) | *p | *(1)ɡpýwH | *p^
| *(1)ɡprwH | *(1)ɡspr rubbish(z) | *r | *(1)ɡprwH | *r^
| *(g)2mywH | *(g)2sm rubbish(z) | *w | *(g)2mywH | *w^
| *(1)gcwH | *(1)gcw rubbish(z) | *w | *(1)gcwH | *w^
| *(1)grwH | *(1)grw rubbish(z) | *w | *(1)grwH | *w^

² There are Noun examples; *(1əfy)ɡnwbH(z) əpe whistle; *(gəroversy)2nwbH(z) wwe silver.

² In Arakanese mřw, snake, the Rhotacization component r corresponds not to the Burmese Palatalization component y (in *mjiq) but, irregularly, to ţ: mwe mwe, mrowe.
A.-B. A. B.
*(1)grwhE (1řy)gsrwh(z) 'řwi (1ĕy)gywhE(z) 'swē rhwe' moves
*(g)2kwhE (gřy)2skwñ(z) kri (gǝy)2jwñ(z) tce kre is crushed
*(g)2jwñE (gřy)2sjwñ(z) tei n” kye gets even
*(g)2swñE (gřw)2swñ(z) wi (gǝyw)2wñ(z) we we distributes

The regularity of the *E type of correspondence rests on twenty-eight examples in the corpus of material, to which more could certainly be added (p. 109); the following six examples, in which a Burmese (ǝ)E Syllable (-e) corresponds not to an Arakanese s Syllable (-i) but to an Arakanese ǝ Syllable in H (-e), are therefore taken to be irregular:

ŋe ńes gapes at (A. ǝe); se rhañ is long (A. ǝe);
pié prañī is filled (A. ǝrē); pié phrañī fills (A. ǝrē);
piǝ phre answers (A. ǝrē); Kwē whe' butts (A. ǝwe)

One would have expected Arakanese (ǝ)H Syllables like these six to correspond to Burmese (ǝ)H Syllables (pp. 125–6; -ǝ).

There are also in the Arakanese material six (ǝ)H Syllables, like those in the preceding paragraph (-e), that correspond, irregularly, not to Burmese (ǝ)H Syllables (-e) but to s Syllables (-i):

'mre tastes (B. 'mi j mrañī); mre neighs (B. 'mi j mrañī);
'se abounds (B. 'si caiñ); re laughs (B. 'ji ray);
'krä looks (B. 'tei krañī); kre is clear (B. 'tei krañī)

The fact that nine of the twelve exceptional examples given in the last two paragraphs are, in Burmese, y Syllables may well be significant; it is also noteworthy that eight of them have final ſ in the orthography: Burmese forms in -ň are notoriously inconsistent, as these eight examples show, and variable (prañī and prañī, for example, are pronounced with ǝ by some speakers and with i by others). The Arakanese pronunciation of the corresponding forms seems to be remarkably uniform (-e).

A.-B.: *(ǝ)H(z) and *(ǝ)A(z) Correspondences

Apart from the exceptions considered in the last three paragraphs Arakanese ǝz Syllables in H and A (-e, -ǝ) correspond respectively to Burmese ǝz Syllables in H and A (-e, -ǝ), whence *H and *A.

The correspondences stated for the terms of the Aspiration, Palatalization, Rhotacization, Labiovelarization, and Juncture components above (*E, p. 124) hold good for comparisons of Arakanese and Burmese (ǝ)H and (ǝ)A Syllables too; these last also afford examples of the correspondences lacking in the *E type: *(ǝ) (A. ǝ, B. ķ), *(ǝ) (A. ǝ, B. ķ), *(y) (A. y, B. y); e.g.
The criterion used to distinguish Arakanese and Burmese əz Syllables from Burmese and Arakanese f (from fronting) Syllables and from Burmese c (from centralized) Syllables (pp. 121–2) is not valid for Burmese and Arakanese əm Syllables (A. -ɛ, -э, -ē; B. -ən, -ən, -ən) and Burmese and Arakanese ək Syllables (A. -ɛt, -ət, -ət; B. -et, -ət, -ət), for all f Syllables are also either m (A. -at; B. -am) or k (A./B. -at), and c Syllables can only be also k (B. -at). Burmese əm and ək Syllables can, however, be immediately distinguished from c(k): initial velarity (k ə) is a potential feature of the ə Syllable but not of the c (there are no such sequences as *kət or *kət)\(^1\); but Burmese and Arakanese əm and ək Syllables are less easily distinguished from fəm and fək Syllables. In fact no single criterion suffices to distinguish these ə Syllables from the f; but three separate criteria have to be stated, each for a sub-class of ə Syllable. The stating of these criteria is therefore postponed until after the relevant prosodic sub-categories have been distinguished and illustrated (p. 130).

For both Burmese and Arakanese əm and ək Syllables a further prosodic system needs to be stated, the two-term Front-Back system (ŋ, ŋ), the terms of which are so named from the letter ə of Burmese orthography (but in the

\(^1\) There is an Arakanese Noun example of əy: əlja, length (B. əlja alyər); I have no note of any corresponding Arakanese form to the Burmese lyə Verb ləja lya (is flimsy), which is in any case somewhat literary.

\(^2\) The sole exception, Burmese kət, pinch, is assumed to be a recent loan, perhaps from Mon; it does not appear in Judson’s.
typographically more convenient form ‘ŋ’); for ņ symbolizes some of the inter-related vocalic and consonantal features concerned.

The function of this additional prosodic system is to associate close and half-open front vowels (A. -ã -at; B. -am/-an, -at) with initial-consonant sequences comprising consonant and non-syllabic rounded vowel (Cw/Cq, i.e. pw rw mjû sq) on the one hand, and, on the other, to associate open vowels and back vowels (A. -a -at; -â, -at; B. -an/-qn, -at; -on, -ot) with the impossibility of any such Cw/Cq sequence.

There are advantages in formulation in stating as the exponents of Burmese ŋ the same type of phonetic feature as is stated for Arakanese ŋ, and vice versa. Arakanese ŋ and Arakanese ŋ phonetic features are, thus, the reverse of Burmese ŋ and ŋ phonetic features respectively:

\[ \begin{align*}
&\text{ŋ} \\
&\text{A. no potential Cw/Cq sequence, backness of vowel (a n)} \\
&\text{B. potential Cw/Cq sequence, frontness of vowel (t e)} \\
&\text{ŋ} \\
&\text{A. no potential Cw/Cq sequence, backness/openness of vowel (a q o)} \\
&\text{B. no potential Cw/Cq sequence, backness/openness of vowel (a q o)}
\end{align*} \]

e.g.:

\[ \begin{align*}
\text{ŋ} &: A. \text{ mrã, B. mjûn mræi sees.} \quad A. \text{ prôt, B. pwät prwak swells.} \\
\text{ŋ} &: A. \text{ mrë, B. mjæn mran speeds.} \quad A. \text{ prwät, B. pijót prwat clusters.}
\end{align*} \]

Apart from the Front-Back system the other prosodic systems in terms of which Arakanese and Burmese ōm and ōk Syllables can be classified are those familiar from the previous section (ōz, pp. 122–124); but there is one important feature that distinguishes the Burmese ōm and ōk from the ōz, and indeed from all other prosodic types of Syllable: in their formulae alone is the w Labiovelarization component combined with the y Palatalization component and one of the Juncture components p, m, or ŋ, e.g. ŋ(y)w, ŋot ñhwat bend; pyw, pijon prwams mix together; myw, mijot mrwak utter. In Arakanese, similarly, it is only in the ōm and the ōk Syllable that the w Labiovelarity component correlates with the Juncture component ŋ, e.g. ŋust bend; ŋûë bend.

In the Arakanese and the Burmese ōm and ōk Syllable the y term of the Palatalization system again associates initial palatality (pi mi ts n j s) with relative frontness of vowel (A. ë ê ã at; B. ŭn ê ãn at on ot) except in Arakanese ŋï and Burmese wŋ Syllables (A. ë ê ãt; B. ŭn ê t), in which it associates initial palatality (ts n s, and ŋ too for Burmese) with labiapalatality (u); further, in Burmese ōm Syllables, y associates initial palatality with pureness of vowel (ûn ōn). ŋ, on the other hand, associates non-palatality (e.g. k m ð) with the reverse of those features: (i) relative backness of the phonetically corresponding type of vowel (A. ë ê ã at ŋ nt; B. ſ(ê)n ê ſn at ô(ê)n ot), except in Arakanese wŋ and Burmese wŋ Syllables, in which the associated feature is labiovelarity (w), and (ii), in Burmese ōm Syllables, potential diphthongization (ďô ôô).
In the ṣm and the ṣk Syllable the w term of the Labiovelarization system associates rounding of consonant (except palatals), e.g. ṣ k l, with either (i) in front-vowel Syllables (A. ķ : ķ st ; B. ṣ : τ(ə)n et), a non-syllabic rounded vowel (w ṣ) and a degree of retraction (A. ķ st ; B. τ(ə)n et), or, (ii), in open- or back-vowel Syllables (A. ṣ : ū at, ū st ; B. ṣ : ṣn/ṇ at, ṣ(ə)n ət), rounding of syllabic vowel (A. ṣ ; B. ṣ); the ṣ term associates non-rounding of initial consonant, e.g. ṣ k l, with absence of rounding as a vowel feature (syllabic or non-syllabic), and, in Arakanese ū and Burmese ū Syllables, with absence of retraction (as compared with the w Syllable) (A. ķ/Ĉ ķ st/et, ū at ; B. τ(ə)n/τn et/et, ən/ṇ at).¹

Arakanese oṁ and oṅk Syllables and Burmese oṁ and oṅk Syllables (A. ķ st ; B. τ(ə)n et) do not differ from the respective oṁ Syllables as regards classification in terms of the Juncture system; indeed they differ from the oṁ Syllable in Syllable-initial features only to the extent that the Burmese oṁ and oṅk Syllable are without examples of ū, ūj, sw, and ṣw, but have the advantage over the oṁ Syllable in one respect, in the additional initial mju (mju in mruwak utter), while for Arakanese oṁ and oṅk Syllables no initials ūr, ū, ū, mju, ū, ū, ksw, krw, jw, or ūr have been noted, in comparison with Arakanese oṁ Syllables, though the additional initials ū, ṣw, ū, ū, ūr, and ūw, and ū and ūr have; but the list of Arakanese Verbs is admittedly incomplete (p. 109). Since the only important respect in which these Arakanese and Burmese Syllables differ from the oṁ is the Arakanese ūr and ūr, there would seem to be little point in giving a separate list. The oṁ lists (B., pp. 122–3; A., pp. 123–4), as modified by the comparison in this paragraph, can therefore stand for both.

Like the Burmese and the Arakanese oṅw Syllable (B. -e, -e, -a; A. -e, -a) no Burmese (o)ńm (B. -a/ən) or (o)ńk (at) Syllable, and no Arakanese (a)ńm (at) or (a)ńk (at) Syllable, can be classified in terms of the Juncture system as w (there are no sequences (B.) *wsn, *wət; (A.) *wə, *wat; and in their Syllable-initial features too these sub-classes of the Burmese and the Arakanese səm and sək Syllable do not differ significantly from Burmese, or from Arakanese, oṅw Syllables: the Burmese (a)ńm Syllable, for example, has no ū-, mju-, or ūj-initial, and has in addition ūj-; but the differences are not sufficiently great for it to be worth while to list the Syllable-initial features of the Burmese (a)ńm or (a)ńk Syllable, or the Arakanese (a)ńm or (a)ńk Syllable, independently of the oṁ (B., pp. 122–3; A., pp. 123–4).

The remaining sub-class of Burmese səm and sək Syllables, the (a)ńm (-ə(ə)n) and (a)ńk (-ət), unlike the w Syllables of the preceding paragraph, do contain Verb Syllables that can be classified in terms of the Juncture system as w, e.g. wat wat, wən wani, but none, on the other hand, that can be classified as v (there are no sequences *əə, *ən), or, if so happens, as r (*nə, *ən); but, apart from the

¹ The sole exception, Burmese ḳwən Ɂwənə, should perhaps be treated as a reading-style pronunciation, appropriate to this literary word.
prosodically significant absence of initial *- and h- (and the fortuitous absence of n-, η-, ū-, l-, pī-, lī-, mī-, and .tpl-), and apart from the prosodically significant potential presence of initial w-, the Burmese (ə)wĩm and (ə)wĩk Syllables do not differ from the initials listed for ζz (pp. 122–3) as ā; and this difference is not great enough to warrant a separate list of (ə)wĩm/k initials.

With Arakanese (ə)wŋm (-ō) and (ə)wŋk (-nt) Syllables, on the other hand, the position is quite different: they are distinguished from all other Arakanese Syllables by the fact that in terms of the Palatalization system they are all ā; and there are therefore no examples of such sequences as *pjn, *mjn, *te(h)n, *m, *jn, *m. Consequently, it is clear that no Arakanese Syllables of this type can be classified, in terms of the Juncture system, as j, ŋ, or ţ. On account of these individual features Arakanese (ə)wŋ Syllable initials are listed separately, as follows:

(ə)wŋ(m/k), -ō -nt

Junc.: [p m t(r) c(r) l(r) r(r) k w(r) s(r)]
Rhot.: [r r r]
Asp.: [h h h h h h h h h h h h h h h h h h]

There is never more than one vowel in each sub-category of Arakanese or Burmese ŋm or ŋk Syllable:

A. āŋ : a ; ŋ : ε ; wŋ : ɵ;
B. ŋm : u(ə) ; ŋk : ε ; wDani : a/a ; wŋk : a ; wŋ : ɵ;

no V commutation system can therefore be stated, the requisite vowel being adequately indicated by the appropriate term of the Labiovelarization (w, ā) and the Back-Front (ŋ, ŋ) systems, and, for Burmese, the Quality system (m, k) too.

A.-B.: ŋm AND ŋk CORRESPONDENCES

All Arakanese ŋm and ŋk Syllables regularly correspond to Burmese ŋm and ŋk Syllables respectively (the converse is not true: some Burmese ŋm Syllables correspond to Arakanese ŋ Syllables; p. 131); an A.-B. *ŋ category, with reflexes ŋ(m/k), can therefore be established.

On the basis of a regular correspondence of Burmese ŋ and ŋ to Arakanese ŋ and ŋ respectively, *ŋ and *ŋ can also be established.

The correspondences stated for the other prosodic components, Aspiration, Palatalization, Rhotacization, Labiovelarization, and Juncture, in previous sections (pp. 120, 124, 125) can stand equally for the present section (ə); and to them can be added:

*wh (A. wh ; B. pwh)
A single exception to the *r correspondence (A. r; B. y) has been noted: Arakanese prw (prw), swell, corresponds not to a Burmese form *pyw, but, irregularly, to pytw (pŷw) prwak/pwyak (but cf. Burmese mjwet below).

...correspondences include:

<table>
<thead>
<tr>
<th>A-B.</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(1ə)prwhŋk</td>
<td>(lęy̯)prwhŋk</td>
<td>'prwet ¹</td>
</tr>
<tr>
<td>*(1ə)whŋk</td>
<td>(lęy̯)yw̯hŋk</td>
<td>⁴wut</td>
</tr>
<tr>
<td>*(1ə)mrrwhŋk</td>
<td>(lęy̯)mrrwhŋk</td>
<td>'mr̯nt</td>
</tr>
</tbody>
</table>
| *(1ə)g1whŋm | (lęy̯)g1whŋm | 'lw̯ẽ | (lęy̯)g1whŋm | lə(w̯)n | lwam:
| *(gə)2rwhŋm | (gəy̯)2rwhŋm | ō̯ł | (gəy̯)2ywhŋm | ⁴sən | rhwən |
| *(1ə)rwhŋk | (lęy̯)rwhŋk | 'r̯t | (lęy̯)ywhŋk | jat | rap |
| *(1ə)gkrwhŋm | (lęy̯)gkrwhŋm | 'k̯n̯ | (lęy̯)gjwhŋm | tsən̯ | khrwən̯ |
| *(1ə)jŋhŋk | (lęy̯)jŋhŋk | 'tən̯t | (lęy̯)jw̯hŋk | tənt | khyək |
| *(1ə)nwhŋk | (lęy̯)nwhŋk | 'ŋ̯t | (lęy̯)nwhŋk | jət | jhwət |
| *(gə)2ywhŋm | (gəy̯)2ywhŋm | ⁴è̯ | (gəy̯)2ywhŋm | ⁴ən̯ | rham |

(clusters, hides, utters, regrets, rejoices, stands, leaves, cooks, bends, passes over).

Those Burmese omn Verbs which do not correspond to Arakanese omn Verbs correspond to f Verbs; the next stage must therefore be to define the f Syllable.

### f Syllable

The criteria by which, in Arakanese and Burmese alike, the f Syllable (A. -ət, -ət; B. -ən, -ənt) is distinguished from the omn and the ŋk Syllable vary according to the following three sub-categories: (i), Burmese ŋ (ən, -ət), Arakanese ŋ (ə̯, -ət); (ii), Burmese ŋw̯ (ən/ən, -ənt), Arakanese ŋw̯ (ə̯, -ənt); (iii), Burmese ŋw̯ (ən, ŋt), Arakanese ŋw̯ (ə̯, -nt). The first of these three sub-categories is distinguished from the f Syllable by a potential initial sequence comprising consonant and rounded non-syllabic vowel (6w-, 6q-) (*6wat is an impossible sequence), the second by the impossibility of having an initial labiovelar semi-vowel (w) (*wan/wan and *wat are not possible sequences; but cf. wan, wat), and the third by the impossibility of having a glottal initial (?) (*'on and *'nt are impossible sequences; but cf. 'am, 'at).

From the Burmese c Syllable (-ət), the f Syllable is distinguished, among other criteria, by potential initial velarity (k n) (*kət and *nət are impossible sequences; but cf. khält, nählt).²

The Burmese and the Arakanese f Syllable closely resembles the b Syllable: Palatalization systems (y, ŋ) need to be stated for both Arakanese and Burmese f Syllable, and a Rhotacization system (r, r̯) for the Arakanese; but it differs from the b Syllable in having initial labiovelarity (w) as a potentiality, a phonetic difference that is reflected in the need to set up a Labiovelarization prosodic

¹ Also ŋgk.
² But see p. 126, n. 2.
system (w, ō) that is not needed for the b Syllable. As an additional difference, there are f Syllables that can be classified as w in terms of the Juncture system, e.g. B. wañ, A. wañ.

The exponents of the terms of the Labiovelarization system are:

w : initial labiovelarity, relative retraction of vowel wañ
ōw : initial non-labiovelarity, a relatively advanced vowel pāt jat, etc.

e.g.:

w : A. wañ, B. wañ wuin ; A./B. wañ wuik
ōw : A./B. pāt puik ; A. rāt, B. jat ruik.

Since, apart from the prosodically significant labiovelarity feature (w), the Burmese f-Verb Syllable is distinguished from the b only by the fortuitous absence of initial θ, ph, n, and j, and the Arakanese, similarly, by the absence from the available material of r, n, mr, and kr, there is no need to list the f-Syllable initial features: the b Syllable list (p. 113) will serve, subject to the modifications just stated.

A.-B. : BURMESE ōm AND ARAKANESE f CORRESPONDENCES

The Arakanese material provides only eight examples of this type of correspondence, of Burmese ōm Syllables (-un) to Arakanese fm (-at). Six of the eight Burmese Verbs, and the corresponding Arakanese f Verbs, can be classified by reference to the Palatalization system as y Verbs: pjum pyañ, pjum pyañ, pjum phyañ, tan kyañ, tehun khyañ, iun yañ (iñ = ña-ka-les sat); the remaining two are ū : sun cañ, sun cañs. This correspondence is termed the *cm because it is phonetically parallel to the *ck correspondence stated below (p. 132), a parallel that enjoys orthographic support: *c is represented in the orthography by n and c.

The following are examples of the *cm correspondence:

A.-B.  

A.  

B.

*(g)2cphm  (grw)2fpym  _pjañ  (gōw)2pyhm  _pjum  pyañ
*(g)2cjhm  (gryw)2fjhm  _tshañ  (gōy)2jwhm  _tehn  khyañ
*(g)2cyhm  (gryw)2fyhm  _jat  (gōy)2ywñhm  _iñ  yañ
*(l)gcm  (lryw)gcsm  _sæñ  (løy)gcwñm  _sun  sañs

(is levelled, is sour, is tame, minces).

C SYLLABLE

The (Burmese) c Syllable (-tt) resembles the Burmese s (from spreading) more closely than any other, and especially the sk Syllable (-et); for all c Syllables are also classifiable as k by reference to the Quality system.

The only prosodic respect in which the c(k) Syllable differs from the sk is that in the c Syllable initial labiality must be palatalized (pj pj mj; there can
be no sequences *pt, *mt), while in the sk Syllable, initial labiality cannot be palatalized (p ph m; there are no sequences *pjiet, *mjet). The only other Syllable-initial differences between the c and sk or sm Syllable are fortuitous: except that the c Syllable has no ə initial in a Verb Syllable (but cf. the Noun æ’ rhac eight), the list of sm and sk initials (p. 117) will serve for the c Syllable.

In the c Syllable the Palatalization term y associates initial palatality (ŋ mj te n) with relative frontness (i); ū associates non-palatality (t s n l o’ h) with relative backness of vowel (u). Thus, the Juncture components p, m, j, ŋ, and y correlate with y, and t, c, n, l, s, and v with ū.

A.-B. : BURMESE c AND ARAKANESE f CORRESPONDENCES

Burmese c(k) Syllables regularly correspond to Arakanese fk Syllables; and this correspondence can be associated, as *ck, with the *cm correspondence of the previous section (p. 131).

The Aspiration components correspond as before, to give *h and *f: the Palatalization components and the Arakanese Rhotacization components give three sets of correspondences:

(i) *y (A. y; B. y); (ii), *r (A. r; B. y); *ū (A. rū; B. y); e.g.:

A.-B. A. B.
*(l)cgūŋk (l)gcūŋk ’paut (l)gycph(k) ’piît pac throw; pyac is thick
*(l)cgprhk (l)gyfprhk ’prait (l)gycph(k) ’piît phrac becomes
*(l)gcphhk (l)gfrphhk ’pjaat (l)gycph(k) ’jaat phyac massages
*(l)cgjhk (l)gfyjhk ’tseaut (l)gycjh(k) ’teut khyac loves
*(l)cgfšhk (l)gyfršhk ’raat (l)gycyh(k) ’jut rac winds round
*(l)cgfyhk (l)gyfgyhk ’jaat ’jat yac gets drunk

A.-B. : f CORRESPONDENCES

The remaining Arakanese f Syllables (-af, -af), those which do not correspond to Burmese ñm (-m) or c (-tt) Syllables, regularly correspond to Burmese f Syllables, whence *f. The prosodic correspondences are the same as those of the b Syllables (p. 115), but with the addition of the Juncture correspondence of Arakanese to Burmese w, whence *w, and the correspondence of the Labiovelarization components, whence *w, *ū; e.g.:

A.-B. A. B.
*(l)gfwm (l)gfuwh)gfwm ’waï (l)wfuwh)gfwm ’waun wuït does jointly
*(l)fwm (l)gfuwh)fwk ’waï (l)wfuwh)fwk ’waït wuïk curves round
*(l)gfrk (l)gfuwh)frk ’krait (l)gfuwh)frk ’krait kruïk loves
*(l)gpyhm (l)gfuwh)fpýhm ’paï (l)wfuwh)fpýhm ’pauñ puïn cuts
*(l)gfrhk (l)gfuwh)frhk ’raï (l)gfuwh)frk ’jaït ruïk hits.