

LINGUISTIC COMPARISON  
IN SOUTH EAST ASIA AND THE  
PACIFIC

School of Oriental and African Studies  
University of London

[Sole Agents: Luzac & Company, Ltd., 46 Gt. Russell St., London, W.C. 1]

1963

*Price 42s. net*



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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.<sup>1</sup>

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.<sup>2</sup> My material comprises 1,002 Burmese, and 667 Arakanese, phonologically distinct Verbs; the former are a complete inventory of such Verbs for one speaker.<sup>3</sup> 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. *reit* throw a shadow, *pr̥eĩ* shiver, *θeĩ* string [a necklace].<sup>4</sup>

## 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

<sup>1</sup> Robert Shafer, 'Classification of the Sino-Tibetan Languages', *Word*, 11, 1955, p. 103.

<sup>2</sup> When used as formally established phonological or grammatical terms, Verb, Word, Syllable, etc., are distinguished by a capital letter.

<sup>3</sup> 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.

<sup>4</sup> Verbs are cited in the phonetic form appropriate to junction with the Particle Syllable *re/te* (A.) or *tɛ/dɛ* (B., *saĩ*).

in pitch behaviour as Tone-1 or Tone-2 Words, e.g. (r symbolizes a fricative, i.e. the r of the I.P.A.) :

Tone 1 (ˊ-, etc.) : A. pòre thaïre lootte ; B. pòde thaunde lootte ;  
 Tone 2 (-, etc.) : A. pore thaïre ; B. podè thaunde

(*pui'sañ* sends ; *thuiñ:sañ* is damp ; *lupsañ* works ; *puisañ* exceeds ; *thuiñsañ* sits).<sup>1</sup>

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.<sup>2</sup> 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) :

	(i)	(ii)	(i)	(ii)	
z :	A. prò:re	p̄ru:re:	B. { p̄jò:de	p̄ju:de:	(f)
			{ p̄jò:re	p̄ju:re:	
m :	A. sáõ:re	khoõ:re:	B. { sáõ:nde	khoõ:nde:	(f)
			{ sáõ:nne	khoõ:nne:	
k :	A. k̄raotte	t̄chootte	B. { t̄chaotte	t̄chootte	(s)
			{ t̄chaotde	t̄chootde	

(*prosañ* speaks ; *phrūsañ* is white ; *coñ'sañ* waits ; *khunsañ* jumps ; *khroksañ* fears ; *khyupsañ* 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).

<sup>1</sup> For Words in which the Verb is disyllabic, see 'Junction in Spoken Burmese', *Studies in Linguistic Analysis*, Oxford, 1957.

<sup>2</sup> 'Prosodic Analysis,' pp. 85-8.

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),  $\bar{g}$ . A g Syllable is invariably characterized by glottal-trill (or 'creaky') voice quality, a  $\bar{g}$  almost invariably by clear voice quality,<sup>1</sup> e.g.:

g : A. z 'pó ; m 'pṛáõ ; B. z 'pó ; m 'pjaon ;  
 $\bar{g}$  : A. z 'pō ; m 'praõ ; k paot ; B. z 'pō ; m 'pjaon ; k paot

(*po*' is light ; *phron*' is straight. *po* is plentiful ; *pron*: moves ; *pok* is pierced).

There is a regular correspondence of g and  $\bar{g}$  in Burmese with g and  $\bar{g}$  respectively in Arakanese, whence \*g and \* $\bar{g}$  can be established for A.-B., with reflexes g and  $\bar{g}$  respectively in either language.<sup>2</sup>

All Tone-2-Word Verbs are also  $\bar{g}$ , and so also are all Tone-1-Word k Verbs (1k); since, therefore, the components 2 and k imply  $\bar{g}$ , the component  $\bar{g}$  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  $\bar{g}$  (1zg, 1z $\bar{g}$ ; 1mg, 1m $\bar{g}$ ), 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  $\bar{g}$ , 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), ə, f (from fronting), and b (from back); the Arakanese comprises the four terms s, ə, f, and b.<sup>3</sup> 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.

<sup>1</sup> 'Prosodic Analysis,' p. 97, above.

<sup>2</sup> The only non-correspondence to be noted was of Arakanese  $\bar{g}$  in 'oõ, is overcast, with Burmese g, 'õon *uni*'.

<sup>3</sup> '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 (u o ə oo ; ao), and (ii), rounding of initial consonant if non-palatal (except Syllables in ao), e.g. A., *khə̃* jumps, *jə̃* is reduced ; B., *khə̃t* folds *khok*, *ṅə̃on* bows *niun'*, 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., *wə̃t* wears *wat*, *thon* harrow *thwan* ; A., *wə̃* overflow, *kwə̃t* is spotted ; from this sub-category of ə Syllable the b Syllable is distinguished in either language by potential initial glottal plosion (ʔ), e.g. A., *'u* lays an egg, *'aə̃* passes (an examination) ; B., *'oon* swarms round *un*, *'ə̃t* is musty *ok* (\*'ə̃- is not a possible Burmese, or \*'v- 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, ɲ, y, s, v) and the two-term Aspiration system (h, h̄) 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 -ŋg- in the two k-Juncture Piece examples *sokkoṅ:* (θə̃k'gə̃) *soklim'maṅ* he may well drink, *koṅ:koṅ:* (kãŋgə̃) well, and -t'th- in the t-Juncture Piece *lakthok* (lɛ(t')thə̃) *charā* assistant.<sup>1</sup>

The two-term Aspiration system (h, h̄) is also set up in order to associate voice or voicelessness as a feature of the vowel of the Verb Syllable (V ; V̄, or h), or, in the case of non-occlusive-initial Syllables, as a feature of the initial consonant (m versus m̄, l v. l̄, etc.), with the corresponding features of a preceding Syllable in Intraverbal Junction, e.g. h, -V(t')th- ; h̄, -k'g- ; as in lɛ(t')thə̃ and θə̃k'gə̃ respectively in the immediately preceding paragraph.<sup>2</sup>

Each b Verb is then classified as e.g. p, m, or s, or as h or h̄, 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).<sup>3</sup>

The two-term Palatalization system (y, ȳ) 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 (j ɲ pɲ, etc.) is associated with Syllable-initial lip-spreading, with relative frontness of vowel (y ɨ ə̃, etc.),

<sup>1</sup> For Intraverbal and Interverbal Junction see 'Prosodic Analysis', pp. 90-1, and for the Juncture system, *ibid.*, pp. 91-5.

<sup>2</sup> *ibid.*, pp. 91 ff.

<sup>3</sup> *ibid.*, p. 96.

and with relative lack of rounding (‘u o ‘oo, etc.); in  $\bar{y}$  Syllables initial non-palatalty (’ ph  $\theta$ , etc.) is associated with initial lip-rounding (except in a $\omega$  Syllables) and with relative backness of vowel (u o  $\text{ə}$ , etc.) :

y :	pj pj mj mj t $\epsilon$ (h) j $\epsilon$ n $\bar{n}$	‘u ‘o ‘ə ‘oo a $\omega$
$\bar{y}$ :	p(h) m $\bar{m}$ t(h) n $\bar{n}$ s(h) l $\bar{l}$ k(h) $\eta$ $\theta$ ’ h	u o $\text{ə}$ oo $\text{ə}$ , e.g.
y :	pj $\bar{u}$ <i>pru</i> does ; jaot <i>rok</i> arrives ; mj $\bar{a}$ <i>myo</i> floats ;	
$\bar{y}$ :	pu <i>pū</i> is hot ; ’ $\text{ə}$ on <i>on</i> matures ; m $\bar{o}$ <i>mo</i> is tired. <sup>1</sup>	

Since, however, the j, n, and y Juncture components correlate with the Palatalization component y, while the Juncture components t, n, c, l, k,  $\eta$ , s, and v correlate with the Palatalization component  $\bar{y}$ , either  $\bar{y}$  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 :

Juncture :	p	m	t	n	c	l	k	$\eta$
Palatalization :	$\bar{y}$ y	$\bar{y}$ y	( $\bar{y}$ )	( $\bar{y}$ )	( $\bar{y}$ )	( $\bar{y}$ )	( $\bar{y}$ )	( $\bar{y}$ )
Aspiration :	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$
	p ph	pj pj	m $\bar{m}$ mj $\bar{m}$ j	t th	n $\bar{n}$	s sh	l $\bar{l}$	k kh $\eta$ -

  

Juncture :	j	n	y	s	v
Palatalization :	(y)	(y)	(y)	( $\bar{y}$ )	( $\bar{y}$ )
Aspiration :	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$	$\bar{h}$ $\bar{h}$		$\bar{h}$ $\bar{h}$
	t $\epsilon$ t $\epsilon$ h	n $\bar{n}$	j $\epsilon$	$\theta$	’ h

(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,  $\Omega$ ) 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 :

	z		m, k
U :	closeness	u ;	U : half-closeness oo ;
O :	half-closeness	o ;	O : openness a $\omega$ ;
$\Omega$ :	half-openness	$\text{ə}$ <sup>2</sup>	

<sup>1</sup> *ibid.*, pp. 97-8.

<sup>2</sup> *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  $\Omega$ : 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  $\Omega$ .

### Arakanese

Arakanese b Syllables can also be classified in terms of four further systems, Juncture, Rhotacization, Aspiration, and Palatalization, two of which, Aspiration (h,  $\bar{h}$ ) and Palatalization (y,  $\bar{y}$ ), 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 r<sup>1</sup>; 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, \*wa $\bar{o}$ , \*woot).

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

The exponents of these terms are, then :

r : labiality/velarity and alveolar friction    pr p $\bar{r}$  mr m $\bar{r}$  kr k $\bar{r}$  nr

$\bar{r}$  : labiality, velarity, etc. and no alveolar

friction, e.g. p(j) m(j) kh  $\theta$  '

e.g.

r : pr $\bar{u}$  is white ;    k $\bar{r}$ aot terrifies ;    nro resents ;

$\bar{r}$  : pu is hot ;    mj $\bar{o}$  floats ;    raot arrives.

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

<sup>1</sup> 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 pamb $\bar{e}$ (re), 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.

<sup>2</sup> r has been used to symbolize an Arakanese alveolar fricative (I.P.A.  $\bar{r}$ ) 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 :

Junc. :		p		m		t		n		c		y		s
Pal./Rhot. :		' $\bar{y}\bar{r}$	$y(\bar{r})$	$r(\bar{y})$	' $\bar{y}\bar{r}$	$y(\bar{r})$	$r(\bar{y})$	( $\bar{y}\bar{r}$ )	( $\bar{y}\bar{r}$ )	( $\bar{y}\bar{r}$ )	$y(\bar{r})$	( $\bar{y}\bar{r}$ )		
Asp. :		$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$
		p ph	pj pj	pr pr	m m	mj mj	mr mr	t th	n n	s sh	j s			θ

Junc. :		l		r		k		ŋ		j		ɲ		v
Pal./Rhot. :		( $\bar{y}\bar{r}$ )	( $\bar{y}\bar{r}$ )	' $\bar{r}(\bar{y})$	$r(\bar{y})$	' $\bar{r}(\bar{y})$	$r(\bar{y})$	$y(\bar{r})$	$y(\bar{r})$	( $\bar{y}\bar{r}$ )				
Asp. :		$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$
		l l	r r	k kh	kr kr	ŋ -	ŋr -	ts tch	ɲ ɲ	' h				

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  $\bar{h}$ , whence \*h and \* $\bar{h}$ , with h and  $\bar{h}$  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.	$p\bar{y}\bar{r}$	$py(\bar{r})$	$pr(\bar{y})$	$m\bar{y}\bar{r}$	$my(\bar{r})$	$mr(\bar{y})$	$t(\bar{y}\bar{r})$	$n(\bar{y}\bar{r})$	$c(\bar{y}\bar{r})$
B.	$p\bar{y}$	$py$	$py$	$m\bar{y}$	$my$	$my$	$t(\bar{y})$	$n(\bar{y})$	$c(\bar{y})$
A.-B.	* $p\bar{y}$	* $py$	* $pr$	* $m\bar{y}$	* $my$	* $mr$	* $t(\bar{y})$	* $n(\bar{y})$	* $c(\bar{y})$

A.	$l(\bar{y}\bar{r})$	$r(\bar{y}\bar{r})$	$k(\bar{y})\bar{r}$	$k(\bar{y})r$	$\eta(\bar{y})\bar{r}$	$\eta(\bar{y})r$	$j(\bar{y}\bar{r})$	$\eta(\bar{y}\bar{r})$
B.	$l(\bar{y})$	$y(\bar{y})$	$k(\bar{y})$	$j(\bar{y})$	$\eta(\bar{y})$	$\eta(\bar{y})$	$j(\bar{y})$	$\eta(\bar{y})$
A.-B.	* $l(\bar{y})$	* $r$	* $k\bar{y}$	* $kr$	* $\eta\bar{y}$	* $\eta r$	* $j(\bar{y})$	* $\eta(\bar{y})$

A.	$y(\bar{y}\bar{r})$	$s(\bar{y}\bar{r})$	$v(\bar{y}\bar{r})$
B.	$y(\bar{y})$	$s(\bar{y})$	$v(\bar{y})$
A.-B.	* $y(\bar{y})$	* $s(\bar{y})$	* $v(\bar{y})$

From the above correspondences it will be seen that (i), the Arakanese Palatalization component  $y(\bar{r})$  regularly corresponds to the Burmese Palatalization component y, whence \*y ; (ii), Burmese  $\bar{y}$  regularly corresponds to Arakanese  $\bar{y}\bar{r}$ , whence \* $\bar{y}$  ; and (iii), Arakanese  $r(\bar{y})$  corresponds to Burmese y, whence \*r.

The Arakanese phonematic 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) :

A.-B.	A.		B.	
(b1)gp̄ȳhOz	(b1ȳ)gp̄r̄hOz	`pó	(b1)gp̄ȳhOz	`pó <i>pui'</i>
(b1)ḡmȳhΩ(z)	(b1r̄)ḡmȳhΩ(z)	`mjo	(b1)ḡmȳhΩ(z)	`mjo <i>myo</i>
(b1ȳ)ḡthUz	(b1r̄ȳ)ḡthUz	`thu	(b1ȳ)ḡthUz	`thu <i>thū:</i>
(b1ȳ)ḡnhOz	(b1r̄ȳ)ḡnhOz	`no	(b1ȳ)ḡnhOz	`no <i>nui:</i>
(bḡȳ)2chOm	(bḡr̄ȳ)2chOm	_shaō	(bḡȳ)2chOm	_shaon <i>choñ</i>
(bḡȳ)21hUz	(bḡr̄ȳ)21hUz	_lu	(bḡȳ)21hUz	_lu <i>lhū</i>
(b1r̄)grhUm	(b1r̄ȳ)grhUm	`róō	(b1y)gyhUm	`són <i>rhum'</i>
(b1ḡ)krhOk	(b1ḡȳ)krhOk	`kraot	(b1ḡy)jhOk	`tshaot <i>khrok</i>
(b1)ḡnr̄hOz	(b1ȳ)ḡnr̄hOz	`no	(b1y)ḡnr̄hOz	`no <i>nirui:</i>
(b1ḡy)jhUk	(b1ḡr̄y)jhUk	`tshoot	(b1ḡy)jhUk	`tshoot <i>khyup</i>
(b1y)ḡnhOm	(b1r̄y)ḡnhOm	`naō	(b1y)ḡnhOm	`naon <i>ñon:</i>
(b1y)gyhΩ(z)	(b1r̄y)gyhΩ(z)	`só	(b1y)gyhΩ(z)	`só <i>lhyo'</i>
(b1ȳ)ḡsUm	(b1r̄ȳ)ḡsUm	`θoō	(b1ȳ)ḡsUm	`θoon <i>sum:</i>
(bḡȳ)2v̄hOm	(bḡr̄ȳ)2v̄hOm	_`aō	(bḡȳ)2v̄hOm	_`aon <i>on</i>

(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, -eun, -eit; A. -i, -eī, -eit; 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 ŋ) immediately precede the syllabic vowel, and there are therefore no sequences \*kV or \*ŋV. In fact, in Burmese, initial velarity is not a feature of s Syllables at all<sup>1</sup>; but in Arakanese, velarity is a feature of the initial sequences kr and nr, and, though only in Nouns, kw, e.g. kri, nrē, kwī (B. tsi *kri:*, neun *nrim*, kwe *khwe:*), 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 (-it, so named from centralized) by the fact that while, in s Syllables, initial labiality is either (i), non-palatalized

<sup>1</sup> U Tin Maung volunteered two exceptions: keun *kyin:/kin:* 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 teen.

(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. *pett*, *pit* shut, *m̄eun mhins* shut [eyes], or (ii), palatalized or non-palatalized equally (pj mj ; p m), in sz Syllables, e.g. *pji phre* untie, *mji mrañs*, *pi prīs* finish, in c Syllables, on the other hand, initial labiality must be palatalized, e.g. *pjūt pac* throw, *mjūt 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 η (Juncture), a difference that reflects the absence of velarity (k η) from the permitted initial phonetic features of the s Syllable, and that the Palatalization system associates initial palatality (t̄s p̄ j̄ s̄, and, in sz Syllables, pj mj) with relative closeness of vowel (i e), through the y term, and non-palatality (e.g. p n θ s) with relative openness, through the ȳ 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 ȳ (there are no sequences \*pj̄e and \*mj̄e).

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

(i) sm and sk Syllable (-eun, -eut)

Junc.	p	m	t	n	c	l	j	ɲ	y	s	v
Pal.	(ȳ)	(ȳ)	(ȳ)	(ȳ)	(ȳ)	(ȳ)	(y)	(y)	(y)	(ȳ)	(ȳ)
Asp.	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>
	p ph	m m̄	t th	n ɲ	s sh	l ɭ	t̄s t̄sh	ɲ ɲ̄	j̄ s̄	θ	' h

(ii) sz Syllable (-i)

Junc.	p		m		t	n	c	l	j	ɲ	y	s	v
Pal.	<u>ȳ y</u>		<u>ȳ y</u>		(ȳ)	(ȳ)	(ȳ)	(ȳ)	(y)	(y)	(y)	(ȳ)	(ȳ)
Asp.	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>	<u>h h</u>
	p ph	pj pj	m m̄	mj -	t th	n ɲ	s sh	l ɭ	t̄s t̄sh	ɲ ɲ̄	j̄ s̄	θ	' -

Only one possible vowel is appropriate to the s Syllable, whether sz, sm, or sk : sz, i ; sm/sk, e. 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.

sz Syllables can be classified in terms of the Juncture system not only as being also p, m, t, n, c, l, r, k, ŋ, j, ɲ, 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  $\bar{y}$  and the Rhotacization component  $\bar{r}$  (there is no initial sequence \*wr).

The Palatalization system (y,  $\bar{y}$ ) 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 (tɕ) with labio-palatality (ɲ) through its y term, but, through its  $\bar{y}$  term, non-palatality (e.g. t, ɲ, m) with labio-velarity (w), e.g.

y : tɕi feeds ;

$\bar{y}$  : t̥wi finds ; ɲ̄wī warms.

Of the Juncture components only j, ɲ, 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/ī) but not for sm or sk (-eī, -et).

The Nasalization system comprises the two terms n and  $\bar{n}$ , and is designed to account for the syntagmatic association of nasality of vowel, in conjunction with a relatively open vowel quality (i), with nasality as an initial-consonant feature (m m̄w n ɲ n̄w ɲ̄w ɲ j̄ ɲ̄r), through the n term, and non-nasality of vowel, together with relative closeness, with non-nasality as an initial feature, through the  $\bar{n}$  term, e.g.:

n : m̄i asks ; ɲ̄wī warms ; ɲ̄rī grumbles (B. me:, nhwe:, ɲrī:)

$\bar{n}$  : pi gives ; kri is big ; θwi gets dry (B. pe:, krī:, swe').

The n term correlates exclusively with the m, n, ɲ, and ɳ Juncture components, and the  $\bar{n}$  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,  $\bar{w}$ ) deals with syntagmatically related labial features : the w term relates a non-syllabic rounded vowel (w w̄ u ũ) to lip-rounding as an initial-consonant feature, e.g. θ, m, t, and to relative retraction of vowel (i) ; the  $\bar{w}$  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 : ɲ̄wī warms ; wī is far ; tɕi feeds (B. nhwe:, we:, krwe)

$\bar{w}$  : ɲi slices ; pi gives ; θi dies (B. lhī, pe:, se)

All the Juncture components except w correlate with the Labiovelarization component  $\bar{w}$  ; all of them except l, ɲ, and v also correlate with w ; it is only, therefore, from formulae containing l, ɲ, or v that  $\bar{w}$  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 Inter-verbial Junction :

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

Junc. :	p(ȳ)	m(ȳ)	t(ȳ)	n(ȳ)	c(ȳ)	l(ȳ)	r(ȳ)
Rhot.:	$\bar{r}$ r	$\bar{r}$ r	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )
Asp.:	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h
	p ph - pʃ	m m̄ mr -	t th	n ŋ	s sh	l ʎ	r -

Junc.:	k(ȳ)	ŋ(ȳ)	j(y)	ɲ(y)	y(y)	s(ȳ)	v(ȳ)
Rhot.:	(r)	(r)	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )
Asp.:	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h
	kr -	ŋr -	tɛ tɛh	ɲ -	j ɛ	θ -	h

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

Junc.:	p(ȳ)	m(ȳ)	t(ȳ)
Rhot.:	$\bar{r}$ r	$\bar{r}$ r	( $\bar{r}$ )
Lab.:	$\bar{w}$ w	$\bar{w}$ w	$\bar{w}$ w
Asp.:	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h
	p - - <sup>1</sup> -	br pʃ - -	m - mw m̄w - <sup>1</sup> - - <sup>1</sup> -

Junc.:	n(ȳ)	c(ȳ)	l(ȳ)	r(ȳ)	k(ȳ)
Rhot.:	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ ) r
Lab.:	$\bar{w}$ w	$\bar{w}$ w	( $\bar{w}$ )	$\bar{w}$ w	(w) $\bar{w}$ w
Asp.:	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h
	n ŋ nw ŋw	s sh - sw	l ʎ	r - <sup>2</sup> rw ʃw - kw <sup>1</sup> kr - krw -	

Junc.:	ŋ(ȳ)	j(y)	ɲ(y)	y(y)	w(ȳ)	s(ȳ)	v(ȳ)
Rhot.:	$\bar{r}$ r	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )	( $\bar{r}$ )
Lab.:	(w) ( $\bar{w}$ )	$\bar{w}$ w	( $\bar{w}$ )	( $\bar{w}$ )	(w) $\bar{w}$ w	( $\bar{w}$ )	( $\bar{w}$ )
Asp.:	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h $\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h	$\bar{h}$ h
	- - ŋr -	tɛ tɛh tɛy - <sup>1</sup>	ɲ ɲ - ɛ <sup>2</sup>	w -	θ θw - <sup>2</sup>		

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

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

<sup>1</sup> There are, however, Noun examples : p̄rwh̄ p̄wi ringworm, mr̄wh̄ m̄fi earth, mr̄wh̄ m̄fi snake, (w)k̄r̄h̄ k̄wi dog, jwh̄ t̄ɛ̄ɛ̄i sweat.

<sup>2</sup> ei, be, the only Verb example in his dialect, Saw Hla Pru considered to be a Burmese loanword (*rhi*), for which the correct Arakanese form was ʃi in Akyab but hi in the country districts. Cf. also the Noun example ʃi [personal name].

In the *prw̄h* Syllable, and in this type of Syllable alone, *voice* is a Syllable-initial feature, even in Interverbal Junction, e.g. *bri*, *finish*, *run* (B. *prī:* 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 *ə* 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	h̄	y(r̄)	r	ȳr̄
B.	h	h̄	y	y	ȳ
A.-B.	*h	*h̄ <sup>1</sup>	*y	*r	*ȳ

The Juncture components correspond as follows :

#### (i) *sm* and *sk* Syllable

A.	p̄r	pr	m̄r	mr	t	n	c	l	r	k(r)	ŋ(r)	j	ɲ
B.	p	— <sup>2</sup>	m	m	t	n	c	l	y	j	ɲ	j	ɲ
A.-B.	*p̄y		*m̄y	*mr	*t	*n	*c	*l	*r	*k	*ŋ	*j	*ɲ
A.	y	s	v										
B.	y	s	v										
A.-B.	*y	*s	*v, e.g.:										

A.-B.	A.	B.				
*( <i>ḡ</i> )2sp̄r̄hm	( <i>ḡ</i> )2sp̄r̄hm	_peī	( <i>ḡ</i> )2sp̄hm	_peun	<i>pin</i>	is thin
*( <i>ḡ</i> )2sm̄r̄hm	( <i>ḡ</i> )2sm̄r̄hm	_meī	( <i>ḡ</i> )2sm̄hm	_meun	<i>mhin</i>	is dim
*( <i>ḡ</i> )2smr̄hm	( <i>ḡ</i> )2smr̄hm	_mreī	( <i>ḡ</i> )2sm̄hm	_meun	<i>mrin</i>	enjoys
*( <i>lḡ</i> )sth̄k	( <i>lḡ</i> )sth̄k	`teit	( <i>lḡ</i> )sth̄k	`teit	<i>tit</i>	is quiet
*( <i>lḡ</i> )sr̄h̄k	( <i>lḡ</i> )sr̄h̄k	`reit	( <i>lḡ</i> )syh̄k	`jeit	<i>rit</i>	reaps
*( <i>l</i> )ḡsk̄hm	( <i>l</i> )ḡsk̄hm	`kreī	( <i>l</i> )ḡsj̄hm	`tceun	<i>krim:</i>	frightens
*( <i>ḡ</i> )2sḡhm	( <i>ḡ</i> )2sḡhm	_preī	( <i>ḡ</i> )2sp̄hm	_neun	<i>nrin</i>	is quiet
*( <i>lḡ</i> )sj̄hk	( <i>lḡ</i> )sj̄hk	`tcheit	( <i>lḡ</i> )sj̄hk	`tcheit	<i>khyit</i>	hooks
*( <i>lḡ</i> )sp̄h̄k	( <i>lḡ</i> )sp̄h̄k	`neit	( <i>lḡ</i> )sp̄h̄k	`neit	<i>ñit</i>	nods
*( <i>ḡ</i> )2syhm	( <i>ḡ</i> )2syhm	_seī	( <i>ḡ</i> )2syhm	_ceun	<i>rhin</i>	is hot

#### (ii) *sz* Syllable

A.	prw̄	m̄r̄w̄	t̄w̄	n̄w̄	c̄w̄	l	k(r)w̄	ŋ(r)w̄	jw̄	ɲ	y <sup>1</sup>	sw̄	v
B.	py	m̄y	t	n	c	l	j	ɲ	j	ɲ	y	s	v
A.-B.	*pr	*m̄y	*t	*n	*c	*l	*k	*ɲ	*j	*ɲ	*y	*s	*v

<sup>1</sup> One exception has been noted : A. *h*, *phet* shut ; B. *h̄*, *pett pit*.

<sup>2</sup> The sole Arakanese example of *pr*, *pr̄ēī*, *shiver*, has no corresponding Burmese Verb form ; but compare *phin'phin'* (*phéumbéi*) *tunsañ*, it trembles.

e.g.:

A.-B.	A.		B.			
*( $\bar{g}$ )2sprh $\bar{z}$	( $\bar{g}\bar{n}$ )2spr $\bar{w}h\bar{z}$	$\bar{p}r\bar{i}$	( $\bar{g}$ )2spyh $\bar{z}$	$\bar{p}j\bar{i}$	<i>phre</i> <sup>2</sup>	unties
*( $\bar{1}$ )gsm $\bar{y}h\bar{z}$	( $\bar{1}n$ )gsm $\bar{r}w\bar{h}z$	$\bar{m}\bar{i}'$	( $\bar{1}$ )gsm $\bar{y}h\bar{z}$	$\bar{m}\bar{i}$	<i>mi</i>	catches
*( $\bar{g}$ )2sn $\bar{h}z$	( $\bar{g}\bar{n}$ )sn $\bar{w}h\bar{z}$	$\bar{n}\bar{i}$	( $\bar{g}$ )2sn $\bar{h}z$	$\bar{n}\bar{i}$	<i>nī</i>	is red
*( $\bar{1}$ ) $\bar{g}sk\bar{h}z$	( $\bar{1}\bar{n}$ ) $\bar{g}skr\bar{w}h\bar{z}$	$\bar{k}r\bar{i}$	( $\bar{1}$ ) $\bar{g}sj\bar{h}z$	$\bar{t}\bar{e}\bar{i}$	<i>krī:</i>	is big
*( $\bar{1}$ ) $\bar{g}sq\bar{h}z$	( $\bar{1}n$ ) $\bar{g}sq\bar{r}w\bar{h}z$	$\bar{q}\bar{r}\bar{i}$	( $\bar{1}$ ) $\bar{g}sq\bar{h}z$	$\bar{n}\bar{i}$	<i>nrī:</i>	grumbles
*( $\bar{g}$ )2sjh $\bar{z}$	( $\bar{g}\bar{n}$ )2sj $\bar{w}h\bar{z}$	$\bar{t}\bar{e}\bar{h}\bar{i}$	( $\bar{g}$ )2sjh $\bar{z}$	$\bar{t}\bar{e}\bar{h}\bar{i}$	<i>khyī</i>	lifts
*( $\bar{g}$ )2sph $\bar{z}$	( $\bar{g}\bar{n}$ )2sph $\bar{z}$	$\bar{j}\bar{i}$	( $\bar{g}$ )2sph $\bar{z}$	$\bar{j}\bar{i}$	<i>ñhī</i>	stinks
*( $\bar{1}$ )gsyh $\bar{z}$	( $\bar{1}\bar{n}$ )gsyh $\bar{z}$	$\bar{e}\bar{i}$ <sup>1</sup>	( $\bar{1}$ )gsyh $\bar{z}$	$\bar{e}\bar{i}$	<i>rhi</i>	is

There are six Burmese s Syllables that correspond not to Arakanese s Syllables but to ə Syllables in the V term H (Gk. *ēta*) :

$\bar{t}\bar{e}\bar{i}$	<i>krañ'</i>	looks	(A. <i>kré</i> ) ;	$\bar{t}\bar{e}\bar{i}$	<i>krañ</i>	is clear	(A. <i>kre</i> )
$\bar{j}\bar{i}$	<i>ray</i>	laughs	(A. <i>re</i> ) ;	$\bar{m}\bar{j}\bar{i}$	<i>mrañ:</i>	tastes	(A. <i>mre</i> )
$\bar{m}\bar{j}\bar{i}$	<i>mrañ</i>	neighs	(A. <i>mre</i> ) ;	$\bar{s}\bar{i}$	<i>cañ</i>	abounds	(A. <i>se</i> )

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

#### ə SYLLABLE

In order first to dispose of the correspondence of Arakanese s to Burmese ə Syllables (-e, -ε, -a ; -in, -an, -on ; -et, -at, -ot) mentioned in the preceding paragraph it is convenient to consider first those ə Syllables which are also classifiable in terms of the Quality system as z, əz Syllables (-e, -ε, -a) ; for these outstanding correspondences are all correspondences involving z Syllables (A. sz, B. əz) ; the əm and the ək Syllable are dealt with subsequently (pp. 126-30).

#### əz Syllable

To distinguish the Burmese əz 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. əz, *pe pe:*, *wε way*, *θwa swā:* ; fm, *thain thuin*, fk, *laut luik* ; c(k), *pjt pac*. The Arakanese əz Syllable

<sup>1</sup> Page 119, note 2. The Akyab form  $\bar{r}\bar{i}$  and the rural Arakanese  $\bar{h}\bar{i}$  would give correspondences :

*( $\bar{1}$ )gsrh $\bar{z}$	( $\bar{1}\bar{n}$ )gsr $\bar{w}h\bar{z}$	$\bar{r}\bar{i}$	( $\bar{1}$ )gsyh $\bar{z}$	$\bar{e}\bar{i}$	<i>rhi</i>	is
*( $\bar{1}$ )gsvh $\bar{z}$	( $\bar{1}\bar{n}$ )gsv $\bar{h}z$	$\bar{h}\bar{i}$	"	"	"	"

<sup>2</sup> Arakanese  $\bar{b}r\bar{i}$ , is finished, an example of the Rhotacization component r, corresponds not to a Burmese y Syllable (\* $\bar{p}j\bar{i}$ ) but, irregularly, to a  $\bar{y}$  Syllable,  $\bar{p}\bar{i}$  *prī:* ; but the Burmese reading-style pronunciation  $\bar{p}j\bar{i}$  would give a regular correspondence \*( $\bar{1}$ ) $\bar{g}spr\bar{h}z$ .



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. *əz*, *la goes*, *swe pulls*; *fm*, *thā sits*; *fk*, *lat follows*, *pat throws*.

### Burmese

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

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

*w*: *wɛ we:*;      *tsɥ̄ɛ khyway'*;      *θwa swā:*;  
*w̄*: *jɛ re:*;      *ɲɛ n̄ay*;      *já ra*

All the Juncture components except *w* correlate with *w̄*; all the Juncture components except *ɲ* and *v* correlate with the Labiovelarization component *w*.

This new system, Labiovelarization, affects the statements of exponency of the *y* and *ȳ* terms of the Burmese Palatalization system in much the same way as it affected the Arakanese (p. 118): in *w̄* Syllables the *y* term associates initial palatality (*ɲj mj lj tɛ j ɛ ɲ*) with lip-spreading and relative frontness of vowel (*ɛ ɛ ɑ*), while in *w* Syllables its role is to associate initial palatality (*tɛ j ɛ*) with labio-palatality (*ɥ*); in the *w̄* Syllable the *ȳ* term associates non-palatality (e.g. *p m s* ' with relative backness of vowel (*ɛ ɛ ɑ*), and in *w* Syllables it associates non-palatality (e.g. *p m s*, but not ' ) with labiovelarity (*w*), e.g.:

*y*: (*w̄*) *ɲjá pra*;      *já ra*;      (*w*) *tsɥ̄ɑ krwa*;      *jɥɑ rwā*;  
*ȳ*:      *ɲɥ pā*;      *thá tha*;      *pɥɑ phwā:*;      *θwa swā:*;

but because of their correlation with the Juncture components, *y* and *ȳ* 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 *əz* Syllables, as they appear in Interwordal Junction, are as follows:

Junc.:	p		m		t(ȳ)			
Pal./Lab.:	<i>ȳw̄</i>	<i>y(w̄)</i>	<i>w(ȳ)</i>	<i>ȳw̄</i>	<i>y(w̄)</i>	<i>w(ȳ)</i>	<i>w̄</i>	<i>w</i>
Asp.:	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>	<i>h̄ h̄</i>
	<i>p ph</i>	<i>ɲj ɲj</i>	<i>pw pɥ</i>	<i>m ɲ</i>	<i>mj ɲj</i>	<i>mw ɲɥ</i>	<i>t th</i>	<i>tw tɥ</i>

Junc.:	$\overline{n(\bar{y})}$	$\overline{c(\bar{y})}$	$\overline{l}$	$\overline{k(\bar{y})}$	$\overline{\eta(\bar{y})}$
Pal./Lab.:	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$	$\overline{\bar{y}\bar{w} \quad y(\bar{w}) \quad (\bar{y})w}$	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$
Asp.:	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$
	n ṅ nw ṅw	s sh sw sw	l ḷ ḷj - lw ḷw	k kh kw kw	ŋ ṅ ṅw -

Junc.:	$\overline{j(y)}$	$\overline{\eta(y)}$	$\overline{y(y)}$	$\overline{w(\bar{y})}$	$\overline{s(\bar{y})}$	$\overline{v(\bar{y}\bar{w})}$
Pal./Lab.:	$\overline{\bar{w} \quad w}$	$\overline{(\bar{w})}$	$\overline{\bar{w} \quad w}$	$\overline{(w)}$	$\overline{\bar{w} \quad w}$	$\overline{(\bar{y}\bar{w})}$
Asp.:	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h}$		$\overline{h \quad h}$
	tṣ tṣh tṣy tṣṷ	ŋ ṅ	j ṣ jṷ ṣṷ	w -	θ θw	' h

A phonematic system, a three-term V system (E, H, A), is statable for əz Syllables, the exponents of each term being :

E : half-closeness (ɛ e ɛ) ; H : half-openness (ɛ ε ɛ) ; A : openness (a ɑ 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, ḥ), Palatalization (y, ṷ), Rhotacization (r, ṷ), Labiovelarization (w, ṷ), and Juncture, but differ from them phonetically in having the following Syllable initials : pṷ mṷ ṷj lw ḷw k kh jṷ and ṣṷ, 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 ṷ (pṷ mṷ ṷj), l and y with w as well as with ṷ (lw ḷw jṷ ṣṷ), and k with ṷ as well as with w (k kh) :

Junc.:	$\overline{p}$	$\overline{m}$
Rhot.:	$\overline{\bar{r} \quad r(\bar{y}\bar{w})}$	$\overline{\bar{r} \quad r(\bar{y}\bar{w})}$
Pal./Lab.:	$\overline{\bar{y}\bar{w} \quad y(\bar{w}) \quad (\bar{y})w}$	$\overline{\bar{y}\bar{w} \quad y(\bar{w}) \quad (\bar{y})w}$
Asp.:	$\overline{h \quad h} \quad \overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h} \quad \overline{h \quad h}$
	- ph pṷ - pṷ pṷ pṷ pṷ	m ṷ mṷ ṷj mw ṷw mr -

Junc.:	$\overline{t(\bar{r}\bar{y})}$	$\overline{n(\bar{r}\bar{y})}$	$\overline{c(\bar{r}\bar{y})}$	$\overline{l(\bar{r}\bar{y})}$	$\overline{r(\bar{r}\bar{y})}$
Lab.:	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$	$\overline{\bar{w} \quad w}$
Asp.:	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$	$\overline{h \quad h} \quad \overline{h \quad h}$
	t th tw tw	n - <sup>1</sup> nw -	s sh sw sw	l ḷ ḷw ḷw	r ṷ rw -

Junc.:	k( $\bar{y}$ )		$\eta(\bar{y})$		j( $\bar{r}y$ )	
Rhot.:	$\bar{r}$ r		$\bar{r}$ r			
Lab.:	$\bar{w}$ w	$\bar{w}$ w	$\bar{w}$ w	( $\bar{w}$ )	$\bar{w}$ w	
Asp.:	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$
	k kh    kw kw	kr -    krw křw	$\eta$ $\eta$ - <sup>1</sup> -	$\eta r$ -	ts tch    teq teq	
Junc.:	n( $\bar{r}y$ )	y( $\bar{r}y$ )	w( $\bar{r}y$ )	s( $\bar{r}y$ )	v( $\bar{r}y$ )	
Lab.:	( $\bar{w}$ )	$\bar{w}$ w	(w)	$\bar{w}$ w	( $\bar{w}$ )	
Asp.:	$\bar{h} \bar{h}$	$\bar{h} \bar{h}$ $\bar{h} \bar{h}$	$\bar{h} \bar{h}$		$\bar{h} \bar{h}$	
	n $\eta$	j s    jç sç	w w	$\theta$ $\theta w$	' h	

A two-term phonematic V system (H, A) is established for Arakanese əz Syllables, the exponents of which are :

H : half-closeness (ə e e) ; A : openness (ə a 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 \*(ə)wE(z), with s as the Arakanese reflex of \*E, and (ə)E as the Burmese ; some Arakanese s $\bar{w}$ (z) Syllables, other than those considered on pp. 120-1, correspond to Burmese (ə) $\bar{w}$ E(z) Syllables, whence \* $\bar{w}$ E.

The correspondences of the Aspiration (h,  $\bar{h}$ ), Palatalization (y,  $\bar{y}$ ), and Rhotacization (r,  $\bar{r}$ ) components are as stated for the \*s correspondences (p. 120) ; the Arakanese Labiovelarization components w and  $\bar{w}$  correspond to the Burmese w and  $\bar{w}$  respectively, giving \*w and \* $\bar{w}$ .<sup>2</sup> The Juncture components too do not differ significantly in their correspondences from those stated for the \*s correspondences : there are no examples of \* $\eta$  (A.  $\eta r$ , B.  $\eta$ ), \* $\eta$  (A.  $\eta$ , B.  $\eta$ ), or \*y (A. y, B. y) ; but there are in addition \*r (A. r, B. y) and \*w (A. w, B. w) ; e.g.:

A.-B.	A.	B.			
* $(1)\bar{g}\bar{p}\bar{y}\bar{w}\bar{h}E$	$(1\bar{y})\bar{g}\bar{s}\bar{p}\bar{r}\bar{w}\bar{h}(z)$	`pi	$(1\bar{ə})\bar{g}\bar{p}\bar{y}\bar{w}\bar{h}E(z)$	`pe	pe: gives
* $(1)\bar{g}\bar{p}\bar{r}\bar{w}\bar{h}E$	$(1\bar{y})\bar{g}\bar{s}\bar{p}\bar{r}\bar{w}\bar{h}(z)$	`bri	$(1\bar{ə}\bar{w})\bar{g}\bar{p}\bar{y}\bar{h}E(z)$	`pje	pre: runs
* $(\bar{g})2m\bar{y}whE$	$(\bar{g}\bar{y})2sm\bar{r}wh(z)$	$\bar{m}\bar{w}\bar{i}$	$(\bar{g}\bar{ə}\bar{y})2mwhE(z)$	$\bar{m}\bar{w}e$	mhwe stirs
* $(1)\bar{g}cwhE$	$(1\bar{r}\bar{y})\bar{g}scwh(z)$	`swi	$(1\bar{ə}\bar{y})\bar{g}cwhE(z)$	`swe	chwe rots
* $(1)\bar{g}\bar{r}\bar{w}\bar{h}E$	$(1\bar{r}\bar{y})\bar{g}\bar{s}\bar{r}\bar{w}\bar{h}(z)$	`ri	$(1\bar{ə}\bar{y})\bar{g}\bar{y}\bar{w}\bar{h}E(z)$	`je	re: writes

<sup>1</sup> There are Noun examples ;  $(1\bar{ə}\bar{r}\bar{y})\bar{g}\bar{n}\bar{w}\bar{h}H(z)$  `ne whistle ;  $(\bar{g}\bar{ə}\bar{r}\bar{y})2\bar{n}\bar{w}\bar{h}H(z)$   $\eta w e$  silver.

<sup>2</sup> In Arakanese  $m\bar{r}\bar{w}\bar{i}$ , snake, the Rhotacization component r corresponds not to the Burmese Palatalization component y (in \*mjçe) but, irregularly, to  $\bar{y}$  : mwe mrwe.

A.-B.	A.		B.			
*(1)grwhE	(1r̄y)gsrwh(z)	ṛwi	(1əy)gywhE(z)	ṛwé	<i>rhwe'</i>	moves
*(ḡ)2kwh̄E	(ḡr̄y)2skwh̄(z)	ḡkri	(ḡəy)2jwh̄E(z)	ḡtse	<i>kre</i>	is crushed
*(ḡ)2jwh̄E	(ḡr̄y)2sjwh̄(z)	ḡtsei	„	„	<i>kye</i>	gets even
*(ḡ)2wh̄E	(ḡr̄w)2swh̄(z)	ḡwi	(ḡəȳw)2wh̄E(z)	ḡwe	<i>we</i>	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 (ə)E Syllable (-e) corresponds not to an Arakanese s Syllable (-i) but to an Arakanese ə Syllable in H (-e), are therefore taken to be irregular :

<i>ne</i>	<i>ne:</i>	gapes at	(A. <i>ne</i> ) ;	<i>se</i>	<i>rhañ</i>	is long	(A. <i>re</i> ) ;
<i>pjé</i>	<i>prañ'</i>	is filled	(A. <i>pré</i> ) ;	<i>pjé</i>	<i>phrañ'</i>	fills	(A. <i>pré</i> ) ;
<i>pje</i>	<i>phre</i>	answers	(A. <i>pre</i> ) ;	<i>kwé</i>	<i>whé'</i>	butts	(A. <i>wé</i> )

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

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

<i>ṁre</i>	tastes	(B. <i>ṁji mrañ:</i> ) ;	<i>ṁre</i>	neighs	(B. <i>ṁji mrañ</i> ) ;
<i>ṁse</i>	abounds	(B. <i>ṁsi cañ</i> ) ;	<i>ṁre</i>	laughs	(B. <i>ṁji ray</i> ) ;
<i>ṁkré</i>	looks	(B. <i>ṁtsei krañ'</i> ) ;	<i>ṁkre</i>	is clear	(B. <i>ṁtsei krañ'</i> )

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 ñ in the orthography : Burmese forms in -ñ are notoriously inconsistent, as these eight examples show, and variable (*prañ'* and *prañ*, for example, are pronounced with e by some speakers and with i by others). The Arakanese pronunciation of the corresponding forms seems to be remarkably uniform (-e).

#### A.-B. : \*(ə)H(z) AND \*(ə)A(z) CORRESPONDENCES

Apart from the exceptions considered in the last three paragraphs Arakanese əz Syllables in H and A (-e, -a) correspond respectively to Burmese əz Syllables in H and A (-e, -a), 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 (ə)H and (ə)A Syllables too ; these last also afford examples of the correspondences lacking in the \*E type : \*η (A. η, B. η), \*ɲ (A. ɲ, B. ɲ), \*y (A. y, B. y) ; e.g.

A.-B.	A.		B.	
* $(1)gp\bar{y}\bar{w}hH$	$(1\bar{\alpha})gp\bar{r}\bar{y}\bar{w}hH(z)$	`phé	$(1\bar{\alpha})p\bar{y}\bar{w}hH(z)$	`phé <i>phai'</i>
* $(1)gp\bar{y}\bar{w}hA$	$(1\bar{\alpha}\bar{r}\bar{y})gp\bar{w}hA(z)$	`pwá	$(1\bar{\alpha}\bar{y})gp\bar{w}hA(z)$	`pwá <i>pwa</i>
* $(1)gpr\bar{h}A$	$(1\bar{\alpha}\bar{y}\bar{w})gpr\bar{h}A(z)$	`prá	$(1\bar{\alpha}\bar{w})gpy\bar{h}A(z)$	`pja <i>pra</i>
* $(1)\bar{g}m\bar{y}\bar{w}hH$	$(1\bar{\alpha}\bar{r}\bar{y})\bar{g}m\bar{w}hH(z)$	`mwe	$(1\bar{\alpha}\bar{y})\bar{g}m\bar{w}hH(z)$	`mwe <i>mwai</i>
* $(1)\bar{g}my\bar{h}A$	$(1\bar{\alpha}\bar{r}\bar{w})\bar{g}my\bar{h}A(z)$	`mja	$(1\bar{\alpha}\bar{w})\bar{g}my\bar{h}A(z)$	`mja <i>myā:</i>
* $(\bar{g})21whA$	$(\bar{g}\bar{\alpha}\bar{r}\bar{y})21whA(z)$	_lwa	$(\bar{g}\bar{\alpha}\bar{y})21whA(z)$	_lwa <i>lhwā</i> <sup>1</sup>
* $(\bar{g})2r\bar{w}hH$	$(\bar{g}\bar{\alpha}\bar{r}\bar{y})2r\bar{w}hH(z)$	_rwe	$(\bar{g}\bar{\alpha}\bar{y})2y\bar{w}hH(z)$	_jue <i>rway</i>
* $(\bar{g})2k\bar{r}\bar{w}hA$	$(\bar{g}\bar{\alpha}\bar{y})2k\bar{r}\bar{w}hA(z)$	_kwa	$(\bar{g}\bar{\alpha}\bar{y})2k\bar{w}hA(z)$	_kwa <i>khwā</i>
* $(1)gkr\bar{w}hA$	$(1\bar{\alpha}\bar{y})gkr\bar{w}hA(z)$	`krwá	$(1\bar{\alpha}\bar{y})gj\bar{w}hA(z)$	`tcqá <i>krwa</i>
* $(1)\bar{g}\eta\bar{r}\bar{w}hA$	$(1\bar{\alpha}\bar{y})\bar{g}\eta\bar{r}\bar{w}hA(z)$	`ña	$(1\bar{\alpha}\bar{y})\bar{g}\eta\bar{w}hA(z)$	`ña <i>ñhā:</i>
* $(1)\bar{g}\eta\bar{r}\bar{w}hA$	$(1\bar{\alpha}\bar{y})\bar{g}\eta\bar{r}\bar{w}hA(z)$	`nra	$(1\bar{\alpha}\bar{y}\bar{w})\bar{g}\eta\bar{h}A(z)$	`na <i>ñrā:</i>
* $(1)gj\bar{w}hH$	$(1\bar{\alpha}\bar{r}\bar{y})gj\bar{w}hH(z)$	`tché	$(1\bar{\alpha}\bar{y})gj\bar{w}hH(z)$	`tché <i>khyai'</i>
* $(\bar{g})2phA$	$(\bar{g}\bar{\alpha}\bar{r}\bar{y}\bar{w})2phA(z)$	_ña	$(\bar{g}\bar{\alpha}\bar{y}\bar{w})2phA(z)$	_ña <i>ñhā</i>
* $(1)gy\bar{w}hH$	$(1\bar{\alpha}\bar{r}\bar{y})gy\bar{w}hH(z)$	_jue	$(1\bar{\alpha}\bar{y})gy\bar{w}hH(z)$	_jue <i>ywai'</i>

(breaks off, is swollen, shows, is bankrupt, are a lot of, slices, intends, separates, proceeds, borrows, marries, widens, is considerate, is distorted).

### *əm and ək Syllable*

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. -ē, -ā, -ū; B. -in, -an, -on) and Burmese and Arakanese ək Syllables (A. -ət, -at, -ot; B. -ət, -at, -ot), for all f Syllables are also either m (A. -aī; B. -an) or k (A./B. -aut), and c Syllables can only be also k (B. -it). Burmese əm and ək Syllables can, however, be immediately distinguished from c(k): initial velarity (k η) is a potential feature of the ə Syllable but not of the c (there are no such sequences as \*kət or \*ηt)<sup>2</sup>; but Burmese and Arakanese əm and ək Syllables are less easily distinguished from fm and fk Syllables. In fact no one 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 (η, ṅ), the terms of which are so named from the letter *ñ* of Burmese orthography (but in the

<sup>1</sup> There is an Arakanese Noun example of ly: 'lja, length (B. ə'lja *alyā:*); I have no note of any corresponding Arakanese form to the Burmese lyñ Verb lja *lya* (is flimsy), which is in any case somewhat literary.

<sup>2</sup> 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 *n̄* 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. -ē, -et; B. -ɪn/-ɪən, -et) with initial-consonant sequences comprising consonant and non-syllabic rounded vowel (Cw/Cɥ, i.e. pw rw mjɥ ɛɥ) on the one hand, and, on the other, to associate open vowels and back vowels (A. -ā, -at; -ō, -ot; B. -an/-ən, -at; -on, -ot) with the impossibility of any such Cw/Cɥ 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 *n̄*, and vice versa. Arakanese *ŋ* and Arakanese *n̄* phonetic features are, thus, the reverse of Burmese *ŋ* and *n̄* phonetic features respectively :

ŋ	A.	no potential Cw/Cɥ sequence, backness of vowel (a ɒ)
	B.	potential Cw/Cɥ sequence, frontness of vowel (ɪ ɛ)
n̄	A.	potential Cw/Cɥ sequence, frontness of vowel (ɪ ɛ)
	B.	no potential Cw/Cɥ sequence, backness/openness of vowel (a ɒ)

e.g.:

ŋ : A. mrā, B. mjɪn *mran* sees. A. prət, B. pwet *prwak* swells.  
 n̄ : A. mrē, B. mjən *mran* speeds. A. prwet, B. pjot *prwat* clusters.

Apart from the Front-Back system the other prosodic systems in terms of which Arakanese and Burmese əm and ək Syllables can be classified are those familiar from the previous section (əz, pp. 122-124); but there is one important feature that distinguishes the Burmese əm and ək from the əz, and indeed from all other prosodic types of Syllable: in their formulae alone is the w Labio-velarization component combined with the y Palatalization component and one of the Juncture components p, m, or n, e.g. p(y)w, *ɲot n̄hwat* bend; pyw, *pjɔn prwam*: mix together; myw, *mjɥet mrwak* utter. In Arakanese, similarly, it is only in the əm and the ək Syllable that the w Labiovelarity component correlates with the Juncture component p, e.g. *pɥet* bend; *ɲɥē* bend.

In the Arakanese and the Burmese əm and ək Syllable the y term of the Palatalization system again associates initial palatality (pj mj tɛ n j ɛ) with relative frontness of vowel (A. ē ɛt ā at; B. ɪn ɛt ən at ɔn ɔt) except in Arakanese wŋ and Burmese wŋ Syllables (A. ē ɛt; B. ɪn ɛt), in which it associates initial palatality (tɛ n ɛ, and j too for Burmese) with labiopalatality (ɥ); further, in Burmese əm Syllables, y associates initial palatality with pureness of vowel (ɪn ɔn). *ȳ*, on the other hand, associates non-palatality (e.g. k m θ) with the reverse of those features: (i) relative backness of the phonetically corresponding type of vowel (A. ē ɛt ā at ō vt; B. ɪ(ə)n ɛt ən at ɔ(ə)n ɔt), except in Arakanese wŋ and Burmese wŋ Syllables, in which the associated feature is labiovelarity (w), and (ii), in Burmese əm Syllables, potential diphthongization (ɪə ɔə).

In the əm and the ək Syllable the w term of the Labiovelarization system associates rounding of consonant (except palatals), e.g. θ k l, with either (i), in front-vowel Syllables (A. ṅ : ē ɛt ; B. ṅ : ɪ(ə)n ɛt), a non-syllabic rounded vowel (w ɥ) and a degree of retraction (A. ɛ ɛt ; B. ɪ(ə)n ɛt), or, (ii), in open- or back-vowel Syllables (A. ṅ : ā at, ō vt ; B. ṅ : ɔn/ɔn at, ɔ(ə)n ɔt), rounding of syllabic vowel (A. ɔ ; B. ɔ) ; the w̄ term associates non-rounding of initial consonant, e.g. θ k l, with absence of rounding as a vowel feature (syllabic or non-syllabic), and, in Arakanese ṅ and Burmese ṅ Syllables, with absence of retraction (as compared with the w Syllable) (A. ē/ē ɛt/ɛt, ā at ; B. ɪ(ə)n/ɪn ɛt/ɛt, ɔn/ɔn at).<sup>1</sup>

Arakanese əṅm and əṅk Syllables and Burmese əṅm and əṅk Syllables (A. ē ɛt ; B. ɪ(ə)n ɛt) do not differ from the respective əz Syllables as regards classification in terms of the Juncture system ; indeed they differ from the əz Syllable in Syllable-initial features only to the extent that the Burmese əṅm and əṅk Syllable are without examples of ṅ, lj, sw, and ṅw, but have the advantage over the əz Syllable in one respect, in the additional initial mɲ (mɲɛt *mrwak* utter), while for Arakanese əṅm and əṅk Syllables no initials ɲr, ṅ, ɾ, mɲ, ɲj, ṅ, p, kɾw, kɾ, lw, or jɲ have been noted, in comparison with Arakanese əz Syllables, though the additional initials ɲ, ɾw, lj, lj, pɾw, and ɲɲ and ṅɲ 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 əz is the Arakanese ɲɲ and ṅɲ, there would seem to be little point in giving a separate list. The əz 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 əwz Syllable (B. -e, -ɛ, -a ; A. -e, -a) no Burmese (ə)w̄ṅm (B. -an/ɔn) or (ə)w̄ṅk (-at) Syllable, and no Arakanese (ə)w̄ṅm (-ā) or (ə)w̄ṅk (-at) Syllable, can be classified in terms of the Juncture system as w (there are no sequences (B.) \*wan, \*wat ; (A.) \*wā, \*wat ; and in their Syllable-initial features too these sub-classes of the Burmese and the Arakanese əm and ək Syllable do not differ significantly from Burmese, or from Arakanese, əwz Syllables : the Burmese (ə)w̄ṅm Syllable, for example, has no ṅ-, mɲ-, or lj- initial, and has in addition lj- ; but the differences are not sufficiently great for it to be worth while to list the Syllable-initial features of the Burmese (ə)w̄ṅm or (ə)w̄ṅk Syllable, or the Arakanese (ə)w̄ṅm or (ə)w̄ṅk Syllable, independently of the əz (B., pp. 122-3 ; A., pp. 123-4).

The remaining sub-class of Burmese əm and ək Syllables, the (ə)w̄ṅm (-o(ə)n) and (ə)w̄ṅk (-ot), unlike the w̄ Syllables of the preceding paragraph, do contain Verb Syllables that can be classified in terms of the Juncture system as w, e.g. wot *wat*, wɔn *wam*, but none, on the other hand, that can be classified as v (there are no sequences \*ʷo, \*hɔ), or, it so happens, as ṅ (\*ṅo, \*ṅɔ) ; but, apart from the

<sup>1</sup> The sole exception, Burmese lw̄n *lhwan*, should perhaps be treated as a reading-style pronunciation, appropriate to this literary word.



prosodically significant absence of initial ʔ- and h- (and the fortuitous absence of n-, ŋ-, ŋ̄-, ɭ-, p̄j-, ɭj-, mj-, and m̄j-), and apart from the prosodically significant potential presence of initial w-, the Burmese (ə)w̄ŋm and (ə)w̄ŋk Syllables do not differ from the initials listed for əz (pp. 122-3) as w̄; and this difference is not great enough to warrant a separate list of (ə)w̄ŋm/k initials.

With Arakanese (ə)w̄ŋm (-v̄) and (ə)w̄ŋk (-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 ȳ; and there are therefore no examples of such sequences as \*p̄jv̄, \*m̄jv̄, \*t̄c(h)v̄, \*jv̄, \*jv̄, \*cv̄. Consequently, it is clear that no Arakanese Syllables of this type can be classified, in terms of the Juncture system, as j, ɲ, or y. On account of these individual features Arakanese (ə)w̄ŋ Syllable initials are listed separately, as follows:

(əȳ)w̄ŋ(m/k), -v̄ -nt

Junc.:	p	m	t(̄r)	c(̄r)	l(̄r)	r(̄r)	k	w(̄r)	s(̄r)
Rhot.:	$\overline{r}$ r	$\overline{r}$ r					$\overline{r}$ r		
Asp.:	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h	$\overline{h}$ h
	p ph	pr -	- -	mr -	t th	s -	- ɭ	r ɣ	k - kr kɣ w w̄ θ

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

- A. w̄ŋ : a ;                      ŋ̄ : ε ;                      wŋ : v ;
- B. ŋm : ɪ(ə) ;      ŋk : ε ;              w̄ŋm : a/a ;      w̄ŋk : a ;              w̄ŋ : o ;

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

A.-B. : əm AND ək CORRESPONDENCES

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

On the basis of a regular correspondence of Burmese ŋ and ŋ̄ to Arakanese ŋ and ŋ̄ respectively, \*ŋ and \*ŋ̄ 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 *prət* (prw), swell, corresponds not to a Burmese form \*pjət, but, irregularly, to *pwət* (p̄ȳw) *prwak/pwak* (but cf. Burmese *mjət* below).

ə correspondences include :

A.-B.	A.		B.		
* <i>(lə)prwh̄ŋk</i>	<i>(l̄gəȳ)prwh̄ŋk</i>	<i>ˈprwət</i> <sup>1</sup>	<i>(l̄gə)pywh̄ŋk</i>	<i>ˈpjət</i>	<i>prwat</i>
* <i>(lə)whŋk</i>	<i>(l̄gəȳw)whŋk</i>	<i>ˈwət</i>	<i>(l̄gə)p̄ywh̄ŋk</i>	<i>ˈpwət</i>	<i>whak</i>
* <i>(lə)mrwh̄ŋk</i>	<i>(l̄gəȳ)mrwh̄ŋk</i>	<i>ˈmrət</i>	<i>(l̄gə)mywh̄ŋk</i>	<i>ˈmjət</i>	<i>mrwak</i>
* <i>(lə)ḡlwh̄ŋm</i>	<i>(l̄əȳ)ḡlwh̄ŋm</i>	<i>ˈlwē</i>	<i>(l̄əȳ)ḡlwh̄ŋm</i>	<i>ˈlə(ə)n</i>	<i>lwam:</i>
* <i>(ḡə)2rwhŋm</i>	<i>(ḡəȳ)2rwhŋm</i>	<i>ˈr̄u</i>	<i>(ḡəy)2ywhŋm</i>	<i>ˈcun</i>	<i>rhwan</i>
* <i>(lə)rwh̄ŋk</i>	<i>(l̄gəȳ)rwh̄ŋk</i>	<i>ˈrət</i>	<i>(l̄gəy)ywh̄ŋk</i>	<i>ˈjat</i>	<i>rap</i>
* <i>(lə)ḡkrwhŋm</i>	<i>(l̄əȳ)ḡkrwhŋm</i>	<i>ˈkr̄u</i>	<i>(l̄əy)ḡjwhŋm</i>	<i>ˈtcun</i>	<i>khrawn:</i>
* <i>(lə)jhŋk</i>	<i>(l̄gəȳw̄)jhŋk</i>	<i>ˈtchat</i>	<i>(l̄gəy)jwhŋk</i>	<i>ˈtchat</i>	<i>khyak</i>
* <i>(lə)ŋwh̄ŋk</i>	<i>(l̄gəȳ)ŋwh̄ŋk</i>	<i>ˈŋət</i>	<i>(l̄gəy)ŋwh̄ŋk</i>	<i>ˈŋot</i>	<i>ŋhwat</i>
* <i>(ḡə)2ywh̄ŋm</i>	<i>(ḡəȳ)2ywh̄ŋm</i>	<i>ˈsē</i>	<i>(ḡəy)2ywh̄ŋm</i>	<i>ˈcan</i>	<i>rham</i>

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

Those Burmese əm Verbs which do not correspond to Arakanese əm 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. -at, -at ; B. -an, -at) is distinguished from the əm and the ək Syllable vary according to the following three sub-categories : (i), Burmese əŋ (-an, -ət), Arakanese əŋ (-ē, -ət) ; (ii), Burmese əw̄ŋ (-an/an, -at), Arakanese əw̄ŋ (-ā, -at) ; (iii), Burmese əw̄ŋ (-on, ot-), Arakanese əw̄ŋ (-ō, -ot). 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 (Cw-, Cq-) (\*Cwat 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. wau, wat), and the third by the impossibility of having a glottal initial (ʔ) (\*ʔon and \*ʔot are impossible sequences ; but cf. ʔan, ʔat).

From the Burmese c Syllable (-it), the f Syllable is distinguished, among other criteria, by potential initial velarity (k ŋ) (\*kūt and \*ŋūt are impossible sequences ; but cf. khat, ŋat).<sup>2</sup>

The Burmese and the Arakanese f Syllable closely resembles the b Syllable : Palatalization systems (y, ȳ) need to be stated for both Arakanese and Burmese f Syllable, and a Rhotacization system (r, r̄) 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

<sup>1</sup> Also p̄rət.

<sup>2</sup> But see p. 126, n. 2.

system (w, w̄) 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. wau, A. wat.

The exponents of the terms of the Labiovelarization system are :

w : initial labiovelarity, relative retraction of vowel                      wat  
 w̄ : initial non-labiovelarity, a relatively advanced vowel                      pət jat, etc.

e.g.:

w : A. waī, B. wau wuiñs ;                      A./B. wat wuik  
 w̄ : A./B. pət puik ;                                      A. rat, 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 ñ, and the Arakanese, similarly, by the absence from the available material of ʀ, ɲ, mʀ, and kʀ, 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 əm AND ARAKANES f CORRESPONDENCES

The Arakanese material provides only eight examples of this type of correspondence, of Burmese əm Syllables (-m) to Arakanese fm (-aī). Six of the eight Burmese Verbs, and the corresponding Arakanese f Verbs, can be classified by reference to the Palatalization system as y Verbs : p̄j̄m pyañ, p̄j̄m pyañs, p̄j̄m phyañ, t̄s̄m kyañ, t̄h̄m khyañ, j̄m yañ (ñ = ña-ka-lə: sat) ; the remaining two are ȳ : s̄m cañ, s̄m 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 ñ and c.

The following are examples of the \*cm correspondence :

A.-B.	A.	B.
*( <ḡ)2c̄pȳhm< td=""> <td>(ḡr̄w̄)2f̄pȳhm</td> <td>p̄jaī      (ḡəw̄)2pȳh̄m      p̄j̄m      pyañ</td> </ḡ)2c̄pȳhm<>	(ḡr̄w̄)2f̄pȳhm	p̄jaī      (ḡəw̄)2pȳh̄m      p̄j̄m      pyañ
*( <ḡ)2cj̄hm< td=""> <td>(ḡr̄ȳw̄)2f̄j̄hm</td> <td>t̄chaī      (ḡəy)2j̄w̄h̄m      t̄h̄m      khyañ</td> </ḡ)2cj̄hm<>	(ḡr̄ȳw̄)2f̄j̄hm	t̄chaī      (ḡəy)2j̄w̄h̄m      t̄h̄m      khyañ
*( <ḡ)2cȳhm< td=""> <td>(ḡr̄ȳw̄)2fȳhm</td> <td>j̄aī      (ḡəy)2ȳw̄h̄m      j̄m      yañ</td> </ḡ)2cȳhm<>	(ḡr̄ȳw̄)2fȳhm	j̄aī      (ḡəy)2ȳw̄h̄m      j̄m      yañ
*( <l)ḡcc̄hm< td=""> <td>(l̄r̄ȳw̄)ḡf̄c̄hm</td> <td>s̄aī      (l̄əy)ḡc̄w̄h̄m      s̄m      sañs</td> </l)ḡcc̄hm<>	(l̄r̄ȳw̄)ḡf̄c̄hm	s̄aī      (l̄əy)ḡc̄w̄h̄m      s̄m      sañs

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

c SYLLABLE

The (Burmese) c Syllable (-t) resembles the Burmese s (from spreading) more closely than any other, and especially the sk Syllable (-ət) ; 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 (p̄j̄ p̄j̄ mj̄ ; there can

be no sequences \*pit, \*mit), while in the sk Syllable, initial labiality cannot be palatalized (p ph m ; there are no sequences \*pjei, \*mjei). The only other Syllable-initial differences between the c and sk or sm Syllable are fortuitous : except that the c Syllable has no ɛ initial in a Verb Syllable (but cf. the Noun ɛ' 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 (pi mj ts n) with relative frontness (i) ; ŷ associates non-palatality (t s n l θ ' h) with relative backness of vowel (u). Thus, the Juncture components p, m, j, n, and y correlate with y, and t, c, n, l, s, and v with ŷ.

#### A.-B. : BURMESE c AND ARAKANESSE 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 \*h̄ : 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) ; \*ŷ (A. r̄ȳ ; B. y) ; e.g.:

A.-B.	A.	B.			
*(1ḡ)cp̄ȳhk	(1ḡ)p̄r̄ȳhk	`pat	(1ḡy)cph̄(k)	`pjut	<i>pac</i> throw ; <i>pyac</i> is thick
*(1ḡ)cprhk	(1ḡȳ)frhk	`prat	(1ḡy)cph(k)	`pjut	<i>phrac</i> becomes
*(1ḡ)cpyhk	(1ḡr̄)fp̄yhk	`piat	"	"	<i>phyac</i> massages
*(1ḡ)cjhk	(1ḡr̄ȳ)fjhk	`tchat	(1ḡy)cjh(k)	`tcht	<i>khyac</i> loves
*(1ḡ)crhk	(1ḡr̄ȳ)frhk	`rat	(1ḡy)cyh̄(k)	`jut	<i>rac</i> winds round
*(1ḡ)cyhk	(1ḡr̄ȳ)fyhk	`jat	"	"	<i>yac</i> gets drunk

#### A.-B. : f CORRESPONDENCES

The remaining Arakanese f Syllables (-aī, -at), those which do not correspond to Burmese ənm (-ɪn) or c (-it) 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 Labio-velarization components, whence \*w, \*w̄ ; e.g.:

A.-B.	A.	B.			
*(1)ḡfwm	(1r̄ȳw̄h)ḡfwm	`waī	(1ȳw̄h)ḡfwm	`wain	<i>wuīn̄</i> does jointly
*(1)fwk	(1ḡr̄ȳw̄h)fwk	`wāt	(1ḡw̄h)fwk	`wait	<i>wuik</i> curves round
*(1ḡ)fkrk	(1ḡȳw̄)fk̄rk	`kraut	(1ḡȳw̄)fjhk	`teat	<i>kruik</i> loves
*(1ḡ)fp̄yh̄m	(1ḡw̄)fp̄r̄ȳh̄m	`paī	(1w̄)ḡfp̄ȳh̄m	`pain	<i>puīn̄</i> cuts
*(1ḡ)frhk	(1ḡr̄ȳw̄)frhk	`rat	(1ḡȳw̄)fyhk	`jat	<i>ruik</i> hits.