

THAKALI PHONEMIC SUMMARY

Tibeto-Burman Phonemic Summaries - III

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I. <u>Introduction</u>	1
II. <u>Segmentals</u>	4
A. Stops, affricates and fricatives	4
1. Contrast	4
2. Variation	8
3. Distribution	15
B. Sonants	17
1. Contrast	18
2. Variation	20
3. Distribution	21
C. Vowels	22
1. Contrast	22
2. Variation	27
3. Distribution	30
III. <u>Higher levels</u>	31
A. Syllable	31
1. Contrast	31
2. Variation	32
3. Distribution	33
IV. Items of special interest: Tone system	34
A. Voice quality	34
1. Contrast	34
2. Variation	36
3. Distribution	36
B. Pitch	39
1. Contrast	39
2. Variation	41
C. Tone versus stress	47

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I. Introduction.

- A. Name of the language. In Nepal this language and the tribe is known as Thakali. When speaking Nepali, the Thakali refer to their language as Thakali, but in their mother tongue the term "tapaang" is current. In the Linguistic Survey of India, Vol. III, Part I, we find among the Tibeto-Burman languages one which is called Thaksya. The resemblance of the data given there to our present Thakali data is sufficient to allow us to assume that Thaksya is simply another name for Thakali.
- B. Relatedness to neighboring languages. According to Sten Konow in Grierson, Linguistic Survey of India, Vol. III, Part I, p. 406, Thaksya belongs to the complex pronominalized group of the Himalayan languages within the Tibeto-Burman family. Chepang, Kusunda, and Bhramu share the same classification. He says, however, that the information available about Thaksya is not sufficient to decide with certainty whether it belongs to the pronominalized group or not. According to our present knowledge of Thakali it belongs to the non-pronominalized group. Robert Shafer in his 'Classification of Sino-Tibetan Languages', Word 11, 94 - 111 (1955), classifies Thaksya, Tamang, and Gurung as co-ordinate members of the Gurung branch, which is a member of the Bodish section and above that of the Bodic division. On this view, Gurung, Tamang, and Thakali are the most closely related of the languages the report deals with. Computations by Warren Glover based upon the Swadesh 100-word list for the languages of the report place Thakali and Gurung closest with 66 per cent shared cognates, and next closest is Tamang with 56 per cent shared cognates.
- C. Place spoken. The Thakali region lies in Nepal in the northern part of the Dhaulagiri zone along the upper Kali-Gandaki River. This part of the valley is known as Thak Khola (or "thasang luhmpu" in Thakali) and lies deep in between the Dhaulagiri and Annapurna massives. It extends south to Ghasa and north to

Thakali Phonemic Summary - 2

Jomosom. In the villages between Jomosom and Tukche, different dialects are spoken, while from Tukche down to Ghasa the language seems to be quite uniform, with only small local differences. Many Thakalis have migrated lately towards the south into the lower and milder hilly region, particularly to Baglung, Pokhara, and Bhairawa, but there they tend to lose their language. The children born in the southern regions usually do not know much Thakali.

- D. Number of speakers. According to Dor Bahadur Bista, People of Nepal (1967), p. 81, the total number of Thakali speaking people was 3,307 in 1954. The statistics of the Deputy Zonal Commissioner in Jomosom gave 5,103 as the number of inhabitants for the whole region between Jomosom and Ghasa in 1969, but this number is likely to include some non-Thakali speakers.
- E. Dialect studied. This summary represents the language as spoken in Tukche, the former business centre of the region. It can be representative of the region of the Kali Gandaki valley from Ghasa to Tukche and for Jomosom, but not for the villages between Tukche and Jomosom. (Cf. p. 1, section I. C.).
- F. Principal informants: Parbati Tulachen, Pokhara, brought up in Tukche, Mahendra Tulachen, Pokhara, brought up in Tukche, Bijay Gauchan, Pokhara, brought up in Jhuma near Tukche, Nila Gauchan, Kathmandu, brought up in Tukche.
- G. Time of research. Field trips: 22nd October - 14th December 1968 (8 weeks) and 7th January - 25th February 1969 (7 weeks). These two periods were spent in Pokhara, in the house of a Thakali family. Pokhara is not in the actual Thakali area, but it has many Thakali settlers there. The investigators lived in a settlement of six families which left the Thak Khola within the last 12 years. From 22nd - 30th April 1969 a survey in the Thak Khola was carried out. Further study and informant work was done in Kathmandu from June - September 1969.
- H. Auspices. This research has been carried out under the auspices of the Summer Institute of Linguistics in Nepal in collaboration with the 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 number OEC-O-9-097721-2778. In carrying it out I have received advice and guidance from Dr. Austin Hale, Kathmandu, and Dr. Kenneth L. Pike, University of Michigan. The data was collected in cooperation with Miss Anita Maibaum, member of the Summer Institute of Linguistics.
- J. Bibliography. To my knowledge no major work has been done on the analysis of Thakali. We find it mentioned under the name of Thaksya by Sten Konow in Grierson, Linguistic Survey of India <1909>, Vol. III, Part I, p. 406 - 407, and by Robert Shafer, Classification of Sino-Tibetan Languages, Word 11, 94 - 111 <1955>.
- Anthropological studies:
Dor Bahadur Bista, People of Nepal <1967>, Thakali p. 80 - 88, Panchgaunle p. 89 - 90.
Corneille Jest, Les Thakali, Extrait de l'Ethnographic Revue de la Société d'Ethnographie de Paris, 1964 - 65.
- K. Transcription conventions. In the following statement square brackets embrace data in phonetic transcription: [sim], slant lines data in phonemic transcription: /sim/, double quotation marks data in the orthography used in text: "sim", and single quotation marks the translation of data into English: 'cold'.

The lines above or below data in phonetic transcription are pitch contours. The pitch contour of clear vowels is above the word, the one of breathy ones below because the pitch of breathy vowels is considerably lower.

In clear we have a contrast between a high-falling contour and a high level. The high-falling starts a trifle higher than the high level. In phonemic and orthographic transcription the high falling contour is marked with /' / "" before the syllable, the level one is not marked. Clear monosyllables are not marked because they have not been classified yet.

In breathy we have a contrast between the low level contour on the one hand, and a low rising and slightly falling contour on the other. In phonemic and orthographic transcription the latter contour is marked with /' / "" before the syllable while the level pitch is not marked.

II. Segmentals.

A. Stops, affricates and fricatives.

Bilabial	Dental	Alveo- dental	Alveolar retroflexed	Velar
"ph" /p ^h /	"th" /t ^h /	"ch" /c ^h /	"Th" /ʈ ^h /	"kh" /k ^h /
"p" /p/	"t" /t/	"c" /c/	"T" /ʈ/	"k" /k/
		"s" /s/		"h" /h/

1. Contrast.

a> Bilabial stops.

"phiri"	/p ^h iri/	'upon'
"picyaang"	/picyan/	'small sister'
"phaalo"	/p ^h alo/	'festival'
"peare"	/pare/	'priest'
"phum"	/p ^h um/	'egg'
"pucu"	/pucu/	'thorn'
"pho"	/p ^h o/	'stomach'
"'polo"	/'polo/	'nettles'
"phi"	/p ^h i/	'bark'
"pi"	/pi/	'leaves'
"phewa"	/p ^h ewə/	'to come out'
"pewa"	/pewə/	'shy'
"pha"	/p ^h ə/	'husband'
"pa"	/pə/	'thin'
"phle"	/p ^h le/	'opening up'
"ple"	/ple/	'flat'
"phro"	/p ^h ro/	'pull out'
"pro"	/pro/	'snack'
"phrano"	/p ^h raŋno/	'unfasten!'
"'prahno"	/'praŋ ^h no/	'wait!'

Thakali Phonemic Summary - 5

b> Dental stops.

"thin"	/t ^h in/	'floor'
"tingi"	/tiŋi/	'today'
"'thama"	/'t ^h ɔmɔ/	'they'
"tahna"	/tɔ ^h nɔ/	'many'
"thiwa"	/t ^h iwɔ/	'to throw up'
"tiwa"	/tiwɔ/	'to spread'
"thewa"	/t ^h ewɔ/	'to hear'
"tewa"	/tewɔ/	'to fall'
"'thowa"	/'t ^h owɔ/	'big'
"towa"	/towɔ/	'to need'
"thaa"	/t ^h a/	'always'
"taa"	/ta/	'what'
"thaang"	/t ^h an/	'smell'
"taang"	/taŋ/	'pot'
"thaawa"	/t ^h awɔ/	'to cut'
"taawa"	/tawɔ/	'to hold out'
"thano"	/t ^h ɔno/	'keep!'
"tano"	/tɔno/	'put!'

c> Alveolar retroflexed stops.

"Thi'lawā"	/t̪ ^h i'lawɔ/	'to do puja'
"Tihm"	/t̪ ^h im/	'wall'
"Thicam"	/t̪ ^h icom/	'only'
"'Tihcam"	/'t̪ ^h icom/	'the same'
"Thimpa"	/t̪ ^h impɔ/	'to twist'
"Tihmca"	/t̪ ^h imcɔ/	'rug'
"Thewa"	/t̪ ^h ewɔ/	'to tear up'
"Tewa"	/t̪ɔwɔ/	'to climb'
"'Thuwa"	/'t̪ ^h uwɔ/	'to wash'
"'Tuwa"	/'t̪uwɔ/	'to stay'

Thakali Phonemic Summary - 6

"Tha"	/tʰɔ/	'buzzard'
"Ta"	/tɔ/	'hair, head'
"Thaangpa"	/tʰaŋpɔ/	'to burn'
"Taangpa"	/tɔŋpɔ/	'to break'
"Tiwa"	/tʰiwa/	'to follow'
"'Towa"	/'tɔwa/	'to roast'

d> Alveo-dental affricates.

"chi"	/tʰʃi/	'grass'
"'cikaa"	/'tʃika/	'barley'
"cho"	/tʰtʃɔ/	'lake'
"coh"	/tʃoʰ/	'dzopa'
"chappa"	/tʰtʃɔppɔ/	'to sharpen'
"'cahme"	/'tʃoʰme/	'daughter'
"chyaarwa"	/tʰtʃyara/	'sharp'
"cyaangpa"	/tʃyaŋpɔ/	'small'
"chuwa"	/tʰtʃuwa/	'entertaining'
"cuwa"	/tʃuwa/	'to bark'
"choy"	/tʰtʃoy/	'limit'
"coy"	/tʃoy/	'remains'
"chaywa"	/tʰtʃɔywa/	'to fight'
"caywa"	/tʃɔywa/	'to gather up'
"'chawa"	/'tʃɔwa/	'to graze'
"'cawa"	/'tʃɔwa/	'to eat'
"'chame"	/'tʃɔme/	'young girl'
"'came"	/'tʃɔme/	'Does he eat?'

e> Velar stops.

"khorɔ"	/kʰoro/	'upwards'
"kolaa"	/kola/	'boy'
"khotong"	/kʰotoŋ/	'hole'
"kon"	/kon/	'clothing'

Thakali Phonemic Summary - 7

"'khataang"	/'k ^h ɔtaŋ/	'where'
"'karu"	/'kɔru/	'buck-wheat'
"khiwa"	/k ^h iwa/	'to bind'
"kiwa"	/kiwa/	'easy'
"khe"	/k ^h e/	'grandfather'
"ke"	/ke/	'field'
"khaa"	/k ^h a/	'neck'
"kaa"	/ka/	'blood'
"khu"	/k ^h u/	'lentils'
"ku"	/ku/	'nine'
"khum"	/k ^h um/	'cushion'
"kum"	/kum/	'urine'
"'khawa"	/'k ^h ɔwa/	'which'
"kawa"	/kɔwa/	'thick'

f> Alveo-dental fricatives.

"siwa"	/siwa/	'to die'
"sowa"	/sɔwa/	'alive'
"saang"	/saŋ/	'incense'
"su"	/su/	'who'
"'suwa"	/'suwa/	'thick'
"sam"	/sɔm/	'heart'
"sahwa"	/sɔ ^h wa/	'good'
"sya"	/sya/	'meat'
"sye"	/sye/	'louse'
"haang"	/han/	'courtyard'
"hak"	/hɔk/	'condition'
"haanaang"	/hanan/	'two paths'
"haampa 'thowa"	/hampɔ 't ^h ɔwa/	'greedy'
"haampa"	/hampɔ/	'to yawn'

2. Variation.

"ph" /p^h/ [p^h] voiceless bilabial aspirated stop, occurs word initially.

[p̥] voiceless bilabial fricative, occurs intervocalically.

/p^hc/ [p^ho] 'stomach'

/p^hyɔnɔɔ/ [p^hyɔnɔɔ̄] 'to jump'

/ɲɔp^he/ [ɲɔp̥ē] 'food speciality'

/'ap^hi/ [ʔap̥ī] 'aunt'

"th" /t^h/ [t̥^h] voiceless dental aspirated stop.

"ch" /c^h/ [ts^h] voiceless alveodental aspirated grooved affricate.

"T^h" /ʈ^h/ [ʈ̥^h] voiceless alveolar retroflexed aspirated stop.

"kh" /k^h/ voiceless velar aspirated stop. Variants:

	fronted	medial	backed
stop variants	[k̥ ^h]	[k ^h]	[k̠ ^h]
lenis fricative variants	[x̥]	[x]	[x̠]

The stop variants occur initially. The lenis fricative variants occur intervocalically in fluctuation with the stop variants.

The fronted variants occur before /i, i^h, e, e^h/, and /y/, the medial variants before /a, a^h, u, u^h, o/, and /o^h/, the backed variants before /ɔ/ and /ɔ^h/.

Fronted variants:

/k^hiɔɔ/ [k̥^hiɔɔ̄] 'to bind'

/k^heɔɔ/ [k̥^heɔɔ̄] 'to patch'

/k^hyɔɔ/ [k̥^hyɔɔ̄] 'to throw away'

/ak^hi/ [ʔak̥^hī] / [ʔax̥ī] '<I> don't bind'

Thakali Phonemic Summary - 9

/ak ^h e/	[ʔāk ^h ɛ̄] / [ʔax̣ē]	'<I> don't patch'
/ak ^h ya/	[ʔāk ^h yā] / [ʔax̣ā]	'<I> don't throw away'

Medial variants:

/k ^h a/	[k ^h a]	'neck'
/'k ^h uyu/	[k ^h uȳu]	'old woman'
/k ^h oro/	[k ^h ofō]	'upwards'
/'mrak ^h a/	[mɾāk ^h ā] / [mɾax̣ā]	'door'
/tik ^h um/	[tik ^h um̄] / [tix̣um̄]	'one pice'

Backed variants:

/'k ^h ɔwɔ/	[ḳ ^h ɔwɔ̄]	'to come'
/k ^h ɔm/	[ḳ ^h ɔm̄]	'can'
/'ak ^h ɔ/	[ʔāḳ ^h ɔ̄] / [ʔax̣ɔ̄]	'<I> don't come'
/ak ^h ɔm/	[ʔāḳ ^h ɔm̄] / [ʔax̣ɔm̄]	'<I> cannot'

- "p" /p/ [p] voiceless bilabial unaspirated stop.
 [p̣] voiceless or slightly voiced lenis variant.
 [b] voiced fricative variant.
 [b] voiced stop variant.

The voiceless stop variant occurs word initial, contiguous to a voiceless consonant and word final. <Word final it may be released or unreleased, in the latter case sometimes slight aspiration follows. Word final the contrast between /p^h/ and /p/ is neutralized, only /p/ occurs>.

The lenis variant and the fricative variant occur intervocalically in fluctuation with each other. The lenis variant also occurs between a vowel and a voiced consonant. The voiced stop variant occurs after voiced consonants.

Voiceless stop variant:

/pe/	[pe]	'story'
/ɬop/	[ɬop]	'hot'
/to ^h kpo/	[to ^h kpo]	'to reach there'
/syoppo/	[syoppo]	'to catch up'

Lenis/fricative fluctuation:

/cipi/	[t̪̥ipi] / [t̪̥ibi]	'a little'
/lo ^h por/	[lo ^h poɸ] / [lo ^h boɸ]	'lie'
/'lopu/	[lopu] / [lobu]	'radish'

Lenis variant:

/'poplo/	[poplo]	'shoe'
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Voiced stop variant:

/sompɔ/	[sompɔ]	'new'
/ɹunpɔ/	[ɹunpɔ]	'thick'

- "t" /t/ [t̪̥] voiceless dental unaspirated stop.
 [t̪̥̣] voiceless or slightly voiced lenis variant.
 [d] voiced variant.

The stop variant occurs word initially and word finally. The lenis variant occurs intervocally and between a vowel and a voiced consonant. The voiced variant occurs after voiced consonants.

Stop variant:

/tom/	[tom]	'bear'
/ti ^h ni/	[ti ^h ni]	'sun'
/cot cot/	[tsot̪̥ - tsot̪̥]	'frying noise'

Lenis variant:

/titin/	[<u>t̪it̪in</u>]	'this year'
/'o ^h te/	[<u>wh^ho^hte</u>]	'so much'
/kutru/	[<u>ku^ht̪ru</u>]	'hunch backed'

Voiced variant:

/me ^h nto/	[<u>me^hndc</u>]	'flower'
/samtɔ/	[<u>samtɔ</u>]	'pleasure'

"c" /c/ voiceless alveo-dental unaspirated grooved affricate. Variants:

	alveo-dental	alveo-palatal fronted
voiceless	[ts]	[tʃ̥]
lenis	[t̪s]	[t̪ʃ̥]
voiced	[dz]	[dʒ]

The voiceless variants occur word initially and after voiceless consonants. The lenis variants fluctuate with the voiced variants between vowels, and after voiced consonants the voiced variants occur.

The alveo-palatal variants occur before /i, i^h, e, e^h/, and /y/ followed by a back vowel. The alveo-dental variants occur elsewhere.

Voiceless variants:

/cɔm/	[tsɔm]	'bridge'
/caŋ/	[tsaŋ]	'daughter-in-law'
/cyanpɔ/	[<u>tsyanpɔ</u>]	'small'
/cyo ^h ŋo/	[<u>t̪syo^hŋo</u>]	'come' <hon.>
/'cyuku/	[<u>t̪syo^hku</u>]	'oil'

/cipi/	[t̪̥ʂipi]	'a little'
/to ^h kci/	[to ^h kt̪̥ʂi]	'arrived'
/ɔpɔcyo/	[ɔopt̪̥ʂyo]	'let's learn'

Lenis/voiced fluctuation:

/pucu/	[put̪̥su] / [pudz̪̥u]	'thorn'
/k ^h uca ^h /	[k ^h ut̪̥sa ^h] / [k ^h ud̪̥za ^h]	'vegetables'
/sici/	[sit̪̥ʂi] / [sid̪̥ʂi]	'died'
/'alece/	[ʔalet̪̥ʂe] / [ʔaled̪̥ʂe]	'by the brother'

Voiced variants:

/momca ^h /	[momd̪̥za ^h]	'grandmothers'
/taŋca ^h /	[taŋd̪̥za ^h]	'pots'
/momce/	[momd̪̥ʂe]	'by grandmother'
/mance/	[mond̪̥ʂe]	'by the medicine'

- "T" /t̪̥/ [t̪̥] voiceless alveolar retroflexed stop.
 [t̪̥̥] lenis variant.
 [d̪̥] voiced variant.

The voiceless stop variant occurs word initially and contiguous to a voiced consonant. The lenis variant occurs intervocalically. The voiced variant occurs after voiced consonants.

/t̪̥awɔ/	[t̪̥awɔ]	'to weep'
/'t̪̥u ^h ŋ/	[t̪̥u ^h ŋ]	'tree'
/p ^h opt̪̥e/	[p ^h opt̪̥e]	'gray'
/cɔt̪̥ti/	[t̪̥ɔt̪̥.i]	'eleven'

Lenis variant:

/noʃi/	[n ^o ʃi]	'bone'
/la ^h ʃu/	[la ^h ʃu]	'leftovers'

Voiced variant:

/konʃa/	[k ^w o ⁿ ʃa]	'loom'
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"k" /k/ voiceless velar unaspirated stop. Variants:

	fronted	medial	backed
stop variants	[k̟]	[k̠]	[k̠]
lenis variants	[k̟]	[k̠]	[k̠]
voiced fricative var.	[g̟]	[g̠]	[g̠]
voiced variant		[g]	
variant with bilabial release		[k ^w]	

The fronted variants occur before /i, i^h, e, e^h, y/, the medial variants occur before /u, u^h, o, o^h, a, a^h/, but word initially before /o/ and /o^h/ the variant with the bilabial release occurs [k^w]. <The bilabial release is phonetically different from the fully labialized [kw] occurring before [a] and [ɔ] where it is interpreted as a sequence of two segments because it is contrastive in that environment>.

The backed variants occur before /ɔ/ and /ɔ^h/. The stop variants occur word initially, word finally and contiguous to a voiceless consonant. The lenis variants occur between a vowel and a voiced consonant. The voiced variant occurs after voiced consonants. Intervocally we find the lenis variants in fluctuation with the fricative variants.

Ihakali Phonemic Summary - 14

Stop variants:

/kiwə/	[k̄iwo]	'well, easy'
/ke/	[k̄e]	'field'
/'kyah/	[k̄yah]	'place'
/ka/	[k̄a]	'blood'
/ku/	[k̄u]	'nine'
/to ^h k/	[t̄o ^h k]	'arrives'
/to ^h kpa/	[t̄o ^h kpa]	'to arrive'
/'kɔplo/	[k̄ɔplo]	'brain'

Bilabial release:

/koyme/	[k̄woyme]	'granddaughter'
/'ko ^h y/	[k̄wo ^h y]	'song'

Lenis variants:

/'nokyu/	[n̄ɔkyu]	'dog'
/to ^h kɔ/	[t̄o ^h kɔ]	'did <you> arrive?'
/'hokri/	[h̄okri]	'in the condition'

Lenis/fricative fluctuation:

/a'ke ^h wa/	[ʔa ^h ke ^h wa]	/ [ʔa ^h ge ^h wa]	'<I> don't cut'
/akiwa/	[ʔakiwa]	/ [ʔa ^h giwa]	'uneasy'
/naka/	[n̄aka]	/ [n̄aga]	'hen'
/ro ^h koca ^h /	[ʔo ^h kotsa ^h]	/ [ʔo ^h godza ^h]	'rubbish'
/miku/	[m̄iku]	/ [m̄iʃu]	'smoke'
/'mɔkɔɔ/	[m̄ɔkɔɔ]	/ [m̄ɔ ^h ɔɔ]	'fire pot'
/'nokɔɔ/	[n̄ɔkɔɔ]	/ [n̄ɔ ^h ɔɔ]	'cat'

/s/ [s] voiceless alveo-dental grooved fricative.
 [ʃ] alveo-palatal fronted variant, occurs contiguous to /i, i^h, e, e^h/, and /y/.

/saŋ/	[saŋ]	'incense'
/suŋ/	[suŋ]	'mouth'
/so/	[so]	'earth, ground'
/sin/	[ʃin]	'wood'
/sye/	[ʃye]	'louse'
/'nyese/	[nyeʃe]	'evenings'
/pi ^h si/	[pi ^h ʃi]	'said'

"h" /h/ [h] voiceless glottal fricative, occurs only word initially. There are no other variants.

3. Distribution.

There are six patterns for the emic syllable:

C ₁ V	C ₂ C ₃ V	V
C ₁ V C ₄	C ₂ C ₃ V C ₄	V C ₄

A seventh syllable type occurs: C C C V . For this type only two examples are available:

/p ^h ryawɔ/	[p ^h ryæwɔ]	'thin'
/plyawɔ/	[plyæwɔ]	'flat'

The latter has an alternative pronunciation which is preferred:

/plewɔ/	[plewɔ]	'flat'
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This and the fact that these two examples are the only ones out of more than 2000 words suggest that they should be treated as exceptions which do not fit the overall pattern of the language. This pattern allows

only a sequence of two consonants syllable initially with a very restricted filler class for the second consonant. These two odd words are not taken into account in any further discussion of distribution and interpretation.

All the stops, affricates and fricatives occur as C₁-fillers. As C₂-fillers /p, p^h, t, c, ch, k, k^h/, and /s/ occur. No stops, affricates or fricatives occur as C₃-fillers. The C₃-fillers are /r, l, y, w/. Restrictions in the combination of C₂- and C₃-fillers are the following:

/y/ as C₃-filler clusters with all C₂-fillers except with /t/. /r/ clusters only with the bilabial stops and with /t/. /l/ clusters only with the bilabial stops, /w/ only with /k/, and /kw/ is followed only by /a, a^h, ɔ, ɔ^h/. <Cf. II. A. 2., note on bilabial release versus full labialization>.

As C₄-fillers we find the unaspirated stops /p, t, ʈ, k/, and the fricative /s/, but they are not frequent in this position. <The voiced consonants are the frequent syllable closers>.

Restrictions in the combination of consonants and vowels:

The breathy vowels do not occur following the aspirated stops, the aspirated affricate and /h/. Both, clear and breathy vowels occur following the unaspirated stops, affricate and /s/.

Notes on interpretation.

- a) Affrication, aspiration and palatalization.
<Interpretation of [y] as semivowel see II. B. 3., p. 22, notes on interpretation>.

All three features are contrastive. The sequences /pl/ and /pr/ occurring syllable initially are considered as non-problem consonant sequences, suggesting that a syllable initial CC sequence is possible. We therefore can interpret one of the three features as a separate segment. We choose palatalization for the following reasons: Palatalization occurs with a wider range of segment types than the two other features and less symmetrically than these. To interpret the palatalized segments as one consonant would

result in a quite asymmetric series of palatalized segments. (The voiceless /ɽ/ and /ɺ/ could also be interpreted as segments with aspiration, but even so palatalization occurs still with a wider range of segment types).

Further evidence for the interpretation of the aspirated stops and affricate as units is that the rules for variation of the aspirated stops differ from those for the unaspirated ones and it would be complicated to combine them.

b> Labialized release and labialization.

The labialized release of /k/ and /ŋ/ occurring word initially before the heavily rounded /o/ and /o^h/ is not a contrastive feature, and [k^w] and [ŋ^w] are therefore one segment: /k/, /ŋ/. The full labialization [kw] is phonetically different and contrastive and interpreted as a sequence of two segments: /kw/. It occurs only before /a, a^h, ɔ/, and /ɔ^h/.

c> Lengthened contours: [p·], [t·], [n·], [ŋ·],
[l·], [ɸ·].

They occur only across syllable and morpheme boundaries and can therefore be interpreted as sequences of two segments without strain to the non-problem CV-pattern for the emic syllable.

B. Sonants.

		bilabial	alveo-dental	alveo-palatal	velar
nasals	voiced	"m" /m/	"n" /n/		"ŋ" /ŋ/
laterals	voiced		"l" /l/		
	voiceless		"ɺ" /ɺ/		
vibrants	voiced		"r" /r/		
	voiceless		"ɽ" /ɽ/		
semivowels		"w" /w/		"y" /y/	

1. Contrast.

a> Nasals.

"min"	/min/	'name'
"'metaang"	/'metan/	'lamp'
"maah"	/ma ^h /	'son-in-law'
"mu"	/mu/	'sky'
"moh"	/mo ^h /	'cloud'
"mahri"	/mɔ ^h ri/	'beneath'
"'mrawa"	/'mɾɔwɔ/	'to light'
"'mlaahwa"	/'mla ^h wɔ/	'to sprout'
"mom"	/mom/	'grandmother'
"nimpal thaa"	/nimpɔl t ^h a/	'the whole night'
"ngimpa"	/ŋimpɔ/	'old'
"'nemyaa"	/'nemya/	'bird'
"'ngese"/"ngyese"	/'ŋese/ / /ŋyese/	'evenings'
"'nuhwa"	/'nu ^h wɔ/	'to sleep'
"nguca"	/ŋucɔ/	'sister-in-law'
"na"	/nɔ/	'nose'
"nga"	/ŋɔ/	'I'
"namri"	/nɔmri/	'in the rain'
"ngamri"	/ŋɔmri/	'nearby'
"naango"	/naŋɔ/	'press!'
"ngaango"	/naŋɔ/	'stand up!'
"'noh"	/'no ^h /	'garlic'
"ngoh"	/ŋo ^h /	'forehead'
"naah"	/na ^h /	'pus'
"'ngaah"	/'ŋa ^h /	'five'

b> Laterals.

"la"	/lɔ/	'month'
"La"	/ɭɔ/	'god, idol'
"lotehwa"	/lotɛ ^h wɔ/	'to believe'
"Latihngi"	/ɭɔti ^h ŋi/	'moon'
"lapu"	/'lɔpu/	'radish'
"La paah"	/ɭɔ pa ^h /	'leaf'
"lawā"	/'lɔwɔ/	'to do'
"Lapo"	/ɭɔpɔ/	'learn!'
"lahp'lawā"	/lɔ ^h p'ɭɔwɔ/	'to put away'
"Lap"	/ɭɔp/	'hot'

c> Vibrants.

"Re"	/ɹɛ/	'ribbon'
"resaang"	/resɔŋ/	'nearby'
"Rup"	/ɹup/	'thread'
"ru"	/ru/	'horn'
"Rungpa"	/ɹuŋpɔ/	'thick'
"ruhwa"	/ru ^h wɔ/	'to stir'
"Rewa"	/ɹewɔ/	'to grate'
"rewa"	/rewɔ/	'to get up'

d> Semivowels.

"wih"	/'wi ^h /	'leather bag'
"weh"	/'we ^h /	'brightness'
"waah"	/wa ^h /	'so'
"caw"	/'cɔw/	'eat!'
"khaw"	/'k ^h ɔw/	'come!'
"mlewa"	/'mlɛwɔ/	'to forget'
"thowa"	/'t ^h ɔwɔ/	'big'
"kharwa"	/k ^h ɔrɔwɔ/	'dry'

Thakali Phonemic Summary - 20

"yewa"	/yewɔ/	'to return'
"yaah"	/ya ^h /	'yak bull'
"yahwa"	/'yɔ ^h wɔ/	'to go'
"say"	/sɔy/	'price'
"muhy"	/mu ^h y/	'feather'
"taya"	/'tɔya/	'potatoes'
"puywa"	/puywɔ/	'to carry'
"ngyaahng"	/'ŋya ^h ŋ/	'we'

2. Variation.

- "m" /m/ [m] voiced bilabial nasal, no other variants.
- "n" /n/ [n] voiced alveo-dental nasal, no other variants.
- "ng" /ŋ/ [ŋ] voiced alveolar nasal.
 [ŋ̟] fronted variant.
 [ŋ^w] variant with bilabial release.

The fronted variant occurs before /i, i^h, e, e^h/, and /y/, the bilabial release word initially before /o/ and /o^h/.

/'ŋa ^h /	[ŋ̟a ^h]	'five'
/tɔŋ/	[t̟ɔŋ]	'pot'
/mraŋo/	[mraŋo]	'see!'
/ŋi ^h n/	[ŋ̟i ^h n]	'fears'
/ŋye ^h /	[ŋ̟ye ^h]	'milk'
/ŋo ^h /	[ŋ ^w o ^h]	'forehead'
/'ŋoŋo/	[ŋ ^w oŋo]	'before'

- "l" /l/ [l] voiced alveo-dental lateral, no other variants.
- "L" /ɭ/ [ɭ] voiceless alveo-dental lateral, no other variants.

r" /r/ [ɾ] voiced flapped alveo-dental vibrant.
[ɾ̃] trilled variant.

The trilled variant occurs contiguous to /r/ and utterance initially and finally in fluctuation with the flapped variant. Elsewhere the flapped variant occurs.

/'kɔru/	[kɔ̃ɾu]	'buck wheat'
/'pra ^h /	[pɾa ^h]	'flour'
/p ^h rɔmpɔ/	[p ^h ɾɔ̃mbɔ]	'to unfasten'
/'mɾɔwɔ/	[mɾɔ̃wɔ]	'to light'
/pɔ ^h rri/	[pɔ ^h ɾ.i]	'in the garden'
/resəŋ/	[ɾesəŋ] / [ɾesəŋ]	'nearby'
/sɔr/	[sɔ̃ɾ] / [sɔɾ]	'star'

"R" /ɾ/ [ɾ] voiceless semitrilled-fricative alveo-dental vibrant, no other variants.
"w" /w/ [w] voiced, high close back rounded bilabial semivocoid, no other variants.
"y" /y/ [y] voiced, high close front unrounded palatal semivocoid, no other variants.

3. Distribution.

The emic syllable patterns are the following:

C ₁ V	C ₂ C ₃ V	V
C ₁ V C ₄	C ₂ C ₃ V C ₄	V C ₄

All the sonants can be C₁-fillers. As C₂-fillers only /m/ and /n/ occur. The C₃-fillers are /r, l, y, w/.

Restrictions in clustering:

/m/ as C₂-filler clusters with /r, l, y/. /n/ clusters only with /y/. /w/ as C₃-filler occurs only after /k/.

As C₄-fillers all the voiced sonants occur. After the voiceless sonants /t/ and /t̃/ breathy vowels do not occur.

Notes on interpretation:

- a> [y] and [w]: No non-problem VV sequences occur within the phonetic syllable, therefore [y] and [w] are interpreted as semivowels: /y/ and /w/.
- b> [ŋ^w]: The bilabial release of /ŋ/ is not contrastive and therefore interpreted as one segment.
- c> [ɽ] and [ɽ̥] are interpreted as single segments analogous to the aspirated stops. <Cf. II. A. 3., p. 16-17, interpretation>. Interpretation of lengthened sonants see II. A. 3., p. 17.

C. Vowels.

	front-spread		back-rounded	
	clear	breathy	clear	breathy
high	"i" /i/	"ih" /i ^h /	"u" /u/	"uh" /u ^h /
mid	"e" /e/	"eh" /e ^h /	"o" /o/	"oh" /o ^h /
low	"aa" /a/	"aah" /a ^h /	"a" /ɔ/	"ah" /ɔ ^h /

Breathiness:

The tongue and lip position of the breathy vowel is the same as for the clear vowels, but the breathy vowels have a different voice quality. For the clear ones the Adam's apple remains raised while for the breathy ones the Adam's apple is lowered and the throat expanded. This results in a larger resonance chamber in the back of the mouth and the vowel gets a different voice quality. At the same time the pitch of the breathy vowel is lower than the pitch of the clear one in the same stress position. It is a considerable step down. <For more details of pitch see section IV. A. and B.>. The term breathy is kept for traditional reasons and for the lack of a better term, but in Thakali it could be misleading, for it is only in overdistant speech that a breath is audible. In normal speech, it is the low pitch and the lax voice quality which are prominent. When a person is pronouncing a breathy vowel, we can observe externally the tightening of the muscles of the front part of the neck and if a person has a protruding Adam's apple, the lowering of it is also visible.

1. Contrast.

a> High front vowels.

"tiwa"	/tiwɔ/	'to spread'
"tihwa"	/ti ^h wɔ/	'to stammer'
"tingi"	/tini/	'today'
"tihngi"	/ti ^h ŋi/	'sun'
"piwa"	/piwɔ/	'to leave'
"pihwa"	/pi ^h wɔ/	'to say'
"pri"	/pri/	'yak cow'
"prih"	/pri ^h /	'root'
"siwa"	/siwɔ/	'to die'
"sihwa"	/si ^h wɔ/	'to spend'
"mi"	/mi/	'eye'
"mih"	/mi ^h /	'man'
"li"	/li/	'face'
"lih"	/li ^h /	'body'
"riwa"	/riwɔ/	'to set in'
"rihwa"	/ri ^h wɔ/	'scratching'
"rimpa"	/rimpɔ/	'short'
"rihmpa"	/ri ^h mpɔ/	'long'

b> Mid front vowels.

"ke"	/ke/	'field'
"keh"	/ke ^h /	'work'
"Te"	/tɛ/	'lower back'
"Teh"	/tɛ ^h /	'mule'
"tewa"	/tewɔ/	'to fall'
"tehwa"	/te ^h wɔ/	'to drive away'
"pe"	/pe/	'story'
"peh"	/pe ^h /	'wife'

"pewa"	/pewɔ/	'shy'
"pehwa"	/pe ^h wɔ/	'to have sexual intercourse'
"pre"	/pre/	'with'
"'preh"	/'pre ^h /	'eight'
"me"	/me/	'fire'
"'meh"	/'me ^h /	'cow'
"le"	/le/	'tongue'
"leh"	/le ^h /	'act'
"rewa"	/rewɔ/	'to get up'
"rehwa"	/re ^h wɔ/	'to grate'

c> Back high vowels.

"kum"	/kum/	'fist'
"kuhng"	/ku ^h ŋ/	'middle'
"kyu"	/kyu/	'water'
"'kyuh"	/'kyu ^h /	'sheep'
"Tu"	/t̥u/	'elbow'
"Tuh"	/t̥u ^h /	'grain'
"'Tuwa"	/'t̥uwa/	'to stay'
"tuhwa"	/tu ^h wɔ/	'sorrow'
"tumpa"	/tumpɔ/	'to wrap'
"'tuhmpa"	/'tu ^h mpɔ/	'fat, thick'
"cuwa"	/cuwɔ/	'to bury'
"'cuhwa"	/'cu ^h wɔ/	'to divide'
"'suwa"	/'suwɔ/	'dense'
"suhmpa"	/su ^h mpɔ/	'to sleep'
"syuwa"	/syuwɔ/	'line up'
"syuhwa"	/syu ^h wɔ/	'to stay'
"ru"	/ru/	'horn'
"ruh"	/ru ^h /	'stirs'

d> Back mid vowels.

"kowa"	/kowɔ/	'to move'
"kohwa"	/ko ^h wɔ/	'to understand'
"kompa"	/kompɔ/	'to fill'
"kohmpa"	/ko ^h mpɔ/	'to fill'
"'Towa"	/'ɽowɔ/	'to roast'
"'Tohwa"	/'ɽo ^h wɔ/	'hot'
"towa"	/towɔ/	'to need'
"tohwa"	/to ^h wɔ/	'to meet'
"tong"	/ɔŋ/	'new moon'
"'tohng"	/'to ^h ŋ/	'spindle'
"'sowa"	/'sowɔ/	'hot'
"sohwa"	/so ^h wɔ/	'to build'
"ngo"	/ŋɔ/	'hair parting'
"ngoh"	/ŋo ^h /	'forehead'
"ngompa"	/ŋompɔ/	'to show'
"ngohmpa"	/ŋo ^h mpɔ/	'to turn round'
"ro"	/ro/	'reported speech'
"roh"	/ro ^h /	'friend'

e> Low front vowels.

"kaa"	/ka/	'blood'
"kaah"	/ka ^h /	'blister'
"Taawa"	/ɽawɔ/	'to weep'
"Taahwa"	/ɽa ^h wɔ/	'to tear up'
"caang"	/caŋ/	'daughter-in-law'
"caahng"	/ca ^h ŋ/	'neat'
"taa"	/ta/	'what'
"taah"	/ta ^h /	'pole'
"maa"	/ma/	'down'
"maah"	/ma ^h /	'son-in-law'

Thakali Phonemic Summary - 26

"naawa"	/nawɔ/	'to carry'
"naahwa"	/na ^h wɔ/	'to drink'
"naango"	/naŋo/	'press!'
"naahngo"	/na ^h ŋo/	'give please'
"naa"	/na/	'take!'
"naah"	/na ^h /	'pus'
"yaa"	/ya/	'hand'
"'yah"	/'ya ^h /	'male yak'

f> Low back vowels.

"kawa"	/kɔwɔ/	'thick'
"kahwa"	/kɔ ^h wɔ/	'to enjoy'
"Ta"	/tɔ/	'hair'
"'Tah"	/'tɔ ^h /	'cock's comb'
"ca"	/cɔ/	'that'
"cah"	/cɔ ^h /	'son'
"'caca"	/'cɔcɔ/	'salt'
"cahca"	/cɔ ^h cɔ/	'small child'
"sawa"	/sɔwɔ/	'to complete'
"sahwa"	/sɔ ^h wɔ/	'good'
"na"	/nɔ/	'nose'
"nah"	/nɔ ^h /	'ear'
"nawa"	/nɔwɔ/	'to pain'
"nahwa"	/nɔ ^h wɔ/	'to raise'
"nga"	/ŋɔ/	'I'
"ngah"	/ŋɔ ^h /	'big drum'
"ra"	/rɔ/	'goat'
"'rah"	/'rɔ ^h /	'knows'

Tone:

For contrastive pitch features see section IV. B., p. 39 and following.

2. Variation.

description of norm	phoneme	norm	nasalized variants	fronted variants	raised variants
voiced high close front unrounded	clear /i/	[i]	[ĩ]		
	breathy /i ^h /	[i ^h]	[ĩ ^h]		
voiced mid close front unrounded	clear /e/	[e]	[ẽ]		
	breathy /e ^h /	[e ^h]	[ẽ ^h]		
voiced low open front unrounded	clear /a/	[a]	[ã]	[ã]	
	breathy /a ^h /	[a ^h]	[ã ^h]	[ã ^h]	
voiced high close back rounded	clear /u/	[u]	[ũ]	[ü]	
	breathy /u ^h /	[u ^h]	[ũ ^h]	[ü ^h]	
voiced mid close back rounded	clear /o/	[o]	[õ]	[ö]	
	breathy /o ^h /	[o ^h]	[õ ^h]	[ö ^h]	
voiced low open back relaxed-rounded	clear /ɔ/	[ɔ]	[ɔ̃]	[o]	[ɔ̃]
	breathy /ɔ ^h /	[ɔ ^h]	[ɔ̃ ^h]	[o ^h]	[ɔ̃ ^h]

Length:

Each of the above listed variants has several allophones with various degrees of length, but on the phoneme level there is no contrastive vowel length. It is linked with stress and intonation and needs to be investigated on higher levels. This has not been completed yet.

For specific description of breathy and clear see II. C. J., p. 22.

The nasalized variants occur after nasal consonants.

/ɲi/	[ɲĩ]	'we'
/'ɲi ^h /	[ɲĩ ^h]	'two'

Thakali Phonemic Summary - 28

/me/	[mɛ̃]	'fire'
/ma/	[mɔ̃]	'down'
/nɔ/	[nɔ̃]	'nose'
/mu/	[mʊ]	'sky'
/'nu ^h wɔ/	[nu ^h wɔ̃]	'to sleep'
/mom/	[mɔ̃m]	'grandmother'
/mo ^h /	[mɔ̃ ^h]	'cloud'
/ma ^h /	[mɔ̃ ^h]	'son-in-law'

The fronted variants occur after /y/ in closed syllables, except before /n/ as syllable closer, and in non-word final open syllables.

/p ^h yasi/	[p ^h yæ̃s̃i]	'shining'
/myur/	[myüf̃]	'plenty'
/'kya ^h si/	[k̃yæ̃h̃s̃i]	'to use'
/cyu ^h ri/	[t̃s̃yü ^h r̃i]	'at last'
/'cyuku/	[t̃s̃yü ^h k̃u]	'oil'
/yu ^h l/	[yü ^h l̃]	'village'
/'syopin/	[s̃yöp̃in]	'boy adored as god'
/syɔppɔ/	[s̃yɔp̃.ɔ̃]	'to catch up'
/'cyo ^h pin/	[t̃s̃yö ^h p̃in]	'tea pot'
/'kyo ^h muk/	[k̃yö ^h muk]	'brown'

The raised variants occur in syllables which are closed by /w/.

/'k ^h ɔw/	[k ^h ɔ̃w]	'come!'
/'kɔ ^h w/	[kɔ̃ ^h w]	'tweezers'

Thakali Phonemic Summary - 29

/'cɔw/	[tɔ̃w]	'eat!'
/tɔ ^h w/	[tɔ ^h w]	'spinach'

Further vowel variants occurring word and stress group initially. Unrounded breathy vowels occurring word initially are preceded by aspiration, rounded breathy vowels by slight labialization and aspiration. Unrounded clear vowels occurring stress group initially are preceded by glottal stop, rounded clear vowels occurring word initially by slight labialization.

/i ^h mu/	[<u>h</u> i ^h mu]	'is'
/e ^h 'lowɔ/	[<u>h</u> e ^h lowɔ]	'to dress up'
/'o ^h te/	[<u>wh</u> o ^h te]	'so much'
/u ^h p t ^h an/	[<u>wh</u> u ^h p t ^h an]	'musty smell'
/ale/	[ʔ ^l alə]	'money'
/'alɔ/	[ʔ ^l alɔ]	'I don't do it'
/is/	[ʔis]	'exclamation of anger'
/anse/	[ʔ ^l anɕe]	'side'
/cu anse/	[t ^l su ^l anɕe]	'this side'
/olɔ/	[^w olɔ]	'red'
/cu olɔ i ^h mu/	[t ^l su ^l w ^l olɔ i ^h mu]	'this is red'
/ur/	[^w ur] / [^w ur]	'yellow'
/t ^h e unɪ 'k ^h ocɔ/	[t ^h e unɪ k ^h otɕi]	'he came the day before yesterday'

3. Distribution.

No vowel clusters are found within the syllable. The clear vowels occur after any consonant, but the occurrence of breathy vowels is restricted as follows: They do not occur after the aspirated stops /p^h, t^h, ch, ṭ^h, kh/ and not after the voiceless /ɿ, ɿ̣/, and /h/.

Neutralization of the /a/ - /ɔ/ contrast before /n/ in closed syllables: In syllables closed with /n/ /ɔ/ and /ɔ^h/ do not occur, only /a/ and /a^h/.

III. Higher levels.

A. Syllable.1. Contrast.

We have the following six patterns for the emic syllable:

V CV CCV VC CVC CCVC

<For an exceptional CCCV pattern see section II. A. 3., p. 15>.

V

"'aana"	/'ano/	'elder sister'
"'u"	/u/	'cave'

CV

"'pu"	/pu/	'earthen pot'
"'toh"	/'to ^h /	'ground floor'

CCV

"'plaa"	/pla/	'vegetable'
"'preh"	/'pre ^h /	'eight'

VC

"'ur"	/ur/	'yellow'
"'ohm"	/'o ^h m/	'to entice'

CVC

"'min"	/min/	'name'
"'pehn"	/'pe ^h n/	'young man'

CCVC

"'mrin"	/mrin/	'woman'
"'pyaahng"	/pya ^h ŋ/	'tune'

2. Variation.

Consonant clusters within the syllable. Consonant clustering occurs only syllable initial, and there is a very small number of combinatorial possibilities.

The following chart expresses the combinatorial possibilities for the syllable initial CC-clusters. <It does not take into account the exceptional CCC sequence; as it should be treated as an exception. Compare section II. A. 3 , p. 15>.

first C	second C	yields:
/p/	/r/	/pr/ /mr/ /p ^h r/
/p ^h /	/l/	/pl/ /ml/ /p ^h l/
/m/	/y/	/py/ /my/ /p ^h y/
/c ^h /		/c ^h y/
/ɔ/		/cy/
/k ^h /	/y/	/k ^h y/
/k/		/ky/
/s/		/sy/
/n/		/ny/
/t/	/r/	/tr/
/k/	/w/	/kw/
/t ^h /		
/t̥ ^h / /t̥/		
/h/ /n/	none	
/ɬ/ /l/		
/ɽ/ /r/		
/y/ /w/		

Illustrations:

"pro"	/pro/	'snack'
"'plih"	/'pli ^h /	'four'
"pyaang"	/pyaŋ/	'pathi'
"mram"	/mɾɔm/	'wooden chest'
"'mlohwa"	/'mlo ^h wɔ/	'to pierce'
"myaang"	/myaŋ/	'must'
"phran"	/p ^h rɔŋ/	'to unfasten'
"phle'la"	/p ^h le'la/	'to open up'
"phyong"	/p ^h yɔŋ/	'to jump'
"chyo"	/c ^h yɔ/	'direction'
"cyah"	/cyɔ ^h /	'tea'
"khyaawa"	/k ^h yawɔ/	'throw away'
"kyalwa"	/kyɔlɔ/	'to swim'
"sya"	/syɔ/	'meat'
"ngyewa"	/ŋyewɔ/	'to laugh'
"truhma"	/tru ^h mɔ/	'next year'
"kwaahri"	/kwa ^h ri/	'up there'

Within a single syllable no vowel clusters occur.

3. Distribution.

Syllables with breathy vowels occur only in the first syllable-slot of a morpheme.

The contrastive pitch features are a characteristic of the morpheme, and in disyllabic morphemes they are spread over both syllables of the morpheme. <Compare IV. B. 2., p. 41>.

IV. Items of special interest: Tone system.

A. Voice quality.1. Contrast.

The contrast between clear and breathy vowels is striking and used very widely in Thakali. <There is a large number of clear/breathy pairs which contrast in meaning. For specific description of breathiness see section II. C., Breathiness, p. 22>.

Monosyllables:

"mi"	/mi/	[m _i]	'eye'
"mih"	/mi ^h /	[m _i ^h]	'person'
"le"	/le/	[le]	'tongue'
"leh"	/le ^h /	[le ^h]	'act'
"saa"	/sa/	[sa]	'breath'
"saah"	/'sa ^h /	[sa ^h]	'lost'
"kyu"	/kyu/	[k _{yu}]	'water'
"kyuh"	/'kyu ^h /	[k _{yu} ^h]	'sheep'
"ngo"	/ŋo/	[ŋ ^w o]	'hair parting'
"ngoh"	/ŋo ^h /	[ŋ ^w o ^h]	'forehead'
"co"	/co/	[tso]	'that'
"coh"	/co ^h /	[tso ^h]	'son'
"pen"	/pen/	[pen]	'small frog'
"pehn"	/'pe ^h n/	[pe ^h n]	'young man'
"myaang"	/myaŋ/	[myaŋ]	'must'
"myaahng"	/mya ^h ŋ/	[mya ^h ŋ]	'to taste'
"tum"	/tum/	[t _{um}]	'to wrap'
"tuhm"	/tu ^h m/	[t _u ^h m]	'to spin'

"tong"	/ton/	[<u>t</u> on]	'new moon'
"tohng"	/'to ^h ŋ/	[<u>t</u> o ^h ŋ]	'spindle'
"tar"	/tɔr/	[<u>t</u> ɔɸ]	'white'
"tahr"	/tɔ ^h r/	[<u>t</u> ɔ ^h ɸ]	a silk cloth'

Disyllables:

"tingi"	/'tini/	[<u>t</u> iŋi]	'today'
"tihngi"	/ti ^h ni/	[<u>t</u> i ^h ni]	'sun'
"rimpa"	/rimpɔ/	[ɸi <u>m</u> bɔ]	'short'
"rihmpa"	/ri ^h mpɔ/	[ɸi ^h <u>m</u> bɔ]	'long'
"ngimpa"	/ŋimpɔ/	[ŋi <u>m</u> bɔ]	'old'
"ngihmpa"	/ŋi ^h mpɔ/	[ŋi ^h <u>m</u> bɔ]	'fear'
"Taangpa"	/tɔŋpɔ/	[<u>t</u> ɔŋbɔ]	'to break'
"Taahngpa"	/tɔ ^h ŋpɔ/	[<u>t</u> ɔ ^h ŋbɔ]	'to offer'
"paangpa"	/pɔŋpɔ/	[pɔ <u>ŋ</u> bɔ]	'to abstain'
"paahngpa"	/pɔ ^h ŋpɔ/	[pɔ ^h <u>ŋ</u> bɔ]	'to quarrel'
"caca"	/'cɔcɔ/	[tsɔ <u>t</u> sɔ]	'salt'
"cahca"	/cɔ ^h cɔ/	[tsɔ ^h <u>t</u> sɔ]	'baby'

In the preceding and following examples of this section pitch contours are phonemically and orthographically marked with '/' and "'" before the syllable, level pitches are not marked. For more details see section IV. B. and C., p. and following.

2. Variation.

Breathy vowels occurring word initially are preceded by aspiration, word finally they are followed by some aspiration. Word medial no aspiration can be heard.

"ihmu"	/i ^h mu/	[hi ^h mu]	'is'
"eh'lawə"	/e ^h 'lawə/	[he ^h lawə]	'to dress up'
"uhp"	/u ^h p/	[^w hu ^h p]	'musty'
"peh"	/pe ^h /	[pe ^h h]	'wife'
"na ^h "	/nə ^h /	[nə ^h h]	'ear'
"'kyuh"	/'kyu ^h /	[kyu ^h h]	'sheep'
"nohngori"	/no ^h gori/	[nə ^h ŋəfi]	'mornings'
"puh ^h ri"	/pu ^h ri/	[pu ^h ɾ.i]	'below'
"tahna"	/tə ^h nə/	[tə ^h nə]	'many'

3. Distribution.

a> Breathiness is relevant only on the first syllable of a morpheme. In two syllable morphemes we get only the sequences clear + clear syllable and breathy + clear syllable.

"kohca"	/ko ^h cə/	[ko ^h tsə]	'big knife'
"pahle"	/pə ^h le/	[pə ^h le]	'foot'
"sihtaang"	/si ^h taŋ/	[si ^h taŋ]	'anger'
"'tuhli"	/'tu ^h li/	[tu ^h li]	'tailor'
"'cahme"	/'cə ^h me/	[tsə ^h mə]	'daughter'
"'nahma"	/'nə ^h mə/	[nə ^h mə]	'swamp'

"'aama"	/ʼamɔ/	[ʔamɔ]	'mother'
"'tapaang"	/ʼtɔpɑŋ/	[t̚ɔpɑŋ]	'Thakali'
"'thorɑŋ"	/tʰɔrɔŋ/	[t̚ʰɔrɔŋ]	'first'

b> Breathy vowels do not occur after the aspirated stops, the aspirated affricate, the voiceless /t̚, t̚r/ and /h/. Here only clear vowels occur.

"'phaamar"	/pʰamɔr/	[pʰamɔɾ]	'north wind'
"'thaasaang"	/tʰasaŋ/	[t̚ʰasaŋ]	'Thak Khola'
"'chong"	/cʰoŋ/	[tsʰoŋ]	'business'
"'Thicam"	/t̚ʰicom/	[t̚ʰitsɔm]	'only'
"'khorɔ"	/kʰɔrɔ/	[kʰɔrɔ]	'upwards'
"'Lap"	/l̚ɔp/	[l̚ɔp]	'hot'
"'Rup"	/r̚up/	[r̚up]	'thread'
"'haang"	/han/	[han]	'court yard'

Is is after the unaspirated stops, affricate, after /s/, after the voiced consonants and in syllable initial vowels where we get the clear/breathy contrasts.

"'pulu"	/pulu/	[pulu]	'hat'
"'puhlunŋ"	/puʰlunŋ/	[puʰlunŋ]	'bug'
"'tim"	/tim/	[tim]	'at once'
"'tihm"	/ʼtiʰm/	[tiʰm]	'house'
"'cika"	/ʼcika/	[t̚ʃika]	'barley'
"'cihkaang"	/ciʰkaŋ/	[t̚ʃiʰkaŋ]	'storeroom'

Thakali Phonemic Summary - 38

"Taar"	/t̪ar/	[t̪aɪ̯]	'rack'
"Taahngse"	/t̪a ^h ŋse/	[t̪a ^h ŋs̪e]	'per'
"kum"	/kum/	[kum]	'fist'
"kuhng"	/ku ^h ŋ/	[ku ^h ŋ]	'middle'
"sung"	/suŋ/	[suŋ]	'mouth'
"suhɾ"	/su ^h ɾ/	[su ^h ɾ̥]	'corner'
"mom"	/mom/	[mɔ̯m]	'grandmother'
"mohmci"	/mo ^h mci/	[mɔ̯ ^h mdʒi]	'chin'
"naangi"	/naŋi/	[naŋi̯]	'the day after tomorrow'
"naahngri"	/na ^h ŋri/	[na ^h ŋɾi]	'inside'
"ngongo"	/ŋoŋo/	[ŋ ^w ɔ̯ŋɔ̯]	'before'
"ngohnaa"	/ŋo ^h na/	[ŋ ^w ɔ̯ ^h na]	'night'
"le"	/le/	[le]	'tongue'
"lehm"	/le ^h m/	[le ^h m]	'word'
"rewa"	/rewɔ̯/	[ɾewɔ̯]	'to get up'
"rehwa"	/re ^h wɔ̯/	[ɾe ^h wɔ̯]	'to grind'
"yaa"	/ya/	[ya]	'hand'
"'yaah"	/'ya ^h /	[ya ^h]	'male yak'
"ohso"	/o ^h so/	[^w o ^h so]	'like that'

c> Any vowel can be breathy:

"tihwa"	/ti ^h wɔ̯/	[t̪i ^h wɔ̯]	'to stammer'
"tehwa"	/te ^h wɔ̯/	[t̪e ^h wɔ̯]	'to drive away'

"taahwa"	/ta ^h wə/	[t _̣ a ^h wə]	'to hit'
"tuhwa"	/tu ^h wə/	[t _̣ u ^h wə]	'tired'
"tohwa"	/to ^h wə/	[t _̣ o ^h wə]	'to meet'
"tahna"	/tə ^h nə/	[t _̣ ə ^h nə]	'many'

d> Breathy vowels occur in all of the six emic syllable types:

CV	"koh"	/ko ^h /	'shoulder'
CVC	"kehn"	/ke ^h n/	'bread'
CCV	"'praah"	/'pra ^h /	'flour'
CCVC	"pruhp"	/pru ^h p/	'to write'
V	"eh'lawə"	/e ^h 'ləwə/	'to dress up'
VC	"ihnlase"	/i ^h nlase/	'may be'

B. Pitch.

Note:

At the present stage of the research we have not yet been able to classify clear monosyllabic nouns and particles. The clear monosyllabic items in the examples below are verb stems.

1. Contrast.

In the preceding section on voice quality we have seen that low pitch is conditioned by breathiness and high pitch by the absence of breathiness on vowels. But within both groups we have a further contrast between level and contour pitches.

In clear it is a falling contour, which starts a little higher than the level pitch with which it contrasts.

Thakali Phonemic Summary - 40

The fall stretches
over 1 - 2 syllables.
On the third it is level:

With level it is as
following:

[tò]	'to roast'	[nā]	'to carry'
[tòwə]	'roasting'	[nāwə]	'carrying'
[tòwəfi]	'in order to roast'	[nāwəfi]	'in order to carry'

In breathy it is a rising-falling contour which starts on the same high as the level low pitch, rises a good deal and ends in a slight glide down.

The contour stretches
over 1 - 3 syllables:

In level it is as
following:

[ru ^h]	'to stir'	[tsu ^h]	'to cook'
[ru ^h wə]	'stirring'	[tsu ^h wə]	'cooking'
[ru ^h wəfi]	'in order to stir'	[tsu ^h wəfi]	'in order to cook'

Note:

The illustrations in this section are not to be listened to in isolation, but in frames. For simplification the frames are not given here, but the pitch contours of the examples are how they occur in utterances. If the items are pronounced in isolation, the overriding intonation may change the pitch contours.

Minimal contrasts:

[sowə]	'hot' <food>	[sowə]	'turning round'
[ts ^h wə]	'grazing'	[ts ^h wə]	'feverish, hot'
[syuwə]	'to pick vegetable leaves'	[syuwə]	'lining up'

[p ^h yewō]	'sorting out'	[p ^h yewō]	'appearing'
[alē]	'younger brother'	[alē]	'money'
[tisa]	'food for one meal'	[tisa]	'a little'
[tsu ^h wō]	'dividing'	[tsu ^h wō]	'cooking'
[kyo ^h wō]	'ploughing'	[kyo ^h wō]	'beautiful'
[to ^h wō]	'hot' <weather>	[to ^h wō]	'to read a religious book'
[te ^h wō]	'boiling'	[te ^h wō]	'driving away'
[ta ^h ŋ]	'intimate'	[ta ^h ŋ]	'to serve, offer'
[nye ^h]	'liver'	[nye ^h]	'milk'
[ti ^h]	'one'	[ti ^h]	'skin'
[tu ^h]	'six'	[tu ^h]	'grain'

In this section, phonemic contours are marked with /'/' before the first syllable, and level pitch is not marked.

2. Variation.

For the first syllable of a morpheme we can make the following statement:

/level/ The pitch is high with clear and low with breathy vowels.

/contour/ The pitch is extra-high-falling with clear and low-rising-falling with breathy vowels.

The pitch of the second syllable of a morpheme is conditioned by the nature of the first syllable, that is, contours and level pitches spread over both syllables. Therefore, if a disyllabic morpheme is level-breathy, the second syllable has a clear vowel with low pitch.

"me"	/me/	[mē]	'to ask'
"pin"	/pin/	[pīn]	'to give'
"pulu"	/pulu/	[pūlū]	'cap'
"miku"	/miku/	[mīkū]	'smoke'
"'khari"	/'kʰori/	[kʰōfi]	'idea'
"'cawala"	/'cawola/	[tsawolō]	'food'
"'kaplo"	/'kaplo/	[kəp̄lo]	'brain'
"pih"	/pi ^h /	[pī ^h]	'to say'
"lehm"	/le ^h m/	[lē ^h m]	'to lick'
"pahle"	/pə ^h le/	[pə ^h le]	'foot'
"kohca"	/ko ^h ca/	[ko ^h tso]	'big knife'
"'nuh"	/'nu ^h /	[ny ^h]	'to sleep'
"'caahng"	/'ca ^h ŋ/	[tsa ^h ŋ]	'to send'
"'nahma"	/'nə ^h mə/	[nə ^h mə]	'swamp'
"'tuhli"	/'tu ^h li/	[tu ^h li]	'tailor'

Affixes:

There are also two classes of affixes for pitch: Tonic affixes and atonic affixes. The breathy affixes and the clear contour <extra high-falling> affix are tonic, that is, they manifest a constant pitch contour throughout their distribution.

Clear level affixes are atonic, that is, their pitch is conditioned by the stem to which they are affixed as follows:

The pitch of clear level affixes is low after a level breathy stem, <1-3 affixes> and high after a level clear stem.

The high-falling contour of a clear stem spreads to the first affix, the second and third are level.

The rising-falling contour of a breathy stem spreads over the clear affixes <1-3 affixes>.

After a clear level stem the affixes are level as well. More than three level clear affixes in a row have not yet been found.

Atonic affixes on verb stems:

/cu ^h /	[<u>tsu^h</u>]	'to cook'
/cu ^h wɔ/	[<u>tsu^hwɔ</u>]	'cooking'
/cu ^h wɔri/	[<u>tsu^hwɔfi</u>]	'in order to cook'
/cu ^h wɔrie/	[<u>tsu^hwɔfi</u> ̃̄]	'in order to cook also'
/'pa ^h /	[<u>pa^h</u>]	'to bring'
/'pa ^h wɔ/	[<u>pa^hwɔ</u>]	'bringing'
/'pa ^h wɔri/	[<u>pa^hwɔfi</u>]	'in order to bring'
/'pa ^h wɔrie/	[<u>pa^hwɔfi</u> ̃̄]	'in order to bring also'
/nɔ/	[<u>nɔ</u>]	'to carry'
/nɔwɔ/	[<u>nɔwɔ</u>]	'carrying'
/nɔwɔri/	[<u>nɔwɔfi</u>]	'in order to carry'
/nɔwɔrie/	[<u>nɔwɔfi</u> ̃̄]	'in order to carry also'
/'tɔ/	[<u>tɔ</u>]	'to roast'
/'tɔwɔ/	[<u>tɔwɔ</u>]	'roasting'
/'tɔwɔri/	[<u>tɔwɔfi</u>]	'in order to roast'
/'tɔwɔrie/	[<u>tɔwɔfi</u> ̃̄]	'in order to roast also'

Atonic affixes on nouns:

/ro ^h /	[ro ^h]	'friend'
/ro ^h ri/	[ro ^h fi]	'to the friend'
/co ^h co/	[tso ^h tso]	'child'
/co ^h cori/	[tso ^h tsofi]	'to the child'
/'me ^h /	[me ^h]	'cow'
/'me ^h ri/	[me ^h fi]	'to the cow'
/'co ^h me/	[tso ^h me]	'daughter'
/'co ^h meri/	[tso ^h me ^h fi]	'to the daughter'
/kola/	[kōla]	'boy'
/kola/	[kōla ^h fi]	'to the boy'
/'polo/	[pōlo]	'nettle'
/'polori/	[pōlo ^h fi]	'in the nettles'

Tonic affix - breathy: /-ca^h/ 'plural'

/'coco ^h ca ^h /	[tsotsotsa ^h]	'salt' <pl.>
/nakaca ^h /	[nakatsa ^h]	'hens'
/'tu ^h ca ^h /	[tu ^h tso ^h]	'manure' <pl.>
/'no ^h moca ^h /	[no ^h motsa ^h]	'swamps'
/ku ^h nca ^h /	[ku ^h ndza ^h]	'winters'
/'ti ^h nica ^h /	[ti ^h nitso ^h]	'suns'

Tonic affixes - clear: /-'com/ 'emphasis'

/-'pre/ 'with'

/'coco'com/	[tsotsotsom]	'salt' <emphatic>
/naka'com/	[nakatsom]	'hen' <emph.>

/tu ^h com/	[tu ^h tsom]	'manure' <emph.>
/no ^h mo ^h com/	[no ^h mo ^h tsom]	'swamp' <emph.>
/ku ^h n ^h com/	[ku ^h ndzom]	'winter' <emph.>
/ti ^h ni ^h com/	[ti ^h nit ^h tsom]	'sun' <emph.>
/pe ^h /	[pe ^h]	'wife'
/pe ^h pre/	[pe ^h pre]	'with the wife'
/pe ^h ce/	[pe ^h tse]	'by the wife'
/pe ^h ce ^h com/	[pe ^h tset ^h tsom]	'by the wife' <emph.>

Pitch variation under intonation.

The bearing of intonational stress and intonational pitch contours on the lexical pitch has not yet been studied in detail, but some fragmentary statements of the analysis can be made at this point.

a) Up- and downdrift. The phonological sentence is characterized by a general updrift in pitch in the pre-margin and a general downdrift in the post-margin.

<Note: In the following, data without brackets is written phonemically except for intonation contours and stress signs.>

pre- margin	peak	post- margin	<The translation in brackets is a word by word translation>.
'cu	"toyace	'lɔsi 'mumu	'This is made of potatoes.'
/cu	'toyace	'lɔsi 'mumu:/	<this potatoe-from made is>
'cu	"kolace	'lɔsi 'mumu	'A boy made this.'
/cu	kolace	'lɔsi 'mumu:/	<this boy-by made is>
'cu	"tu ^h ce	'lɔsi 'mumu	'This is made of grains.'
/cu	tu ^h ce	'lɔsi 'mumu:/	<this grain-from made is>

Thakali Phonemic Summary - 46

pre- margin	peak		post- margin	
'cū	"me ^h ce	'pa ^h si	'mumu	'A cow brought this.'
/cu	'me ^h ce	'pa ^h si	'mumu./	<this cow-by brought is>

pre-margin	peak		post-margin	
'ŋōce	'cūri	"poloca ^h	'mraŋci	'I saw nettles here.'
/ŋōce	cūri	'poloca ^h	mraŋci./	<I-by here nettles saw>
'ŋōce	'cūri	"nōṭica ^h	'mraŋci	'I saw bones here.'
/ŋōce	cūri	nōṭica ^h	mraŋci./	<I-by here bones saw>

b> Intonational stress contours on affixes. Some intonation patterns are characterized by heavy stress with rising or falling pitch or a level decrescendo on the last syllable of the phonological sentence. Clear level affixes in this position are no longer under the influence of the pitch of the stem, but take over the intonation features. The resulting pitch contours are not relevant on the syllable or morpheme level. On the sentence level they signal contrastive intonation patterns and can be symbolized by different punctuation marks.

/-ci/ 'past tense affix' - under the influence of the stem:

'tiŋi	'thēce	'coci	'mū ro	'Today he had eaten, they said.'
/'tiŋi	thēce	'coci	mu ro./	<today he-by eat is reported speech particle>
'tiŋi	'thēce	'cu ^h ci	'mū ro	'Today he had cooked, they said.'
/'tiŋi	thēce	cu ^h ci	mu ro./	<today he-by cooks reported speech particle>

Under the influence of intonation pattern:

'th^hece 'tosi 'coci
 /t^hece 'tosi 'coci./ 'When he had roasted it, he eat.'
 <he-by roasted eat>

'th^hece 'yesi 'cu^hci
 /t^hece yesi[^] cu^hci./ 'When he had returned, he cooked.'
 <he-by returned cooked>

/-wa/ 'present indefinite tense affix' - under the influence of the stem:

'tini 'ŋoce 'cu^hwa 'i^hmu
 /'tini ŋoce cu^hwa i^hmu./ 'Today I am cooking.'
 <today I-by cooking am>

Under the influence of intonation:

'tini 'kya^hŋce 'cu^hwa
 /?'tini 'kya^hŋce cu^hwa?/ 'Are you cooking today?'
 <today you-by cooking>

'cu^hwa 'tini 'ŋoce 'cu^hwa
 /cu^hwa.'tini ŋoce cu^hwa./ 'Yes, I am going to cook today.'
 <Cooking. Today I-by will-cook>

C. Tone versus stress.

The analysis given thus far takes the basic contrasts of the system to be clear versus breathy and contour versus level pitch.

	contour	level
clear	extra high-falling / ' /	high / # / <not marked>
breathy	low-rising-falling / ' / + /h / after vowel	low / # / only /h / after vowel

Why tone and not stress?

In the earlier stages of the analysis we had been talking of a primary versus secondary stress contrast instead of a pitch contrast, because in the pattern in which we met the contrast first, it can be heard as a stress contrast. This is exemplified by the following:

"cu ^h wɔ	'cooking'
'cu ^h wɔ	'dividing'
"sowɔ	'hot' <food>
'sowɔ	'turning round'

As we went on investigating with other frames and patterns it was very difficult to hear and decide on stress differences, but the pitch contrast remained fairly constant. If the analysis had been carried out in terms of stress, primary and secondary stress would always have had to be described in terms of level pitches and contours. We therefore prefer to talk about a tone system at the present stage of the research.