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Sunwar phonemic summary

Dora Bieri and Marlene Schulze

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SUNWAR PHONEMIC SUMMARY

Tibeto-Burman Phonemic Summaries -VI

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Kirtipur

October, 1969

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Sunwar Phonemic Summary - 1

Sunwar Phonemic Summary

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I. Introduction.

- A. Name of the language. The language is referred to in the literature as Sunwar, Sunuwar, Sunwari, or Sunuwari.
- B. Relatedness to neighboring languages. Grierson, in Linguistic Survey of India, Vol. III, Part I, p. 193 ff. classifies Sunwar as a non-pronominalized Himalayan language of the Tibeto-Burman group. This classification was criticized by Robert Shafer in his 'Classification of Sino-Tibetan Languages' Word 11, 94-111 <1955>. Shafer classifies Sunwar as a member of the western branch of the East Himalayish section of the Bodic division of Sino-Tibetan. Computations on the basis of the Swadesh 100-word list indicate that Sunwar shares fewer cognates <12 - 17 %> with the other six languages of this report than any other language.
- C. Place spoken. According to Bista, People of Nepal <1967>, p. 64, 'The habitat of Sunwars is along the valleys of the Likhu Khola and of the Khimti Khola. These areas lie in Ramechhap and Dolakha, the two districts of Janakpur Zone, and a small portion of Okhaldhunga district in Sagarmatha Zone.'
- D. Number of speakers. The Nepal Government Census Report from 1961 lists the number of Sunwar speakers as being 13,362.
- E. Dialect studied. The dialect studied is spoken in East Nepal, Districts No. 2, Likhu Khola, in the village of Sabra, situated north of Ramechhap.
- F. Informants: Hari Bahadur Sunwar, 20 years old, and his sister Devi Jina Sunwar, 22 years old, served as language helpers. Both were born in the village of Sabra and live presently in Kathmandu.

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G. Time of research. This report is based upon research conducted between the 25th of June and the 23rd of September 1969.

H. Auspices. This research was conducted under the auspices of the Summer Institute of Linguistics in Nepal and Tribhuvan University, Kirtipur, Nepal.

I. Acknowledgements: This research was supported in part by the Department of Health, Education and Welfare, Office of Education, Washington, D. C. under contract No. OEC-O-9-097721-2778.

J. Bibliography.

Bista, Dor Bahadur. <1967> People of Nepal, p. 64 ff.

Grierson. <1909> Linguistic Survey of India, Vol. III, Part I, p. 198 ff.

Shafer, Robert. <1955> 'Classification of Sino-Tibetan Languages', Word 11, 94-111.

K. Orthography. Pitch is marked as following:

		Orthography	Phonemic
Level	high	"'-"	/CV/
	low	" "	/CV/
Glide	high	""-"	/'CV/
	low	"=-"	/'CV/

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II. Segmentals.

A. Stops, affricates and fricatives.

"ph"	/p ^h /	"th"	/t ^h /	"thr"	/tʃ ^h /	"kh"	/k ^h /
"p"	/p/	"t"	/t/	"tr"	/tʃ/	"k"	/k/
"b"	/b/	"d"	/d/			"g"	/g/
		"ts"	/tʃ/				
		"dz"	/dʒ/				
		"s"	/s/	"sh"	/ʂ/		
		"z"	/z/				

1. Contrast.

The stops contrast in their manner of articulation as voiceless aspirated versus voiceless unaspirated versus voiced stops. Further they contrast in their point of articulation as bilabial, alveolar, alveopalatal and velar.

a. bilabial

"'phee-tsa"	/p̥ee-ca/	'to wear'
"'pee-tsa"	/p̥e-ca/	'to finish a work'
"'bee-tsa"	/b̥e-ca/	'to die'
"phu"	/p ^h u/	'flower'
"pu-tsa"	/p̥u-ca/	'to dry on fire'
"bu-tsa"	/b̥u-ca/	'to carry on the back'
"pha:sh"	/p̥a:ʂ/	'wind, storm'
"'pa:-tsa"	/pá-ca/	'to do'
"'ba:-ne-tsa"	/ba-né-ca/	'to build'
"'phiit-sa"	/p̥íi-ca/	'to sweep'
"'pi-tsa"	/pí-ca/	'to come'
"'bi"	/bí/	'cow'

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b. alveolar

"'tha:-tsa"	/tʰá-ca/	'to be unconscious'
"ta:-tsa"	/tà-ca/	'to see'
"da:-tsa"	/dà-ca/	'to get tired'
"'"tha:p-tsa"	/'tʰáp-ca/	'to pay'
"'"ta:p-tsa"	/'táp-ca/	'to play a stringed instrument'
"da:p-tsa"	/dáp-ca/	'to rise' <sun>
"'"thoo-tsa"	/'tʰóo-ca/	'to pour out'
"'"too-tsa"	/'tóo-ca/	'to drop something'
"'"doo-tsa"	/'dóo-ca/	'to fall into something'
"'"thu;"	/'tʰú/	'mind'
"'"tuu-tsa"	/'túu-ca/	'to lick'
"'"duu-tsa"	/'dúu-ca/	'to drink too much'
"'"thee-tsa"	/'tʰée-ca/	'to step on something'
"'"tee-tsa"	/'tée-ca/	'to stop something'
"'"de;e-tsa"	/'dée-ca/	'to say'

c. alveopalatal

"'"threeb"	/tʰéeb/	'big'
"'"trectu"	/téetu/	'toad'
"'"tri-tsa"	/tí-ca/	'to obey'

d. velar

"'"khe-tsa"	/kʰé-ca/	'to peal'
"'"ke-tsa"	/ké-ca/	'to cook'
"'"ge-tsa"	/gé-ca/	'to grant'

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"=khrum-tsa"	/'kʰrùm-ca/	'to plant'
"=krup-tsa"	/'krùp-ca/	'to bow'
"=grum-tsa"	/'grùm-ca/	'to meet'
"kha"	/kʰa/	'axe'
"ka"	/kà/	'one'
"-ga"	/-gà/	'inside'

The affricates contrast as voiceless versus voiced.

"'tsii-tsa"	/'cíi-ca/	'to bath'
"'dzii-tsa"	/'jíi-ca/	'to break a stick'
"=tsaa-tsa"	/'càa-ca/	'to bring'
"=dzaa-tsa"	/'jàa-ca/	'to arrive'
"=tsee-tsa"	/'cèe-ca/	'to cut'
"=dzee-tsa"	/'jèe-ca/	'to fall apart'
"'tsoo-tsa"	/'cóo-ca/	'to shut in'
"'dzoo-tsa"	/'jóo-ca/	'to know events'
"'tso-tsa"	/'có-ca/	'to roast, burn'
"'dzo-tsa"	/'jó-ca/	'to graze'

The fricatives contrast as alveolar versus alveopalatal.
The alveolar fricative further contrasts as voiceless
versus voiced.

"'soo-tsa"	/'sóo-ca/	'to dry food'
"'shoo-tsa"	/'ʃóo-ca/	'to tell secrets'
"'suni"	/súni/	'morning'
"'shush"	/ʃúʃ/	'many'
"'bus"	/bús/	'snake'
"'bush"	/búš/	'white'
"pha:s"	/pʰás/	'flour'
"pha:sh"	/pʰáš/	'wind, storm'

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"'"sii-tsa"	/'síi-ca/	'to wash' <utensils>
"'"zii-tsa"	/'zíi-ca/	'to break' <bones>
"zeri"	/zèri/	'rib'
"'"see-tsa"	/'sée-ca/	'to awake'
"=saa-tsa"	/'sàa-ca/	'to recover'
"'"zaatan"	/'zàatan/	'naturally'

2. Variation.

- a. The voiceless bilabial unaspirated stop [p] fluctuates with voiceless bilabial fricative [ɸ] before voiceless stop or fricative and occasionally between vowels.

/tùptil/	[tuptíl] / [tuɸtíl]	'blacksmith'
/lápco/	[lapcɔ] / [lapɸcɔ]	'door'
/ŋòpa/	[ŋɔpa] / [ŋɸɔpa]	'ear'

- b. The voiced bilabial unaspirated stop /b/ is manifested as a voiced bilabial fricative [β] between vowels.

/'tʰéeb/	in slow speech is pronounced as
/'tʰéeba/	[tʰe:ba]

- c. The voiceless velar unaspirated stop /k/ is manifested as a voiceless velar fricative [χ] after vowel clusters ending with high front vowels and followed by voiceless unaspirated stops or affricates.

/'tàik-ca/	[taixtsa]	'to kick'
/'dàik-tak/	[daixtɔk]	'we received'
/'mùik-ca/	[muixtsa]	'to blow'
/'wòik-ca/	[woixtsa]	'to put'

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d. Articulatory description.

/p ^h /	[p ^h]	voiceless bilabial aspirated stop
/p/	[p]	voiceless bilabial unaspirated stop <norm>
	[ɸ]	voiceless bilabial fricative <a>
/b/	[b]	voiced bilabial unaspirated stop <norm>
	[β]	voiced bilabial fricative
/t ^h /	[t ^h]	voiceless alveolar aspirated stop
/t ^h /	[t ^h]	voiceless alveopalatal aspirated stop
/t/	[t]	voiceless alveolar unaspirated stop
/t/	[t̪]	voiceless alveopalatal unaspirated stop
/d/	[d]	voiced alveolar unaspirated stop
/k ^h /	[k ^h]	voiceless velar aspirated stop
/k/	[k]	voiceless velar unaspirated stop <norm>
	[χ]	voiceless velar fricative <c>
/g/	[g]	voiced velar unaspirated stop
/c/	[ts]	voiceless alveolar affricate
/j/	[dz]	voiced alveolar affricate
/s/	[s]	voiceless alveolar fricative
/z/	[z]	voiced alveolar fricative
/ʃ/	[ʃ]	voiceless alveopalatal fricative

3. Distribution.

Stops, affricates and fricatives are distributed in ten syllable types.

- | | |
|-------------------------------------|--|
| 1. C ₁ V | 7. C ₁₁ C ₁₂ VC ₁₃ |
| 2. C ₂ VV | 8. C ₁₄ C ₁₅ VVC ₁₆ |
| 3. C ₃ C ₄ V | 9. C ₁₇ VC ₁₈ C ₁₉ |
| 4. C ₅ C ₆ VV | 10. C ₂₀ C ₂₁ VC ₂₂ C ₂₃ |
| 5. C ₇ VC ₈ | |
| 6. C ₉ VVC ₁₀ | |

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In these ten syllable types we find 23 C-slots.

- /p^h/ fills slot 1, 2, 3, 5, 7 and 9.
/p/ fills slot 1, 2, 5, 7, 8, 9, 13, 14, 17,
18 and 22.
/b/ fills slot 1, 2, 3, 5, 7, 8, 9, 10, 11, 13,
14, 16, 19 and 20.
/t^h/ fills slot 1, 2, 7, 8, 9 and 10.
/t/ fills slot 1, 2, 7, 8, 9 and 17.
/d/ fills slot 1, 2, 7, 8, 9 and 10.
/t^h/ fills slot 1, 2, 7, 8, 9 and 10.
/t/ fills slot 1, 2, 7, 8, 9 and 10.
/k^h/ fills slot 1, 2, 3, 5, 7, 9, 10, 14 and 17.
/k/ fills slot 1, 2, 3, 5, 7, 8, 9, 10, 11, 14,
16 and 20.
/g/ fills slot 1, 2, 3, 5, 7, 8, 9, 11, 14, 16,
17 and 18.
/c/ fills slot 1, 2, 7, 8, 9, 16, 17, 19 and 23.
/j/ fills slot 1, 2, 7, 8, 9, 11 and 13.
/s/ fills slot 1, 2, 7, 8, 9, 10 and 11.
/z/ fills slot 1, 2 and 9.
/š/ fills slot 1, 2, 3, 5, 7, 8, 9 and 11.

Remarks on the interpretation.

- a. The aspirated stops /p^h/, /t^h/, /t^h/ and /k^h/ are interpreted as single units.

$$\begin{array}{lll} [p^h] & = C & = /p^h/ \\ [t^h] & = C & = /t^h/ \\ [t\dot{h}] & = C & = /t\dot{h}/ \\ [k^h] & = C & = /k^h/ \end{array}$$

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The aspirated stops /p^h/ and /k^h/ can be followed by another C, but there is no non-suspicious CCC-cluster which would allow to interpret the aspirated stops as a sequence of two units.

"'phraa-tsa"	/'phrää-ca/	'to loosen'
"=khrad-tsa"	/'khrää-ca/	'to step over'

For reasons of symmetry /t^h/ and /t^h/ are interpreted as single units like /p^h/ and /k^h/.

- b. The affricates /c/ and /j/ are interpreted as single units.

$$\begin{array}{lll} [ts] & = \text{C} & = /c/ \\ [dz] & = \text{C} & = /j/ \end{array}$$

The voiced affricate /j/ can be followed by another C.

"'dzya:n-me-tsa"	/jyqn-mé-ca/	'to be born'
------------------	--------------	--------------

For reasons of symmetry the voiceless affricate is interpreted as a single unit.

B. Nasals.

"m"	/m/	"n"	/n/	"ng"	/ŋ/
-----	-----	-----	-----	------	-----

1. Contrast.

The nasals contrast as bilabial versus alveolar versus velar.

"=maal-tsa"	/'mäl-al-ca/	'to search'
-------------	--------------	-------------

"=naa-tsa"	/'nää-ca/	'to weigh'
------------	-----------	------------

"=ngaa-tsa"	/'ŋgä-al-ca/	'to weep'
-------------	--------------	-----------

"pipim"	/pipim/	'queen'
---------	---------	---------

"'nis-sin"	/'nís-sin/	'sit!' <polite imperative>
------------	------------	----------------------------

"'sa:ring"	/sárin/	'sky'
------------	---------	-------

Sunwar Phonemic Summary - 10

2. Variation.

Articulatory description.

- "m" /m/ [m] voiced bilabial nasal
- "n" /n/ [n] voiced alveolar nasal
- "ng" /ŋ/ [ŋ] voiced velar nasal

3. Distribution.

The nasals are distributed in the 23 slots of the ten syllable types.

- | | |
|-------------------------------------|--|
| 1. C ₁ V | 7. C ₁₁ C ₁₂ VC ₁₃ |
| 2. C ₂ VV | 8. C ₁₄ C ₁₅ VVC ₁₆ |
| 3. C ₃ C ₄ V | 9. C ₁₇ VC ₁₈ C ₁₉ |
| 4. C ₅ C ₆ VV | 10. C ₂₀ C ₂₁ VC ₂₂ C ₂₃ |
| 5. C ₇ VC ₈ | |
| 6. C ₉ VVC ₁₀ | |

/m/ fills slot 1, 2, 7, 8, 9, 10, 13 and 18.

/n/ fills slot 1, 2, 7, 8, 9, 10, 13, 17 and 23.

/ŋ/ fills slot 1, 2, 7, 8, 9, 10, 13, 18 and 22.

Remarks on the interpretation.

/ŋ/ occurs syllable-initial as well as syllable-final. Syllable-initial it can be released by labialization. Syllable final it can be followed by a voiced velar stop. There is no non-suspicious CCC-cluster, therefore [ŋ] is interpreted as a single unit /ŋ/.

- | | | |
|-------------|-----------|-----------|
| "=ngaa-tsa" | /'ŋàa-ca/ | 'to weep' |
| "'ngwon" | /ŋwón/ | 'far' |
| "'sa:ring" | /sáriŋ/ | 'sky' |
| "kwungg" | /kwùŋg/ | 'hook' |

Sunwar Phonemic Summary - 11

C. Laterals, vibrants and semivowels.

"l" /l/ "r" /r/ "w" /w/ "y" /y/

1. Contrast.

a. Lateral versus vibrant.

"=syel-tsa"	/syèl-ca/	'to make'
"'"gyer-tsa"	/'gyér-ca/	'to be happy'
"ra:"	/rà/	'body'
"la:;"	/là/	'way'
"'mur"	/múr/	'man'
"'mul"	/múl/	'now'
"siwar"	/śiwar/	'jackal'
"wa:l"	/wàl/	'ghost'

b. Bilabial semivowel versus palatal semivowel.

"'wit"	/wít/	'panther'
"yits"	/yic/	'rat'
"'"waa-tsa"	/'wáa-ca/	'to plough'
"'"yaa-tsa"	/'yáa-ca/	'to transfer'
"'kwo-tsa"	/kwó-ca/	'to look'
"'kyor-tsa"	/kyór-ca/	'to cut'

2. Variation.

a. The alveolar flapped vibrant [ɾ] occurs

- syllable initial in second position of consonant clusters following bilabial and velar stops,
- word initial before the low, unfronted vowel /a/ and
- word final after high vowels.

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The alveolar trilled voiceless vibrant [R] occurs before voiceless alveolar affricates and before voiceless fricatives.

The alveolar trilled voiced vibrant [r] occurs elsewhere.

/'pr̥e:ca/	[pře:tsa]	'to jump'
/'br̥e:ca/	[bře:tsa]	'to write'
/'k ^h r̥um-ca/	[k ^h fumtsa]	'to plant'
/'kr̥up-ca/	[křuptsa]	'to bow'
/'gr̥um-ca/	[gfumtsa]	'to meet'
/r̥a/	[řa]	'body'
/múr/	[muř]	'man'
/curúmir/	[tsurumiř]	'fly'
/jír-ca/	[dziRtsa]	'to dye' <cloth>
/běr-ca/	[beŘtsa]	'to fly'
/gyár-ca/	[gyaRtsa]	'to play'
/mùr-ca/	[muRtsa]	'to wash' <cloth>
/kyóř-ca/	[kyoRtsa]	'to cut'
/wárc/	[waRts]	'friend'
/kyàrš/	[kyarš]	'goat'
/tär-šo/	[tařšo]	'beautiful'
/'rlimšo/	[ri:mšo]	'nice'
/rùu-ca/	[ru:tsa]	'to be enough'

b. Articulatory description.

/l/	[l]	voiced alveolar lateral
/r/	[r]	voiced alveolar vibrant
	[R]	voiceless alveolar vibrant
	[ř]	voiced alveolar flapped vibrant <a>
/w/	[w]	bilabial semivowel
/y/	[y]	palatal semivowel

3. Distribution.

Lateral, vibrant and semivowels are distributed in the 23 slots of the ten syllable types.

- | | |
|-------------------------------------|--|
| 1. C ₁ V | 7. C ₁₁ C ₁₂ VC ₁₃ |
| 2. C ₂ VV | 8. C ₁₄ C ₁₅ VVC ₁₆ |
| 3. C ₃ C ₄ V | 9. C ₁₇ VC ₁₈ C ₁₉ |
| 4. C ₅ C ₆ VV | 10. C ₂₀ C ₂₁ VC ₂₂ C ₂₃ |
| 5. C ₇ VC ₈ | |
| 6. C ₉ VVC ₁₀ | |

/l/ fills slot 1, 2, 4, 6, 7, 8, 9, 10, 12, 13 and 22.

/r/ fills slot 1, 2, 4, 6, 7, 8, 12, 13, 15, 18, 21 and 22.

/w/ fills slot 1, 2, 4, 7, 9, 12 and 21.

/y/ fills slot 1, 2, 4, 6, 7, 12, 15, 19 and 21.

Remarks on the interpretation.

a. /w/ fills a C-slot as in

"=waa-tsa" /wàa-ṣa/ 'to plough'

and is therefore interpreted as a consonant.

/w/ also occurs as labialization of voiced bilabial stop, voiceless velar stop, voiceless alveolar fricative and velar nasal. In these positions /w/ is treated as the second member of a CC-cluster. This interpretation reduces the number of consonant phonemes without increasing the number of syllable types.

"bwa" /bwà/ 'chicken'

"'kwo-tsa" /kwó-ṣa/ 'to see'

"'swang pa:-tsa" /swáŋ pa-ṣa/ 'to pretend'

"'ngwon" /nwón/ 'far'

b. /y/ fills a C-slot as in

"=yaa-tsa" /'yàa-ca/ 'to transfer'

and is therefore interpreted as a consonant.

/y/ also occurs as palatalization of velar stops as well as affricates and fricatives. In this function, /y/ is interpreted as the filler of the second slot of a CC-sluster. This interpretation reduces the number of consonant phonemes without increasing the number of syllable types.

"kyarsh"	/kyàrš/	'goat'
"'kyor-tsa"	/kyór-ca/	'to cut'
"'kye-tsa"	/kyé-ca/	'to boil'
"gyeth"	/gyèt ^h /	'up'
"gyu"	/gyù/	'cold'
"gyer-tsa/"	/gyér-ca/	'to be happy'
"'dzya:n-me-tsa"/'dzyan-mé-ca/		'to be born'
"'dzyet-tsa"	/jyét-ca/	'to light'
"=syel-tsa"	/'syèl-ca/	'to make'
"shyer"	/šyèr/	'uncooked rice'

D. Glottals.

" " /?/ "h" /h/

1. Contrast.

"'its-ka" /?íc-ka/ 'some'

"'ip-tsa" /?íp-ca/ 'to sleep'

"'hi;i-tsa" /'híi-ca/ 'to fear'

"'hil-tsa" /'híl-ca/ 'to grind'

2. Variation. None

Articulatory description.

?/ glottal stop.

/h/ voiceless glottal fricative.

3. Distribution.

In the 23 C-slots of the ten syllable types
 /?/ occurs in 1, 2, 7, 9 and 17.
 /h/ occurs in 1, 2, 7, 9 and 17.

Remarks on the interpretation.

/?/ and /h/ are considered as consonants because of their distribution in C-slot.

In the orthographic transcription the glottal stop is omitted. If there is no other consonant syllable initial, phonetically and phonemically the glottal stop is there.

E. Vowels.

"i" /i/	"u" /u/
"e" /e/	"o" /o/
"a" /a/	"a:" /ə/

1. Contrast.

a. Contrast in quality.

The vowels contrast in their quality as fronted versus unfronted. Fronted and unfronted vowels further contrast as high, mid and low.

"'tsirs"	/cìrs/	'small grain'
"tserb"	/cèrb/	'wheat'
"dza-tsa"	/jè-ca/	'to warm oneself'
"dzi-tsa"	/jí-ca/	'to quarrel'
"dzo-tsa"	/jó-ca/	'to graze'
"tso-tsa"	/cò-ca/	'to roast'
"tsu-tsa"	/cù-ca/	'to thresh'
"=laa-ta:k"	/'làa-tak/	'we cross a river'
"=laa-tak"	/'làa-tak/	'we make someone cross a river' <causative>

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b. Modification.

Fronted and unfronted, high, mid and low vowels can be modified by length and nasalization.

1> Contrast by length.

"'dzi-tsa"	/jí-ca/	'to quarrel'
""dzii-tsa"	/'jíi-ca/	'to break'
"'bre-tsa"	/bré-ca/	'to fall down flat'
""bree-tsa"	/'brée-ca/	'to write'
"=taaki"	/'tæaki/	'cap'
"=laa-tak"	/'læa-tak/	'we cause someone to cross the river'
"du-tsa"	/dù-ca/	'to live in peace'
""duu-tsa"	/'dúu-ca/	'to drink too much'
"'tso-tsa"	/cô-ca/	'to burn'
""tscoo-tsa"	/'côo-ca/	'to put into safety'
"=waa:k"	/'wàok/	'water'
"wa:l"	/wàl/	'ghost'

2> Contrast by nasalization.

"khi;"	/kʰi:/	'house'
"kyi"	/kyi:/	'intestine'
""ngwoi;k-tsa"	/'n̥woik-ca/	'to climb'
""hoik-tsa"	/'hóik-ca/	'to heat'
""hi;i-tsa"	/'h̥i-i-ca/	'to fear'
"=hii-tsa"	/'h̥ii-ca/	'to count'
"le"	/lè/	'four'
"le;"	/lè/	'tongue'
"'sa"	/sá/	'three'
"'tsa;"	/cá/	'hair'
"a; al"	/?a ?al/	'my child'
"a al"	/?a ?al/	'his child'

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"phu;"	/pʰø/	'snow'
"phu"	/pʰø/	'flower'
"o;"	/?ø/	'such'
"oth"	/?øtʰ/	'here'
"wa;:"	/wø/	'bear'
"bwa;:"	/bwø/	'cock, rooster'

2. Variation.

Fronted and unfronted high and mid open vowels occur in closed syllables with a single vowel nucleus. Fronted and unfronted high and mid closed vowels occur elsewhere.

/pipim/	[piplum]	'queen'
/giš/	[guš]	'how much'
/'cét-ca/	[tsettsa]	'to cut lengthwise'
/'gól-tem/	[goltem]	'to lie down' <third person plural>
/búš/	[buš]	'white'
/kúšul/	[kušul]	'skin'
/bubur/	[bubuř]	'tailor'
/hom/	[hom]	'milk'
/'gól-ca/	[goltsa]	'to lie down'
/pólpol/	[polpol]	'calf of leg'

Articulatory description.

/i/	[i]	voiced, high, close, front vocoid
	[ɪ]	voiced, high, open, front vocoid
/e/	[e]	voiced, mid, close, front vocoid
	[ɛ]	voiced, mid, open, front vocoid
/u/	[u]	voiced, high, close, back vocoid
	[v]	voiced, high, open, back vocoid
/ø/	[ø]	voiced, mid, close, back vocoid
	[ɔ]	voiced, mid, open, back vocoid
/a/	[a]	voiced, low, open, front vocoid
/ə/	[ə]	voiced, low, open, central vocoid

3. Distribution.

The vowels are distributed in 14 slots of ten syllable types.

- | | |
|-------------------------------------|--|
| 1. CV ₁ | 7. CCV ₁₀ C |
| 2. CV ₂ V ₃ | 8. CCV ₁₁ V ₁₂ C |
| 3. CCV ₄ | 9. CV ₁₃ CC |
| 4. CCV ₅ V ₆ | 10. CCV ₁₄ CC |
| 5. CV ₇ C | |
| 6. CV ₈ V ₉ C | |

/i/ fills slot 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13 and 14.

/e/ fills slot 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13 and 14.

/a/ fills slot 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13 and 14.

/u/ fills slot 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13 and 14.

/o/ fills slot 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13 and 14.

/ə/ fills slot 1, 2, 4, 7, 3, 9, 10, 13 and 14.

Nasalized vowels are restricted in their distribution.
This may be due to the limited data available.

/ɪ/ fills slot 1, 2, 3, 7, 3 and 10.

/ɛ/ fills slot 1 and 2.

/ə/ fills slot 1, 2, 4 and 10.

/ʌ/ fills slot 1 and 13.

/ɔ/ fills slot 1, 5 and 8.

/ɒ/ fills slot 1 and 2.

Vowel clusters are described in Section III,
A. Syllable, 2. Variation.

Remarks on the interpretation.

In the light of a non-suspicious VV-pattern
in "goe" /goe/ 'you' <polite>, for example,
long vowels are interpreted as two units.

V· = VV = VV

III. Higher Levels.

A. Syllable.1. Contrast.

The ten syllable types contrast as:

- | | |
|---------|-----------|
| 1. CV | 7. CCVC |
| 2. CVV | 8. CCVVC |
| 3. CCV | 9. CVCC |
| 4. CCVV | 10. CCVCC |
| 5. CVC | |
| 6. CVVC | |

a. Syllable type 1: CV

"po"	/pə/	'pig'
"bi"	/bí/	'cow'
"ka"	/kà/	'one'
"wa:"	/wà/	'cloth'

b. Syllable type 2: CVV

"be-tsa"	/'bée-tsa/	'to die'
"tsii-tsa"	/'cií-tsa/	'to wash the body'
"tsoo-tsa"	/'cóo-tsa/	'to shut in'
"naa-tsa"	/'nàa-tsa/	'to weigh'

c. Syllable type 3: CCV

"gru-tsa"	/grù-tsa/	'to appear'
"bre-tsa"	/brè-tsa/	'to fall down'
"gye-tsa"	/gyé-tsa/	'to get thin'
"glo"	/glò/	'horn'

d. Syllable type 4: CCVV

"prii-tsa"	/'prií-tsa/	'to fill it'
"brii-tsa"	/'bríi-tsa/	'it fills'
"shyee-tsa"	/'shyée-tsa/	'to teach'
"phle;e-tsa"	/'phlé;e-tsa/	'to bind'

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e. Syllable type 5: CVC

"pip"	/pɪp/	'king'
"'mur"	/múr/	'man'
"wa:l"	/wá:l/	'ghost'
"'polpol"	/pólpol/	'calf of leg'

f. Syllable type 6: CVVC

"'"theeb"	/'théeb/	'big'
"'"yool-tsa"	/'yóol-ca/	'to take away'
"=dzaa-b"	/'jæa-b/	'he arrives'
"=riim-sho"	/'ríim-šo/	'nice'

g. Syllable type 7: CCVC

"'bre-b"	/bré-b/	'fall down' <third person plural>
"'gyar-tsa"	/gyár-ca/	'to play'
"'swang pa:-tsa"/swáŋ pa-ca/		'to pretend'
"'dzya:n-me-tsa"/jyan-mé-ca/		'to be born'

h. Syllable type 8: CCVVC

"=preek"	/'præk/	'a tear'
"=kwoets"	/'kwðec/	'Sunwar'
"'"gyaap-tsa"	/'gyáap-ca/	'to buy'
"groik-tsa"	/groik-ca/	'to burn' <house>

i. Syllable type 9: CVCC

"'tsirs"	/cirs/	'small grain'
"tserb"	/cèrb/	'wheat'
"'ha:mts pa:-tsa"/hám̥c pa-ca/		'to jawn'
"nips"	/nips/	'brain'

j. Syllable type 10: CCVCC

"kwunng"	/kwùng/	'hook'
"kyarsh"	/kyàrš/	'goat'
"'brol-b"	/brół-b/	'it breaks'
"al-brepts/	?áł-brepc/	'small children'

2. Variation.

In this section consonant clusters and vowel clusters are treated as they occur in the ten syllable types.

For the distribution of phonemes in the syllable, see Section II, 'Segmentals'.

a. Consonant clusters.

1> Syllable initial.

a> Chart.

Second

	r	l	w	y
First				
p ^h	x	x		
	x	x		
	x	x		
k ^h	x			
	x		x	x
	x	x		x
j				x
s			x	x
š				x

Of the 17 possible variations in initial position

- 11 occur in syllable type 3: CCV
- 7 occur in syllable type 4: CCVV
- 11 occur in syllable type 7: CCVC
- 5 occur in syllable type 8: CCVVC
- 4 occur in syllable type 10: CCVCC

b> Examples:

Type 3:

"'phla;"	/p ^h lá/	'wing'
"'ta:pla"	/táp ^h la/	'palm of hand'
"'bre-tsa"	/bré-ca/	'fall down'
"'shoble"	/šóble/	'bread'
"'khri-khri pa:-tsa"	/k ^h ré-k ^h ri pa:-ca/	'to tremble'
"'kwo-tsa"	/kwó-ca/	'to look'
"'kye-tsa"	/kyé-ca/	'to boil'
"gra"	/grá/	'bamboo' <sliced>
"gru-tsa"	/grù-ca/	'to appear'
"glu-tsa"	/glù-ca/	'to rise' <sun, moon>
"gye-tsa"	/gyé-ca/	'to get thin'
"gyo-sho"	/gyó-šo/	'long'
"gyura"	/gyúra/	'right side'
"shye-tsa"	/šyé-ca/	'to catch'
"shyele"	/šyéle/	'thread'

Type 4:

"'"phree-tsa"	/'p ^h rée-ca/	'to splitter'
"'"phlee-tsa"	/'p ^h léé-ca/	'to bind'
"'=pree-tsa"	/'préé-ca/	'to jump'
"'"proo-tsa"	/'próo-ca/	'to weave'
"'"prii-tsa"	/'prií-ca/	'to fill'
"'=brii-tsa"	/'bríi-ca/	'to fill itself'
"'khruí"	/k ^h rui/	'tooth'
"'=khraa-tsa"	/'k ^h rää-ca/	'to step over'
"'=kraa-tsa"	/'krää-ca/	'to be caught'
"'"shyee-tsa"	/'šyéé-ca/	'to teach'

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Type 7:

"plupse"	/plupse/	'comb'
"'breb"	/bréb/	'he falls down'
"=khrum-tsa"	/'k ^h rùm-ca/	'to plant'
"krongledz"	/krøŋlej/	'mais'
"'kyor-tsa"	/kyó̄r-ca/	'to cut'
"=grum-tsa"	/'grùm-ca/	'to meet'
"'gyar-tsa"	/gyár-ca/	'to play'
"'dzya:n-me-tsa"/jyan-mé-ca/		'to be born'
"'dzyet-tsa"	/jyét-ca/	'to light'
"'swang pa:-tsa"/swán pa-ca/		'to pretend'
"syob-tsa"	/syob-ca/	'to clean beer'
"'shyer"	/syér/	'uncooked rice'

Type 8:

"=preek"	/'prèek/	'a tear'
"=kwo;ets"	/'kwò̄ec/	'Sunwar'
"kyai-k-tsa"	/kyàik-ca/	'to hang'
"groik-tsa"	/groik-ca/	'to burn' <house>
"'gyaap-tsa"	/'gyáap-ca/	'to buy'

Type 10:

"'brol-b"	/bról-b/	'it breaks'
"=khrum-b"	/'k ^h rùm-b/	'he plants'
"kwungg"	/kwùng/	'hook'
"kyarsh"	/kyàrš/	'goat'

2> Syllable final.

a> Chart.

Second

	b	t	g	c	s	š	n	y
First	p	x		x	x			
g								x
m	x			x				
ŋ			x		x			
r	x			x	x	x	x	
l	x							

Of the 14 possible variations in final position
 8 occur in syllable type 9: CVCC
 6 occur in syllable type 10: CCVCC

b> Examples:

Type 9:

"'nupt"	/núpt/	'end'
"'gups"	/gúps/	'lion'
"gigy"	/gìgy/	'green'
"'ha:nts pa:-tsa"/hámc pa-ca/		'to yawn'
"'a:ngs"	/?áŋs/	'dividing'
"tserb"	/cèrb/	'small grain'
"warts"	/wàrc/	'friend'
"'tsirs"	/círs/	'wheat'

Type 10:

"al-brepts"	/?äl-brepc/	'small children'
"=khrum-b"	/'kʰrùm-b/	'he plants'
"kwungg"	/kwùng/	'hook'
"kyarsh"	/kyärš/	'goat'
"'kyor-na kyor-n"/kyó-r-na kyor-n/	'he is cutting'	
"'brol-b"	/bról-b/	'breakable'

b. Vowel clusters.1> Orał vowel clusters.

a> Chart

Second

	i	e	a	u	o	ə
First	i	x		x		
	e		x			x
	a	x		x		
	u	x			x	
	o	x	x			x
	ə				x	x

Each of the six vowels clusters with itself
<geminates>. Further

- /i/ clusters with /a/ and vice versa,
- /e/ clusters with /o/ and vice versa,
- /u/ clusters with /i/,
- /o/ clusters with /i/,
- /ə/ clusters with /u/.

Of the 13 possible variations in the complex syllable nucleus

- 11 occur in syllable type 2: CVV
- 7 occur in syllable type 4: CCVV
- 9 occur in syllable type 6: CVVC
- 8 occur in syllable type 8: CCVVC

b> Examples:

Type 2:

"tsii-tsa"	/cíi-ca/	'to wash'
"bee-tsa"	/'bée-ca/	'to die'
"=dzaa-tsa"	/'jää-ca/	'to arrive'
"ruu-tsa"	/rùu-ca/	'to have enough'
"tsoo-tsa"	/cðoo-ca/	'to deliver'
"pia"	/pia/	'head'
"reo"	/reo/	'rainfall'
"goe"	/goe/	'you' <polite>
"sai"	/sai/	'long ago'
"gui"	/gui/	'arm'
"ta:u"	/tau/	'son'

Type 4:

"prii-tsa"	/prii-ca/	'to fill'
"=pree-tsa"	/'prèe-ca/	'to jump'
"=khraa-tsa"	/'kʰrää-ca/	'to step over'
"shuu"	/šyuu/	'father-in-law'
"proo-tsa"	/'próo-ca/	'to weave'
"broe-tsa"	/broe-ca/	'to free oneself'
"=khruu"	/'kʰrùu/	'tooth'

Type 6:

"tsiib"	/cíib/	'bird'
"theeb"	/'tʰéeb/	'big'
"=dzaa-b"	/'jää-b/	'he arrives'
"ruu-b"	/rùu-b/	'he has enough'

"tsoo-b"	/cðə-b/	'he delivers'
"=waa:k"	/'wðak/	'water'
"=laik-tsa"	/'ləik-ca/	'to carry'
"'"hoik-tsa"	/'hóik-ca/	'to heat'
"'tuik-tsa"	/túik-ca/	'to know'

Type 8:

"=brii-b"	/br̥lii-b/	'it fills'
"=bree-b"	/'br̥ee-b/	'he writes'
"'"gyaap-tsa"	/'gyáap-ca/	'to buy'
"gruu-b"	/gr̥uu-b/	'he comes out'
"proo-b"	/pr̥o-b/	'he runs away'
"=kyai-k-tsa"	/'kyəik-ca/	'to hang'
"kroik-tsa"	/kroik-ca/	'to cut'
"prui-k-tsa"	/prui-k-ca/	'to release'

2> Nasalized vowels.

Nasalized vowels occur in vowel clusters, of which one member of the cluster only is nasalized. The nasalized vowel fills the first slot of the VV-cluster. As an exception to this /i/ also fills the second slot when following /o/ or /u/.

Nasalized vowel in first position:

a> Chart.

Second

	i	e	a	ə	o	u
First	j	x				
.			x			
.				x		
.	q	x	x			
.	q	x	x			
.	u					

Of the 7 possible variations

- 4 occur in syllable type 2: CVV
- 1 occurs in syllable type 4: CCVV
- 2 occur in syllable type 6: CVVC
- 2 occur in syllable type 8: CCVVC

b> Examples:

Type 2:

"hi;i-tsa"	/hí-i-ca/	'to fear'
"de;e-tsa"	/dé-e-ca/	'to say'
"pa;;i-tsa"	/pái-ca/	'to wear ornaments'
"pha;;e-tsa"	/pháe-ca/	'to go to the same place regularly'

Type 4:

"phle;e-tsa"	/phlé-e-ca/	'to bind'
--------------	-------------	-----------

Type 6:

"li;ik"	/lík/	'yeast'
"=wo;ish"	/wóish/	'husband'

Type 8:

"shya;ab"	/syáab/	'beer'
"=kwo;ets"	/kwóets/	'Sunwar'

Nasalized vowels in second position:

a> Chart.

		i	e	a	ə	ø	u
First	i						
	e						
	a						
	ə						
	ø	x					
	u	x					

Of the 2 possible variations
2 occur in syllable type 2: CVV
1 occurs in syllable type 6: CVVC

b> Examples:

Type 2:

"'"ngwoi;ti"	/'ŋwó̯iti/	'in front of'
"pui;-tsa"	/puj-ca/	'to beg'

Type 6:

"'"ngwoi;k-tsa"	/'ŋwó̯ik-ca/	'to climb'
-----------------	--------------	------------

3. Distribution.

- a. The ten syllable types occur as monosyllabic foot, and in this function they carry tone.
<For tone see Section IV.>.
- b. Syllables with complex vowel nuclei are restricted to the nuclear position in the foot. The nuclear syllable carries the tone.
- c. Syllables with final CC-cluster always occur in foot-final position.

IV. Items of special interest.- Tone.

The analysis of tone is incomplete. There is a clear contrast between contour tone and register tone. The contour tone occurs as high falling and low falling. The register tone contrasts as high and low. Tone seems to be relevant on a higher level than the syllable level and will be described in a later paper.

Tone does not influence or condition the contrasts of the phonemes described in Section II., 'Segmentals'.

Examples:

a. Stops and affricates.

1. High failing contour tone.

"'phee-tsa"	/'p ^h ée-ca/	'to wear'
"'pee-tsa"	/'pée-ca/	'to finish a work'
"'bee-tsa"	/'bée-ca/	'to die'
"'too-tsa"	/'tóo-ca/	'to drop an object'
"'doo-tsa"	/'dóo-ca/	'to be dropped'
"'sii-tsa"	/'síi-ca/	'to wash utensils'
"'zii-tsa"	/'zíi-ca/	'to break bones'
"'tsoo-tsa"	/'cóo-ca/	'to shut in'
"'dzoo-tsa"	/'jóo-ca/	'to know events'

2. Low falling contour tone.

"=pree-tsa"	/'prèe-ca/	'to jump'
"=bree-tsa"	/'brèe-ca/	'to write'
"=taa-tsa"	/'tàa-ca/	'to take'
"=daa-tsa"	/'dàa-ca/	'to swallow'
"=khraa-tsa"	/'k ^h ràa-ca/	'to step over'
"=graa-tsa"	/'gràa-ca/	'to win'
"=tsee-tsa"	/'cèe-ca/	'to cut'
"=dzee-tsa"	/'jèe-ca/	'to fall into rags'

b. Fricatives.

1. High falling contour tone.

"'"saam-tsa" /'sáam-ca/ 'to put beside'

2. Low falling contour tone.

"=saam-tsa" /'sàam-ca/ 'to loose'

c. Nasals.

1. High falling contour tone.

"'"maal-tsa" /'máal-ca/ 'to want'

"'"naa-tsa" /'náa-ca/ 'to chew'

"'"naik-tsa" /'náik-ca/ 'to rest'

2. Low falling contour tone.

"=maal-tsa" /'màal-ca/ 'to look for'

"=naa-tsa" /'nàa-ca/ 'to weigh'

"=naik-tsa" /'nàik-ca/ 'to pinch'

d. Vibrant.

1. High falling contour tone.

"'"riim-tsa" /'ríim-ca/ 'to wait'

2. Low falling contour tone.

"=riim-tsa" /'rìim-ca/ 'to be nice'

e. Some examples with
register tone.

1. High.

"'tso-tsa" /có-ca/ 'to burn'

"'dzo-tsa" /jó-ca/ 'to graze'

2. Low.

"tuu-tsa" /tùu-ca/ 'to drink'

"duu-tsa" /dùu-ca/ 'to move'

"wa:;" /wɔ:/ 'bear'

"bwa:;" /bwɔ:/ 'rooster'