LADAKHI
PHONETIC READER

SANYUKTA KOSHAL

CENTRAL INSTITUTE OF INDIAN LANGUAGES
PHONETIC READER SERIES—18

Editor

B. G. MISRA

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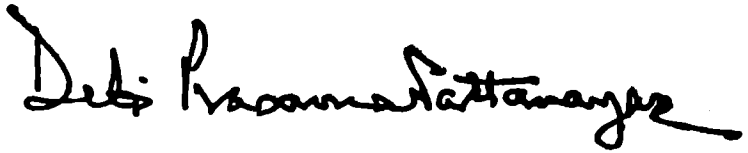
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FOREWORD

The Central Institute of Indian Languages was set up on the 17th July, 1969 with a view to assisting and co-ordinating the development of Indian languages. The Institute was charged with the responsibility of serving as a nucleus to bring together all the research and literary out-put from the various linguistic streams to a common head and narrowing the gap between basic research and developmental research in the fields of languages and linguistics in India.

The Institute and its four Regional Language Centres are thus engagedin research and teaching which led to the publication of a wide-ranging variety of materials. Preparation of materials designed for teaching/learning at different levels and suited to specific needs is one of the major areas of interest of the Institute. Basic research relating to the acquisition of language and study of language in its manifold psycho-social relations constitute another broad range of its interest. The publications will include materials produced by the members of the staff of the Central Institute of Indian Languages and its Regional Language Centres and associated scholars from universitiesand institutions, both Indian and foreign.

The Central Institute of Indian Languages has initiated the *Phonetic Reader Series* in Indian languages with a view to presenting the range of phonetic variation obtaining in this sub-continent

and demonstrating the closeness of language on the basis of phonetic patterning. These Readers are biased towards learning the sound systems of languages. Thus it is hoped that this series will be of interest to both scholars who are interested in phonetic studies and practical learners of languages who wish to make a beginning in their language study.

If these materials help solving the problems in the State and help in understanding the people speaking the language, then our efforts will have been amply rewarded.

Director

PREFACE

The Census of India 1961 enumerates 1652 mothertongues in the country. Besides the languages listed in the Eighth Schedule of the Indian constitution, there are many other languages, tribal as well as non-tribal, with substantial number of mothertongue speakers. Such languages belong to any one of the four language families represented in India. Ladakhi, a language belonging to the Sino-Tibetan sub-family, is one of them. Ladakhi is spoken in the Ladakh District of Jammu & Kashmir State by 52,714 speakers (according to the Census of India, 1961).

A large number of Ladakhi speakers belong to Buddhist faith. Ladakhi is prevalent mostly as a means of oral communication among its speakers. They used Tibetan language for education, literary expression and religious tradition till recently.

During the last 25 years a new generation of Ladakhi speakers has come up which has been educated in India and is now working for the development of Ladakhi language as a means of school education as well as literary expressions.

As Ladakhi is mainly a language of oral communication it has developed different regional varieties like Stopta, Shamma, Nubra, Zanskar and Leh. Among these, Leh variety is

considered standard and is being developed as such. Not only
are there regional variations at the phonological and grammatical
levels among Ladakhi dialects, there is language variation corre-
lated to the social stratification of the speech community. Thus
there are differences between the language of the monks and the
common man. There is also an impact of Tibetan on different
linguistic levels of Ladakhi. Thus the Ladakhi speech situation
is quite complex.

As Ladakhi is sought to be introduced at by the lower levels
of education there is an urgent necessity of studying the language
in all its aspects. The Central Institute of Indian languages under
its Tribal and Border Languages Research Programme has under-
taken a comprehensive study of Ladakhi. The Institute is
preparing a phonetic reader, a synchronic grammar, a multilingual
dictionary and instructional materials. The Institute has also
collected a vast amount of folk literature, folk songs as well as
folk narrations, which are being analysed, edited and translated
for publication. It is visualised that with the completion of this
intended package of research a study of background language
materials in the language would have been completed.

The present study is based mainly on the Central Ladakhi
variety (as spoken in Leh), which is considered as the standard
variety. However, adequate material was collected on language
variation in Ladakhi and prominent phonological as well as
phonetic variations are pointed out in this Reader.

The present Phonetic Reader differs to an extent from other
publications in the series in terms of the order of presentation as
well as emphasis. Thus Ladakhi sounds are described only as
allophones of different phonemes to which they belong. Compre-
hensive and detailed analysis of the Tibetan writing system as
used for Ladakhi is also presented and shapes of letters used in
fast and slow handwriting, etc., are also given.

The present Phonetic Reader like other phonetic readers in the series is intended for the language teacher, the educated adult learner as well as for the linguist. Taking into consideration the multiple purpose of the Phonetic Reader an effort has been made to present the phonetics and phonology of Ladakhi with as little terminological complexity as possible without sacrificing sufficient and accurate information about Ladakhi phonology.

The study is divided into five chapters.

The *first chapter* gives a brief description of the mechanisms of production of speech sounds, speech organs and their functions and a classification of speech sounds according to the principles of articulatory phonetics.

The *second chapter* gives preliminary background information on Ladakhi Llanguage and describes the elicitation procedures followed and the details of the informants used. It further describes the kinds of variation at the phonemic and sub-phonemic levels in the language.

The *third chapter* gives an account of the phonological system of Ladakhi. It gives the phonemic inventory in the beginning. Then the phonemes, their allophones and distribu-tions are presented. Information is also given on specific problems like vowel length, nasalisation, etc. In the end of this chapter an account of the consonant clusters is also included.

The *fourth chapter* gives a detailed analysis of the Ladakhi script. It also gives phonemic-graphemic correspondences and points out all the irregularities.. Details of punctuation, marking of syllable boundaries, etc., are also given. In the end of this chapter correspondence between the printed shape and their slow and fast handwritten shapes are also given. This chapter also gives a system of Devanāgari symbols which could be adopted for

writing Ladakhi. It is followed by a system of Perso-Arabic symbols for the same purpose.

The *fifth chapter* gives comprehensive phonetic drills utilising all possible sets of comb inations of vowels and consonants. It is hoped that the phonetic drills will go a long way in inculcating correct pronunciation of Ladakhi sounds.

The Phonetic Reader does not claim to be complete or perfect. Certain aspects of Ladakhi phonology have been left unanalysed. Thus there is no description of the intonational features in the present Phonetic Reader. Although it is true that the pronunciation of a language can be more effectively learnt with the help of a native teacher, the usefulness of a Reader like this cannot be under estimated. It is hoped that the present Reader will be useful to the learners and teachers of Ladakhi and also to linguists working on Ladakhi.

B. G. MISRA

ACKNOWLEDGEMENT

CONTENTS

SYMBOLS USED

/   /   Slant brackets enclose phonemic transcription.

[   ]   Square brackets enclose phonetic transcription.

————   Underlining is used for transliteration of the Ladakhi script materials in Chapter 4.

–   In Ladakhi items written in phonetic or phonemic transcription or graphemic transliteration, it marks syllable boundary.

~   Marks variation between items.

C   a consonant

V   a vowel

1. INTRODUCTION

1. 1.   The present study describes the sound system of Ladakhi and analyses the sounds into significant units of phonological description.   It gives a comprehensive statement of the distribution of different phonemes and their sequences. Furthermore, it also gives an introduction to the Ladakhi writing system and shows its relationship to Ladakhi phonology.

1. 1. 1.   The study is divided into five chapters. Chapter I includes a brief description of the mechanism of production of speech sounds, speech organs and their functions, and a classification of the speech sounds according to the principles of articulatory phonetics.   Efforts have been made to use as little technical terminology as possible without sacrificing accuracy and clarity of description.

1. 1. 2.   Chapter II gives a brief account of the methodology used in the study.   It describes the elicitation technique, the bases of data collection, the scope of the analysis, the theoretical frame-work followed for the phonological analysis and the conceptual frame-work. It further includes a brief account of the main Ladakhi dialects, their regions and distinguishing features at the phonological as well as sub-phonemic levels. The chapter also discusses the types of free variation occurring in Ladakhi at the phonological level.

1.1.3.   Chapter III describes the phonemes of the language, their allophones and distributions.   It also includes an analysis of the consonant clusters occuring in the language.

1. 1. 4.   Chapter **IV** describes the traditional Ladakhi writing system.   It gives an analysis of the different letters, the alternants of the shapes of letters, if any, and their combinations. The phonemic values of the letters are given and all irregularities pointed out.   This chapter also includes information on Ladakhi punctuation system and exemplifies different styles of handwriting.

1. 1. 5.   Chapter **V** gives comprehensive phonetic drills, utilising all possible sets of vowels and consonants separately.

The present study on the one hand aims at giving a phono-logical description of the language for the linguist and, on the other hand, gives useful information for the language teacher for his reference and for classroom use. Phonetic drills are specifically aimed at classroom practice for non-native speakers learning Ladakhi.

1. 2.   In order to understand the mechanism of speech production, it is necessary to have a sound familiarity with the speech organs and their functions.   A schematic diagram of sagittal section of the speech tract is given here. The main organs of speech are also identified and enumerated in this diagram. The reader is requested to familiarise himself with the organs of speech and their locations in the speech tract.

Speech sounds are produced by the modification of the air stream while it is exhaled or inhaled.   Articulation of speech sounds by the modification of the inhaled air stream is relatively rare ; however, implosive stops are not unknown in Indian languages. Sindhi, for instance, has such stops.   Speech sounds are also produced by the modification of the air stream which is

1a Upper lip
1b Lower lip
2a Upper teeth
2b Lower teeth
3 Tip of the tongue
4 Blade of the tongue
5 Front of the tongue
6 Back of the tongue (also called dorsum)
7 Root of the tongue
8 Alveolar ridge (also called teeth ridge)
9 Hard palate
10 Soft palate (also clled velum)
11 Uvula
12 Velic
13 epiglottis
14 Glottis
15 Vocal cords
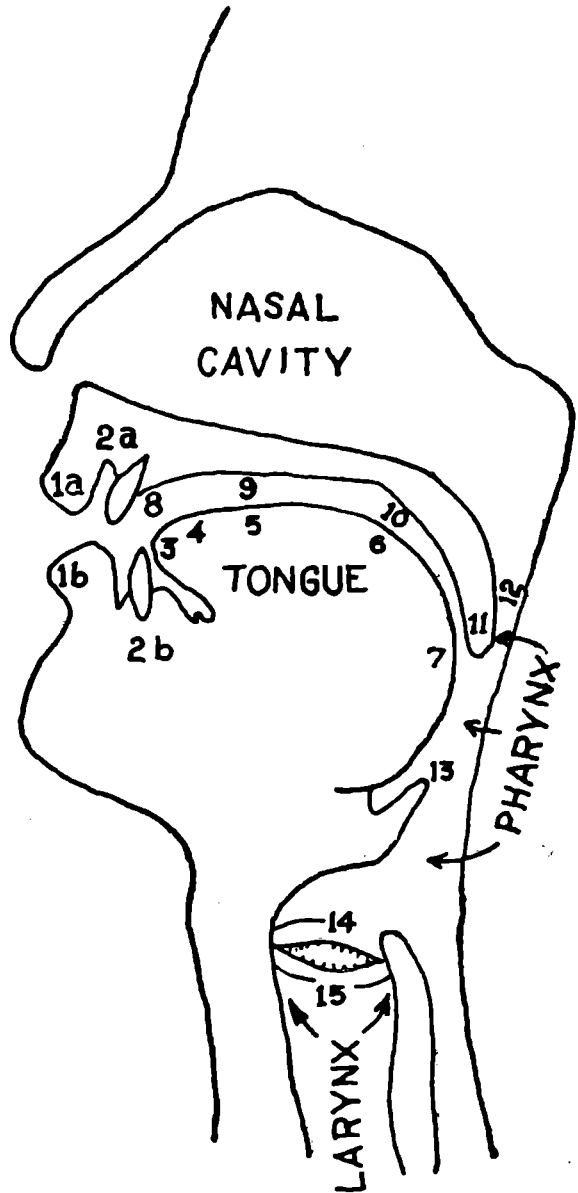
Sagittal Section of Speech Tract

formed in the pulmonic region and is pressed out from the lungs. It then passes through the vocal cords where it may or may not be impeded. Then it passes through the oral cavity or the nasal cavity or both. In the oral cavity the different shapes of the

cavity are formed and the air current is exhaled in a specified manner resulting in different speech sounds.

Speech organs can be classified as either articulators or points of articulation. At the time of production of the speech sound when any movable part of the vocal tract causes a partial or complete closure of the air passage, it becomes an articulator. Thus all movable organs of speech are potential articulators since they may become active ones by fulfilling the conditions given above. Potential articulators are the lips, the tongue (tip, blade, front, back and root), the velum, uvula and the velic. The epiglottis and the vocal cords have also been considered as articulators.

Any vocal organ which is accessible to the contact or near contact of a potential articulator is called a potential point of articulation and becomes an active one when a stricture (partial or complete) is made at that point. These are the upper teeth, alveolar ridge, hard palate and the soft palate.[1]

Where two organs of speech which are flexible move towards each other to produce a partial or a complete contact, it is not strictly possible to identify one of them as the articulator and the other as the point of ariculation ; therefore either name is suitable as term of reference for such organs.

a) LIPS :

The upper and lower lips may both be used in articulation. When they are in close contact the stop sounds are produced ; when they leave some gap, fricatives and some other sounds are

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[1] Pike, K. L. : *Phonetics*, Ann Arbor : The University of Michigan 1943 p. 121

[2] *Ibid*, p. 123

produced. Their shape along the scale of rounding to unrounding is one of the criteria for the classification of vowel sounds. In some articulations only one of the lips is involved. However, most of the languages of the world use only the lower lip in this context.

b) TEETH :

In the production of speech sounds normally back side of the teeth is used. Sounds can be produced by the articulator coming in between the teeth or anywhere on the back.

c) ALVEOLAR RIDGE :

The term alveolar ridge is usually used for that part of the roof of the mouth which starts from gums to the front part of the palate.

d) PALATE :

The palate covers the entire region of the roof of the mouth. The front part of the roof of the mouth is called hard palate and the back part of the soft palate. Dependent upon the sounds of the specific language, different points of the palate are used in the production of different speech sounds in specific languages. The back part of the soft palate is called the velum. Velum is that part of the palate which lies at the extreme end of the soft palate.

e) UVULA :

The extreme end of the roof of the mouth is called uvula. It is a hanging portion of flesh. When raised it closes the nasal passage blocking the air current from entering to the nasal cavity; when lowered, the air current can pass either partially or fully through the nasal cavity. If the air current passes fully through the nasal cavity, nasal sounds are produced; when air current passes partially through the nasal cavity· and partially through the oral cavity, nasalized sounds are produced.

f) EPIGLOTTIS :

The epiglottis is in the pharynx. Pharyngal sounds are produced in this region.

g) LARYNX :

The larynx is a cartilagious structure at the summit of the trache. It contains the vocal cords which are two horizontal folds of elastic tissue, one on the either side of the passage. These can be completely closed, can remain wide open or in different positions in between. Voicing is produced by the vibrations of the vocal cords. When the vocal cords remain wide open, the air current passes without obstruction and voiceless sounds are produced, e. g., p, t, k, s. When the vocal cords are stretched taut with little space between them so that passing air stream forces itself through thus vibrating the vocal cords, voicing is produced. Such sounds are called voiced sounds, e.g., b, d, g, z, etc. Most of the vowel sounds in different languages are voiced. The position of the vocal cords and the kind of vocal turbulance of the passing air stream also produces whisper and murmured sounds.

1. 3. CLASSIFICATION OF SPEECH SOUNDS :

Speech sounds are divided firstly into two broad categories : segmental and supra-segmental. Supra-segmental sounds are those phonetic features which 'co-occur with segmental sounds, thus features of length, nasalization, tone, stress and intonation etc., are termed as suprasegmentals. Segmental sounds are broadly classified into vowels and consonants.

1.3.1. VOWELS:

Vowels are those speech sounds which are produced when the air passes through the oral cavity with no localized obstruction.

Different vowel sounds are produced due to the modification of the oral cavity by the tongue and the lips. Dependent upon the part of the tongue involved in the production of a vowel sound and the height to which that part of the tongue is raised, different kinds of vowels are produced. The shape of the lips from rounded to unrounded also determines the quality of the vowel sound.

Vowels are classified as front, central and back Front and back vowels are produced when the front of the tongue, and the back of the tongue are respectively involved in the articulation. Central vowels are produced when the front part of the back of the tongue (also called central part of the tongue by some phoneticians) is raised towards the mid palate.

Thus when the front of the tongue is used in the articulation the sound produced is called a front vowel eg. i, e, E, etc., and when the centre of the tongue is involved it is called a central vowel, eg., ə, ɐ, etc., if the back of the tongue is used it is called a back vowel, eg. u, o, ɔ etc.

The tongue can be raised to a certain height for the production of vowels. Phoneticians have divided the potential height maximally and minimally used for the articulation of vowels differently. Thus in the IPA (International Phonetic Association) system four degrees of height are accepted, viz , close, half-close, half—open, open· Some scholars have accepted only three degrees of height : high, mid, and low. For a more refined articulatory description, these have been further subdivided into seven sub-categories higher-high, lower-high, higher-mid, mean-mid, lower-mid, higher-low, lower-low.

If the lips are relatively rounded during the articulation of vowels, rounded vowels are produced, while, if the lips remain comparatively spread, unrounded vowels are produced.

b) LABIO-DENTAL sounds are produced when the lower lip and the upper teeth are involved, e.g. f, v, etc.

c) DENTAL sounds are produced when the tip of the tongve makes a contact with the back of the teeth, e g. ṭ, ḍ, ṇ.[1]

d) ALVEOLAR Sounds are produced when she alveolum acts as the point of articulation, e.g. t, d, n etc.

e) In the articulation of retroflex sounds hard palate is used as the point of articulation. The tongue curls back and its back or reverse is involved in the articulation. Such sounds are ṭ, ḍ, ṣ, ṇ, etc.

f) PALATAL sounds are produced when contact or near contact is made with the palate by the tongue. Such sounds are š, ž, etc.

g) VELAR sounds are produced when the velum acts as the point of articulation. Such sounds are k, g, etc.

h) UVULAR sounds are produced with the uvula acting as the point of articulation, e.g. q.

i) GLOTTAL sounds are produced in the glottis, e.g. h.

1.1.3   There are certain sounds which cannot be classified either as vowels or consonants. They are y and w and called semi-vowels. They assume a consonantal or a vocalic function dependent upon the environment in which they occur.

1.4.   Stops are classified as voiceless and voiced based on the position the glottis takes during the articulation of the stop

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[1] These are represented as t, d, n, in this phonetic reader as there are no alveolar sounds in the language.

sounds.   If the glottis remains open during the closure phase, uoiceless stops are produced.   If the glottis remains open during the plosion, the plosion will itself be voiceless and the sound thus produced will be voiceless aspirated.   If the vocal cords start vibtating during the plosion, the sound produced will be voiceless unaspirated one.   Thus aspiration is a period of voicelessness during the plosion phase of a stop.   Although the term aspirated is used in conjunction with voiced stop,   it has a fairly different sense because there is no question of voicelessness during the plosion in such cases as the vocal cords remain vibrating all along to produce voicing.   The so called voiced aspirated stops have the characteristics that "they are followed by a vowel pronounced with a 'breathy voice', i.e. with a different register".[1]

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[1]   Abercrombie,   David :   *Elements of General   Phonetics,*
Chicago, 1967, p. 147.

2. METHODOLOGY

2.1. GEOGRAPHICAL DISTRIBUTION :

Ladakhi is a language of the Sino-Tibetan subfamily of Chinese. It is spoken in Leh, Nubra. Nyuma and Zanskar tehsils of Ladakh district of the present Jammu and Kashmir state. It is spoken by 52,714 persons (Census of India, 1961)

2.2. LADAKHI DIALECTS

Ladakhi has three main dialects—Upper Ladakhi, Central Ladakhi and Lower Ladakhi. Upper Ladakhi is spoken in the higher attitude areas, i.e., in the east of Leh like Upshi ete., and its boundaries extend upto the Tibetan border. This variety shows a great degree of Tibetan influence on its phonology. This variety is callled *stotpa* by the Ladakhi speakers. Central Ladakhi is the variety spoken in and around Leh, *i.e.*, Leh, Sabu, etc. This variety is considered as the standard form of Ladakhi and carries more prestige. It is this form of the language that the speakers of other dialects try to emulate. The third variety is called the *shamma* variety. *i.e.*, lower Ladakhi in and around Shamma.

Ladakhi spoken in Zanskar and in Nubra shows some minor phonological and lexical differences. The form of Ladakhi spoken in Zanskar is acclaimed to agree with Upper Ladakhi according to *Linguistic Survey of India*. The Ladakhi spoken in Nubra is

considered to be akin to the Shamma variety. More linguistic work is needed to clearly establish their relationships with the major dialects.

ELICITATION PROCEDURES AND INFORMANTS:

The present study is based mainly on Central Ladakhi which is the standard variety. Data have been collected at different times over a period of two years. Initially the data were collected on the basis of a previously prepared word-list and a sentence-list. This was supplemented by collecting additional lexical items of cultural and local use and connected narrations. Care was taken during the data collection stage to elicit and check various noun and verb paradigms so that nothing significant is left out. The data collection was done from native informants following the standard elicitation technique. Although the major part of the data has been collected from a male informant aged 30 years, care was taken to check the data with other informants of different age groups as well as different sex. However, it must be mentioned that data were collected from Buddhist informants who comprise the majority of Ladakhi speakers. When some data were elicited from Muslim Ladakhi speakers, no significant difference was found except that Muslim speakers showed an impact of Persianized vocabulary to a certain degree.

It is also significant to point out that the informants were drawn from the literate as well as illiterate speakers and from higher as well as lower social strata of Ladakhi speakers. While the differences in terms of literacy and social status did not show any phonological differences, clear grammatical and lexical differences showed up in a systematic manner. Ladakhi speakers of higher social status and education use honorific forms and a set of honorific lexical items in their common linguistic repertoire. The illiterate and the lower social status Ladakhi speakers do not use the honorofic forms and lexical items in normal inter-course, except when addressing a person of higher social status.

2.4.   The present phonological description is based on the structural-distributional theory of linguistic analysis.   Ladakhi sounds have been analysed on the basis of the principles of contrast and complementation, and phonemes established. Together with the phonemes, their allophone and distributions have been stated, thus presenting a comprehensive picture of the segmental phonology.   Phonetic features like duration, nasalization, stress and tone are found to be non-significant in the language.   The analysis has been done not only on the basis of taking word as the domain of analysis but macro-segments have been duly taken into consideration.   However, intonation patterns have not been analysed.

2.5.   Ladakhi, being a language of the Sino-Tibetan group, is a syllabic language like other languages of the Chinese family.   It clearly manifests the fact that its phonological organisation is amenable to an appropriate description only if syllable is taken as the basic unit of description.   By the basic unit of description we mean that the phonemes are established and their distributions described in terms of their occurrence in syllables. If we do not analyse the phonology of Ladakhi syllabically, we will have a large number of consonant clusters in the so called medial pasition (if word were the basic unit of analysis) which will not have counterparts among either the initial or the final consonant clusters[1] or would they represent an accepted sequence of the same.   The derivational morphology also gives confirmation of the syllabic nature of the language.   In Ladakhi, each syllable is analysable as a separate morpheme.   This may not have been possible if Ladakhi were not a syllabic language.

The Ladakhi writing system also attests to the syllabic nature of the language.   Not only does the writing system mark syllabic

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[1]. Whorf B. L.: "Linguistics as an exact science" in Language, thought and reality. 1956, M.T.

boundaries, statement of graphemic-phonemic correspondences is amenable to a more systematic analysis in terms of the syllabic nature of the language. Therefore, this description of Ladakhi language takes syllable as the unit of analysis and not the word. Thus in this work initial, final, etc., should be construed to mean the initial and final etc. of a syllable.

2.6. REGIONAL VARIATION

It has been mentioned earlier that Ladakhi has three major dialects. There are some regional differences characterizing each one of these dialects. Grierson has pointed out some such variations at the grammatical and phonological level. Our study also shows the following features :

(a) /s/ occurs as the second member of the final consonant clusters in Central and Lower Ladakhi dialects. In Upper Ladakhi it is always elided. This linguistic variable also co-relates with the place the speaker received his education. Thus, speakers of Central and Lower Ladakhi dialects educated in Tibet also elide the final /s/ as mentioned above, while those educated in India do not. This has a further dependent relationship with age. Since 1962, no Ladakhi speaker has been able to go to Tibet for his education which was the earlier practice among Ladakhis; thus Tibet-educated Ladakhis belong to an older age group than the non-Tibet-educated ones, and the elimination of /s/ in Central and Lower Ladakhi correlates with older age groups.

b) Ladakhi has various syllable initial consonant clusters. The first consonant of such clusters is regularly elided in Upper Ladakhi. In Central and Lower Ladakhi this elision is only optional. It has not been possible to corelate this optional deletion with any linguistic or sociological factor.

c)   In terms of lexical differences, Shamma dialect has a certain number of items which do not occur in other areas.   For example :   /i-ču/ 'bird' occurs only in Shamma area.

2.7. LANGUAGE VARIATION

There are certain variable linguistic features which occur in the entire Ladakhi speech area.   Such variable features are the following :

(a)   The initial voiceless phonemes /p, t, ṭ, č, k/ are in free variation with thier voiced counterparts /b, d, ḍ, ǰ, g/ in certain items, e.g.,

/pe-mə/	~	/be-mə/	'sand'
/pu-tshə/	~	/bu-tshə/	'son'
/tək-po/	~	/dək-po/	'pure'
/tuŋ/	~	/duŋ/	'shell'
/ṭəŋ-mo/	~	/ḍəŋ-mo/	'cold'
/ṭu-ži/	~	/ḍu-ži/	'ship'
/čək-pə/	~	/ǰək-pə/	'rubber'
/ko-sə/	~	/go-sə/	'rank'
/kə-bur/	~	/gə-bur/	'napthalene'

b)   Syllable initial voiceless aspirate /čh/ freely varies with its unaspirated counterpart /č/ in certain items, e.g.

/łə-čhə/	~	/łə-čə/	'wages'

c)   Syllable initial voiceless aspirate /ph/ freely varies with its voiced unaspirated counterpart, e.g.

/ə-phə/	~	/ə-bə/	'father'

d)   /ə/ is in free variation with /ə/ in certain items, e.g,,

/ter/	~	/tər/	'snow surface'

2.8. SUB-PHONEMIC FREE-VARIATION :

In the previous two sections an account of the phonemic variation of Ladakhi has been given. There are certain features which freely vary at the sub-phonemic level. Such variations are the following :

a) [ə] freely varies with [ɐ] in the medial position.

[mək] ∼ [mɐk] 'war'

b) [a] freely varies with [ɐ] in the non-absolute final position.

[za-phur-bu] ∼ [zɐ-phur-bu] 'mercury'

c) Syllable initial voiced stops [b, d, g] occurring in the non-absolute initial position freely vary with their fricativized counterparts.

EXAMPLES :

[gər-ɓa] ∼ [gər-ba] 'blacksmith'
[rdɛ-mo] ∼ [rɖ-ɛ-mò] 'beautiful'
[skər-da] ∼ [skər-ɖ-a] 'meter'
[sɛr-ga] ∼ [sɛr--ǵ-a] 'crack'
[lɐ-gur] [lɐ--ǵ-ur] 'immediate'

3. PHONOLOGY

3.1. The phonemes of the Ladakhi language are as follows :

3.1.1 Vowels

i		u
e	ə	o

3.1.2. Consonants   See page 19.

3.2. In all there are nine vowel and thirty-nine consonant sounds in Ladakhi. The phonetic description and distribution of these phones and the phonemes to which they belong are given below in detail.

3.2.1 Distribution of vowel phonemes

All the vowel phones occur in all the three positions—initial, medial and final.

3 2.2 There are nine vowel phones in Ladakhi, *viz.*, [i, e, E, ɐ, ə, a, ʌ, o, u]. [i, e, E] are front, [ɐ, ə] are central and [a, ʌ, o, u] are back vowels. Among these, high vowels are [i, u], mid are [e, E, ə, o, ʌ] and low ones are [ɐ, a]. All the vowels are oral and voiced. In the articulation of all these vowels the soft palate is raised to close the nasal passage and the

3.1.2. CONSONANTS

	Labial	Dental	Alveolar	Retroflex	Palatal	Velar	Glottal
Stops Voiceless	p	t		ṭ		k	
Voiceless aspirated	ph	th		ṭh		kh	
Voiced	b	d		ḍ		g	
Affricates Voiceless			st͜		č		
Voiceless aspirated			tsh		čh		
Voiced			dz		ĵ		
Fricatives Voiceless			s	ṣ	š		h
Voiced			z		ž		
Trill			r				
Lateral			l				
Murmur Lateral			ł				
Nasals Voiced	m	n			ɦ	ŋ	
Semi-Vowels	w				y		

vocal cords remain vibrating so as to produce voicing. These two features, viz. voicing and non—nasality will not be repeated in the detailed description of sounds given later in this section.

/i/   [i]   Lower—high Front Unrounded Vowel

In the articulation of this vowel the front of the tongue is raised to the lower-high position, lips remain in the neutral position, and the aperture of the jaws is narrow to medium. This sound occurs in all the positions.

EXAMPLES

Initial

[i-ču]	'bird'
[i]	'it'
[i-ru]	'here'

Medial

[mik˃]	'eye'
[šik˃]	'louse'
[zik˃]	'panther'

Final

[spi]	'buttock'
[ri]	'hill'
[mi]	'man'

/e/   [e]   Higher—mid Front Unrounded Vowel

In the production of this sound the front part of the tongue is raised slightly higher than half the way to the maximum height required for the articulation of vowels, the position of lips remains

neutral, and the aperture of the jaws is medium to wide, This
sound occurs only in the final position.

> Final
>
> > [me]   'fire'
> >
> > [l̥če]   'tongue'
> >
> > [t̬she]   'life'

[E]   Mean-mid Front Unrounded Vowel

In the articulation of this vowel the front part of the tongue
is raised to half the way of the maximum height for the pro-
duction of vowels. The lips remain neutral, and the aperture of
the jaws is medium to wide. It occurs only intially and medailly.

> Initial
>
> > [Fl-čEs]   'to neglect'

> Medial
>
> > [šEl]   'glass'
> >
> > [zEr]   'light'
> >
> > [zEp]   'stallion'

/ə/   [ə]   Mean-mid Central Unrounded Vowel.

In the articulation of this vowel the central part of the
tongue is raised to slightly lower than the mid-height position.
The lips remain in the neutral position; the aperture of the jaws
is narrow. This sound occurs in the initial and medial positions.

EXAMLES :

> Initial
>
> > [əm-či]   'doctor'

[ə‑lɲŋ]   'ear-ring'

[ə‑g̈u]   'uncle'

Medial

[l̥cəks]   'iron'

[rəs]   'cotton'

[t̬shəks]   'strainer'

[ɐ]   Low Central Unrounded Vowel.

In articulating this sound, the central part of the tongue remains in low position.   The lips are in neutral position and the aperture of the jaws is wide.

It freely varies with [ə] in initial and medial positions.

[a]   Low Central to Back Unrounded Vowel.

In the articulation of this sound the front part of the back of the tongue is used; the tongue is not raised but remains low, lips remain in the neutral position, and the aperture of the jaws is wide.   It occurs in the final position.

EXAMPLES :

[s̩a]   'hair'

[za]   'planet'

[ĵa]   'part of a rainbow'

In the the pre-interal juncture position, where it also occurs, it freely varies with [ɐ].

EXAMPLES :

[za‑phur‑bu]   ~   [zɐ‑phur‑b̶u]   'jupitar'

[ma‑yər]   ~   [mɐ‑yər]   'stepmother'

[gya–t̬sho]   ∼   [gye–t̬sho]   'ocean'

/o/   [ʌ]   Mean-mid Back Rounded Vowel

In the articulation of this sound the back part of the tongue is raised half-way to the maximum height for the articulation of the vowels.   The position of the lips is slightly rounded.   The aperture of the jaws is medium to wide. It occurs initially and medially,   It also occurs in syllable-final but not absolute final position.

EXAMPLES:

> Initial
>
> > [ʌt]   'light'
> >
> > [ʌm–thuŋ]   'infant'
> >
> > [ʌs–mol]   'broom'
>
> Medial
>
> > [thʌt–pa]   'forehead'
> >
> > [nʌr–čən]   'rich'
> >
> > [t̬shʌn]   'colour used for
> >   painting'
>
> Syllable Final
>
> > [pʌ–mo]   'girl'
> >
> > [gʌ–t̬shək]   'headache'

[o]   Higher-mid Back rounded Vowel

In the articulation of this sound the back part of the tongue is raised to slightly higher than half-way height required for the articulation of vowels.   The lips remain fairly open and rounded,

and the the aperture of jaws is medium. It occurs only in the final position.

EXAMPLES :

    Final

        [ro]   'dead body'

        [zgo]   'door'

        [žo]   'curd'

/u/   [u]   Lower-high Back Rounded Vowel

    In the articulation of this vowel the back part of the tongue is raised to the lower-high height and the position of lips is fairly close and rounded. The aperture of jaws is medium. It occurs in all the positions–initial, medial and final.

EXAMPLES

    Initial

        [uks]   'breath'

        [u]   'head (honourific)'

        [u-ža]   'cap (honourific)'

    Medial

        [gut]   'deaf'

        [rus]   'courage'

        [duŋs]   'story'

    Final

        [čhu]   'water'

        [gu]   'nine'

        [žu]   'bow'

3.2.3.   VOWEL-LENGTH

If the duration of the articulation of a vowel is longer, it is called a long vowel.   In Ladakhi the lower-high front and back vowels [i, u] are relatively longer in the final position, however the quality of the vowels remains unchanged.   [i, u] in all other positions and the rest of the vowels in all occurrences exhibit no length distinction.

3 2 4.   VOWEL NASALITY

In Ladakhi all vowels become slightly nasalized in the vicinity of nasal consonants.   Being a predictable feature it is not marked in the transcription.

3.3.   CONSONANTS

There are thirtynine consonant sounds in Ladakhi, viz. [p, t, ṭ, k, kˀ, ph, th, ṭh, kh, b, d, ḍ, g, ts, tṣh, dẓ, č, čh, ǰ, s, z, ṣ, š, ž, h,   ɓ, ɗ, -g̃, l, ḷ, ł, r, r̥, m, n, ñ, ŋ, w, y]. However, there are only thirtythree consonants phonemes in the language.

All the consonant phonemes occur initially.   Before pause only /k, t, p, s, m, n, ŋ, r, l/ occur.

3.3.1.   STOPS

There are twelve stop phonemes /p, t, ṭ, k, ph, th, ṭh, kh, b, d, ḍ, g/. Stops are articulated by completely closing the passage of the air stream at a specific place in the oral cavity and then suddenly opening the closure, so that air escapes with plosion. These are subclassified into four groups according to the points of articulation;   bilabial /p, ph, b/, dental /t, th, d/, retroflex /ṭ, ṭh, ḍ and velar /k, kh, g/; each phoneme has one allophone except /b, d, g/ which have respectively two allophones each [b, d, g] and [ɓ, ɗ, -g̃-] which are phonetically fricatives; /k/ has two allophones [k] and a retracted variety. [kˀ].

/p/   [p]   Voiceless Bilabial Stop

    In the articulation of [p], the air is compressed by pressure from the lungs and passes through the opening of the vocal cords without any obstruction, the air stream is completely blocked by closing the lips, then the lips are opened and the air suddenly escapes with explosion.   It occurs initially and finally.

    Initial

[pəg-bu]	'brick'
[pɐ-tum]	'bud'
[pu‐mo]	'girl'

    Final

[khəp]	'needle'
[rəp]	'best'
[lek˃-šup]	'glove'

/ph/   [ph]   Voiceless Aspirated Bilabial Stop

    [ph] is articulated in the same manner as [p] except that the glottis remains open during the release phase resulting in aspira-ration.   The degree of aspiration is relatively weak when it occurs after the internal juncture.   It occurs only initially.

EXAMPLES :

    Initial

[phəŋ]	'spindle'
[pho]	'man'
[phiŋ-ba]	'rug'

[sɹl-phɔks]   'pay or allowance
                                    (honourific) '

[lək-phis]   'hand towel,
                                    handkerchief'

/b/   [bh]   Voiced Bilabial Stop

   [b] sound is articulated in the same manner as [p] except
that the vocal cords remain vibrating thus producing voicing
during the articulation.   It occurs initially (except as mentioned
for the distribution of [b] below) and syllable finally.   It does
not occur before pause.

EXAMPLES

        Initial

                [bɹt]   'call'

                [bEn]   'target of an arrow'

                [bul-wa]   'offering'

        Final

                [ɬɹb-bɹn]   'master'

                [yəb-yum]   'parents (honorific)'

[ƀ]   Voiced Bilabial Fricative

   In the articulation of [ƀ] sound the air is compressed by
pressure from the lungs; the vocal cords are made to vibrate so
that voice is produced; the lower lip approaches the upper lip but
does not touch it, instead a very small opening remains for the air
stream to pass by producing a slight degree of friction.   It occurs
(i) in initial clusters after [r], and (ii) after a vowel or [r, l, n, ŋ]
and syllable boundary, i,e. [v‑ƀv] and [r‑ƀv] [l‑ƀv, n‑ƀv,
ŋ‑ƀv].

EXAMPLES

[rɓət]	an instrument to smooth the harrow'
[nɹr-ɓu]	'gem'
[gər-ɓa]	'black smith'
[tu-ɓək⁼]	'gun'
[sɛ-ɓət-thək⁼-ɓət]	'blood and sweat'
[ɬen-ɓa]	'foolish'
[šɛl-ɓuŋ]	'bottle'
[miŋ-ɓo]	'brother'

It may be mentioned that in the above environments this sound is in free variation with [b].

/t/   [t]   Voiceless Dental Stop

In the articulation of [t] sound, the air is compressed by the pressure from the lungs and passes through the opening of the vocal cords without any obstruction, the tip of the tongue presses against the upper teeth and when the tongue is removed from the back of the teeth, the air suddenly escapes with plosion. It occurs in initial and final positions.

EXAMPLES

Initial

[tus]	'time'
[tɹm]	'bear'
[təŋ-po]	'first'

Final

[tʂhət]	'fever'
[thɹt-pa]	'forehead'
[sɛms-ñit]	'soul'

/th/   [th]   Voiceless Aspirated Dental Stop

[th] sound is articulated in the same manner as [t], except that the glottis remain open during the release phase resulting in aspiration.   The degree of aspiration is relatively weak when it occurs after the internal juncture.

EXAMPLES

   Initial

   [thik ˀ]   'line'

   [thu‒la]   'down'

   [thɛm‒ska]   'ladder'

   [st ʅ‒thuŋ]   'blouse'

   [thiŋ‒thiŋ]   'small symbol'

   [ʅm‒thuŋ]   'infant'

/d/   [d]   Voiced Dental Stop

[d]   sound is articulated in the same manner as [t] except that the vocal cords are made to vibrate so that 'voice' is produced during the articulation of the sound.   It occurs in the initial position.   In the syllable final position it occurs only before a voiced sound.   It does not occur in absolute final position.

EXAMPLE

   Initial

   [dɛn‒ba]   'truth'

   [dəŋ]   'and'

   [di‒ru]   'here'

   Final

   [r̃g̃əd‒mo]   'old woman'

   [t̞s ʅd‒ma]   'boiled vegetable rice'

[d̄⁻] Voiced Dental Fricative

In the articulation of this sound, the vocal cords remain vibrating so as to produce 'voicing', the soft palate is raised and the tip of the tongue is raised towards the back of the upper teeth to leave a very narrow construction for the air stream to squeeze out with friction.   It occurs (i) in initial clusters after [r, l], and (ii) after a vowel or [r, l, n, ŋ] and syllable boundry, i.e. [v–d̄⁻v] and [r–d̄⁻v, l–d̄⁻v, n–d̄⁻v, ŋ–v]

EXAMPLES

[r d̄⁻ɛ–mo]	'beautiful'
[r d̄⁻uŋ–ma]	'rafter'
[skər–d̄⁻a]	'meteor'
[kun–d̄⁻um]	'small basket'
[šəŋ–d̄⁻ ʌ ŋ]	'cave of a wolf'
[čhu–d̄⁻oŋ]	'well'
[sə–d̄⁻ən]	'carpet (literary)'
[ŋə–d̄⁻ək²]	'ruler'
[rin–d̄⁻i]	'kind of metal'
[žəl–d̄⁻ ʌ ŋ]	'face (honourific)'

This sound is in free variation with [d]

/ṭ/   [ṭ]   Voiceless Retroflex Stop

In the articulation of this sound, the air is compressed by pressure from the lungs and passes through the opening of the vocal cords without any obstruction; the soft palate is raised to close the nasal passage and the tip of the tongue curls and touches the pre-palatal region; then the tongue is tongue is removed resulting in the air suddenly escaping with plosion. It occurs only initially.

EXAMPLES

[ṭukˀ]	'six'
[ṭəl]	'cue'
[ṭəŋ-po]	'straight'

/ṭh/ [ṭh] Voiceless Aspirated Retroflex Stop

[ṭh] sound is articulated in the same manner as [ṭ], except that the glottis remains open during the release please resulting in aspiration. The degree of aspiration is weaker when it occurs after the internal juncture. It occurs only initially.

EXAMPLE

[ṭha]	'hawk'
[ṭhul]	'egg'
[ṭhims]	'to punish'
[ɬ ʌb-ṭhuk]	'pupil'
[ṣkəŋ-ṭhi]	'bench'

/ḍ/ [ḍ] Voiced Retroflex Stop

[ḍ] sound is articulated in the same manner as [ṭ] except that the vocal cords are made to vibrate so that 'voice' is produced during the articulation of the sound. It occurs ouly initially.

EXAMPLES

[ḍʌŋ]	'wild yak'
[ḍəs]	'rice'
[ḍe]	'ghost'
[mun-ḍikˀ]	'darkness'

/k/   [k]   Voiceless Velar Stop

In the articulation of [k] sound the air is compressed by pressure from the lungs and passes through the opening of the vocal cords without any obstruction, the passage to the nasal cavity is completely blocked by raising the soft palate; the back of the tongue touches the soft palate and then the tongue is lowered resulting in the air suddenly escaping with explosion. It occurs only in the initial position.

EXAMPLES

[kər]	'dance'
[kur]	'tent'
[kʌ̃ŋ-ma]	'higher'

[kʾ] is a retracted variety of the voiceless velar stop [k]; i.e. the back of the tongue touches the back of the soft palate, the rest of the mechanism involved is the same as the production of of [k.]   It occurs only in the final position.

EXAMPLES

[tʂhək̮ʾ]	'point'
[khək̮ʾ]	'part'
[tʂ̮e–pik̮ʾ]	'little'

/kh/   [kh]   Voiceless Aspirated Velar Stop

[kh] sound is articulated in the same manner as [k], except that the glottis remains open during the release phase resulting in aspiration.   The degree of aspiration is relatively weak when it occurs after the internal juncture.

EXAMPLES

[khE-mo]	'cheap'
[khʌkˀ-pa]	'inside of the body'
[khur-po]	'burden'
[ṭhus·khəŋ]	'bath room'
[phʌ-khEps]	'quilt'

/g/   [g]   Voiced Velar Stop

[g] sound is articulated in the same manner as [k], except that the vocal cords are made to vibrate, so that 'voice' is produced during the articulation of the sound. It occurs in the initial position and in syllable final only when the following syllable has an intial voiced sound.

EXAMPLES

[gʌn·pa]	'monastery'
[gu]	'nine'
[gə·ma]	'beloved'
[məg·mi]	'soldier'
[dzug-mo]	'index finger'

[g̶]   Voiced Velar Fricative

In the articulation of this sound the air is compressed from the lungs, the vocal cords remain vibrating to produce voicing, the soft palate is raised, and the back part of the tongue approaches the soft palate, but does not touch it, instead a very small opening remains for the air stream to pass throngh with a slight degree of friction.   It occurs in the following environments (i) in initial cluster after /r/ and   (ii) after vowel, or [r, l, n, ŋ] and syllabic boundary, i.e., [v-g̶v] and [r-g̶v, l-g̶v, n-g̶v, ŋ-gv]

EXAMPLES

[r ·g̊· əd·mo]	'old woman'
[lə· ·g̊· ur]	'immediate'
[əŋ· ·g̊· i]	'number'
[ṭhu· ·g̊· u]	'boy'
[sEr· ·g̊· a]	'crack'
[thur· ·g̊· o]	'kind of rein which is fixed around the neck of the horse to pull'
[t͜shən· ·g̊· əŋ]	'whole night'
[sEr· ·g̊· ər]	'goldsmith'
[m̃ul· ·g̊· ur]	'mosquito net'

3.3.2. AFFRICATES :

There are six affricate phonemes in Ladakhi, viz., /t͜s, č, t͜sh, čh, d͜z, j̆/, each having only one allophone each. These affricates can be subgrouped according to the place of articulation: alveolar affricates are /t͜s, t͜sh, d͜z/ and palatal affricates are /č, čh, j̆/.

/t͜s/ [t͜s] Voiceless, Alveolar Affricate

In the articulation of this sound the air is compressed by pressure from lungs and passes through the vocal cords without any obstruction; the nasal passage remains closed by raising the velum; the front of the tongue is raised in the direction of hard palate and the tip of the tongue touches the teeth ridge; the tongue is not taken away from the teeth-ridge completely all of a sudden as in the case of stops, but is lowered slowly and the air stream passes through the narrow passage with friction.

It occurs only initially.

EXAMPLES

[tsǝŋ-ma]	'clean'
[tsɛ-po]	'basket'
[tsa]	'rust'

[tsh] [tsh] Voiceless, Aspirated, Alveolar Affricate

[tsh] is pronounced in the same manner as [ts], except that the glottis remains open during the release phase resulting in aspiration. It occurs initially. The degree of aspiration is relatively weak when it occurs after the internal juncture.

EXAMPLES

[tshǝŋ-ma]	'all'
[tshʌd-ma]	'vegetable'
[tshǝr-ka]	'anxiety'
[rgyɐ-tsho]	'sea'
[pu-tsha]	'son'

/dz/ [dz] Voiced Alveolar Affricate

[dz] sound is formed in the same manner as [ts], except that the vocal cords vibrate to produce voicing during the articulation. It occurs only in the initial position.

EXAMPLES

[dzǝt-pa]	'work'
[dzɛ-nǝt]	'lepsory'
/dzo/	'a male animal, who is a mixed breed of cow and yak'

/č/   [č]   Voiceless Palatal Affricate

In the articulation of this sound the air is compressed by pressure from lungs and passes through the vocal cords without any obstruction; the soft palate is raised; the front of the tongue is raised to the pre-palate region and when the tongue is separated from the palate the air stream passes with friction. It occurs only in the initial position.

EXAMPLES

[čik˒]	'one'
[čət]	'(to) cut'
[čɛm-čɛm]	'measles'

/čh/   [ch]   Voiceless, Aspirated, Palatal Affricate

[čh] is produced in the same manner as [č], except that glottis remains open during the release phase resulting in aspiration. It occurs initially only. The degree of aspiration is relatively weak when it occurs after the internal juncture.

EXAMPLES

[čhəɩ]	'local beer'
[čhur pe]	'cheese'
[čhi-ma]	'tear'
[tək-čha]	'echo'
[ŋul-čhu]	'mercury'

/ǰ/   [ǰ]   Voiced, Palatal Affricate

[ǰ] sound is articulated in the same manner [č] except that the vocal cords vibrate so that the sound produced is a voiced one. It occur only initially.

EXAMPLES

[ǰa]   'a small section of rainbow'

[ǰiŋ-ba]   'neck'

/ǰʌr/   'received'

3.3 3.   FRICATIVES

There are nine fricatives in Ladakhi i.e. [b̶, d̶-, -g̶-, s, ṣ, š,
z, ž, h].   These can be subgrouped according to the place of
articulation; [b̶] is bilabial, [d̶-] is dental, [-g̶-] is velar, [s,z] are
alveolar, [ṣ] is retroflex, [š, ž,] are palatal and [h] glottal; [s, z, ṣ,
š, ž] can also be called sibilants, [b̶, d̶-, -g̶-] being allophones of
/b, d, g/ respectively have been described together with the stop
phonemes in 3.3.1.   The rest of the six sounds are all phonemic.
Thus there are six fricative phonemes in the language.

/s/   [s]   Voiceless Alveolar Fricative

For articulating this sound the air stream passes through the
vocal cords without any obstruction; the soft palate is raised, the
blade of the tongue approaches the teeth ridge. and the front part
of the tongue is raised towards the hard palate; a narrow
aperture is maintained between the articulator and the point of
articulation and the air passes with friction.   It occurs in the
initial and final positions.

EXAMPLES

Initial

[sur-na]   'shahnai; a long narrow
                          instrument'

[skət]   'voice'

[sɛr]   'gold'

Final

    [tus]   'time'

    [ləs]   'work'

    [čhกิs]   'religion'

/z/   [z]   Voiced Alveolar Fricative

    [z] is articulated in the same manner as [s], except that the vocal cords are made to vibrate so that 'voice' is heard. It occurs in the initial position and the syllable final-position but not before absolute pause.

EXAMPLES

Initial

    [zikᐞ]   'panther'

    [dzกิt]   'godwon'

    /zur–mo/   'pain'

Final

    [žuz-mər]   'melted butter'

    [šəz-mən]   'spice (literary form)'

    [gกิz-lək]   'clothes (sing.)'

/ṣ/   [s]   Voiceless Retroflex Fricative

    In the articulation of this sound the air is compressed from lungs, the air passes through the vocal cords unimpeded; the velum is raised, and the tip of the tongue curls back and is raised towards the hard palate leaving a narrow passage between the hard palate and the curled part of the tongue through which the air current passes with friction. It occurs in the initial position only.

EXAMPLES

    Initial

        [s̩əŋ]   'street'

        [s̩i]   'milk the cow gives imme-
                                     diately after she has given
                                     birth to a calf'

        [s̩un-po]   'an infant who does not give
                                     trouble'

/š/   [š]   Voiceless Palatal Fricative

    In the articulation of this sound the air is compressed from the lungs and passes through the vocal cords unobstructed; the velum is raised; the front of the tongue is raised towards the prepalate region, thereby forming a narrow groove, through which the air current passes with friction. It occurs in the initial position only.

EXAMLES

        [šEl]   'glass'

        [šums]   'cry (honorific)'

        [ša]   'flesh'

/z/   [z]   Voiced Palatal Fricative

    This sound is articulated in the same manner as [š] except that the vocal cords are made to vibrate so that 'voice' is produced. It occurs in the initial position only.

EXAMPLES

    Initial

        [ža]   'marshy land'

        [žʌŋ]   'busy'

        [žim-po]   'tasty'

/h/   [h]   Voiceless Glottal Fricative

In the articulation of this sound the air current is compressed from the lungs, and passes through the vocal cords without any obstruction, the oral organs remain in the neutral vowel position. It occurs only in the initial position.

EXAMPLES

Initial

[h⁻ɐgo]   'understanding'

[hʌ-sʌr]   'date palm'

[həl-čən]   'robust'

3.3.4. TRILLS

/r/   [r]   Voiced Alveolar Trill

In the articulation of this sound the air is compressed from the lungs, the vocal cords vibrate to produce voicing and the passage to the nasal cavity is closed by raising the velum; it is articulated by a rapid succession of taps of the tip of the tongue against the teeth-ridge, tongue is held in a loose position and the air stream causes the tip to vibrate.   It occurs in the initial and final positions.

EXAMPLES

Initial

[ri]   'hill'

[rul]   'snake'

[rʌl-mo]   'musical instrument'

Final

[šər]   'east'

[sEr]   'gold'

[čhu-kʌr]   'cyclone'

[r̥]   Voiceless Alveolar Trill

In the articulation of this sound the air stream passes through the vocal cords without any obstruction, this allophone is the voiceless variety of the above [r] and occurs as the first member of the consonant clusters when the second member is a voiceless consonant.

EXAMPLES

Initial

[r̥tsəŋs-tha]   'bank of river'

[r̥tiŋ-pa]   'heel'

3.3.5.   LATERALS

There are three lateral sounds, viz., (l, l̥, ɬ); [l] is a voiced alveolar lateral, [l̥] is a voiceless alveolar lateral and [ɬ] is a voiced alveolar murmured lateral.   However, there are only two lateral phonemes, viz.   /l, ɬ/ as the voiceless alveolar lateral [l̥] and voiced lateral [l] are allophones of /l/.

/l/   [l]   Voiced Alveolar Lateral

In the articulation of /l/ sonnd, the tip of the tongue approaches the teeth-ridge to make a complete closure in the medium line passagc, however a passage is left on both sides of the tongue for the air to pass through, the velum is raised, and the vocal cords are made to vibrate to produce 'voice'.   It occurs in initial and final positions.

EXAMPLES

Initial

[ləs]   'work'

[lo]   'year'

[luk˺]   'sheep'

Final

[rul]	'snake'
[š ̌ʌl]	'plough'
[rəz-bəl]	'cotton'

[l̥]   Voiceless, Alveolar Lateral

[l̥] is articulated in the same manner as [l], except that the vocal cords are not made to vibrate. It occurs only in clusters before voiceless consonants.

EXAMPLES

[l̥čəks]	'iron'
[l̥pəks]	'skin'
[l̥təd-mo]	'show'
[l̥če]	'tongue'

[ɫ]   [ɫ]   Voiced, Alveolar Murmured Lateral

This sound is produced in the same manner as [l] except that the extra breath accompanied by murmur is released towards the end of the lateral articulation. The sound is produced at a lowered pitch. It occurs only in the syllable-initial.

EXAMPLES

Initial

[ɫe]	'name of the district head-quarter of Ladakh'
[ɫuŋs-po]	'air'
[ɫa]	'God'
[ɫEn-ba]	'lazy'

3.3.6. NASALS

Ladakhi has four nasal phonemes /m, n, ñ, ŋ/. Each on of them has only one allophone, i.e., /m has bilabial nasal [m] /n/ alveolar nasal [n]; /ñ/ palatal nasal [ñ]; /ŋ/ velar nasal [ŋ]

/m/   [m]   Voiced Bilabial Nasal

In the articulation of this sound the air is compressed from the lungs, and the vocal cords vibrate to produce voicing, the outgoing current is completely blocked by closing the lips, the velum remains lowered and the air passes through the nose; the tongue remains in the neutral position. It occurs in initial and final positions.

EXAMPLES

Initial

[mər]	'butter, oil'
[mo]	'woman'
[mig—ra]	'spectacles'

Final

[nəm]	'sky'
[pe—tum]	'bud'
[zum]	'(to) catch'

/n/   [n]   Voiced Alveolar Nasal

In the articulation of this sound, the air is compressed from the lungs, the vocal cords vibrate to produce 'voicing', the tip of the tongue touches the alveolar ridge blocking the air stream, then the velum remains lowered and the air current passes through the nasal cavity. It occurs in initial and final positions.

EXAMPLES

    Initial

        [nəs]   'barley'

        [nup]   'west'

        [n ɹ� r-bu]   'gem'

    Final

        [rəŋ-t ɹ n]   'self—interest'

        [mE-lEn]   'tongue'

        [dik-ṣin]   'crab'

/ñ/ [ñ]   Voiced Palatal Nasal

    In the articulation of this sound, the air is compressed from the lungs, the vocal cords vibrate to produce 'voicing', the front of the tongue touches the pre-palate region blocking the air stream, then the velum remains lowered and the air current passes through the nasal cavity. It occurs in the initial position.

EXAMPLES

    Initial

        [ña]   'fish'

        [ñuŋ-ma]   'turnip'

/ŋ/ [ŋ]   Voiced, Velar Nasal

    In the articulation of this sound, the air is compressed from lungs, the vocal cords vibrate to produce 'voicing', the back of the tongue touches the soft palate, blocking the air stream, the velum remains lowered and the air current passes through the nasal cavity. It occurs in initial and final positions.

EXAMPLES

    Initial

        [ŋa]   'I'

        [ŋən–pa]   'bad man'

        [ŋu–čɛs]   'to cry'

    Final

        [thəŋ]   'ground'

        [šɛl–buŋ]   'bottle'

        [sɐ–dɲŋ]   'gulf'

3.3.7. SEMI-VOWELS

There are two semivowels in Ladakhi, viz., bilabial [w], and palatal [y] and both are phonemic.

/w/   [w]   Voiced Bilabial Semivowel.

In the articulation of [w] the air is compressed from lungs, the velum is raised, vocal cords are made to vibrate in order to produce 'voice'; the lower lip approaches the upper lip, thereby leaving a narrow aperture for the air to pass through. It occurs in the initial position only.

EXAMPLES

    Initial

        [wə–t̬s̯e]   'fox'

        [dzə–wo]   'friend'

        [rɛ–wa]   'hope'

/y/   [y]   Voiced, Palatal Semivowel.

In the articulation of [y] the air is compressed from the lungs, the velum is raised, the vocal cords are made to vibrate to produce 'voicing'; the front of the tongue is raised towards the prepalatal region slightly higher than the maximum height for the production of a vowel, and the air current passes through this opening in the oral cavity unobstructed. It occurs initially; before vowel /i it has a pronounced on glide effect.

EXAMPLES

    Initial

        [yul]   'country'

        [yək⁾]   'yak' a local animal'

        |mə–yur| 'main canal'

        [yik⁾]   'letter'

        [yin]   'to be'

3.4.   As Ladakhi is syllabic it is important to discuss the criteria for demarcation of syllabic boundry in Ladakhi and the structure of different types of syllables in the language. A syllable has been defined differently on the basis of differing criterea–phonetic, phonemic and morphemic. Phonetically syllable has been defined in articulatory as well accoustic terms. However no satisfactory definition has been put forth. Phonemically it is possible to demarcate syllable boundries in terms of the permitted initial and final consonants as well as initial and final consonant clusters. Phonological and or morphemic junctures also help in determining syllable boundries.

In this work we have utilised the above criteria for demarcating syllable boundries. Morphemic juncture as well as the nature of permissible initial or final consonants or consonant clusters have been used to demacrate syllabic boundaries.

Ladakhi has the following syllabic structure (C) (C) (C) V
(C) (C).   The possible expansions of this structure with examples
are as follows.

V	/i/	'this'
VC	/ot/	'light'
VCC	/uks/	'breath'
CV	/s̩ə/	'hair'
CCV	/s̩ŋə/	'drum'
CCCV	/skyə/	'light colour'
CVC	/təŋ/	'(to) give'
CCVC	/s̩kəŋ/	'leg'
CCCVC	/s̩kyəŋ/	'wild horse'
CVCC	/dəŋs/	'colour'
CCVCC	/skəŋs/	'filled'
CCCVCC	/skyəŋs/	'spread'

3.4.5. CONSONANT CLUSTERS

Ladakhi has mostly two consonant clusters occurring in the
syllable—initial and syllable-final positions.   Three consonant
clusters are rare and occur only initially.

3.5.1. INITIAL

A.   Two consonant clusters :

Initial two consonant clusters are as follows.

(i)   Trill + Stops, Affricates

The following combinations occur in the language :

[r]+[-g̊], [b̥], [d̥⁻], [ɟ̊], [d̥z], [ts̥], [t̥].

EXAMPLES

[r] + [g̃]	[r ̃g̃ ət–po] /rgət-po/	'old man'
[r] + [b̶]	[rb̶ə-ɬəps] /rb̶ə-ɬəps/	'wave'
[r] + [d̄]	[r d̄-ər-rdo] /rdər-rdo/	'a stone to sharpen the knife'
[r] + [ǰ]	[rǰEs] /rǰEs/	'after, behind'
[r] + [dz]	[rdzəs] /rdzəs/	'material'
[r̥] + [ts]	[r̥tsəl-pa] /r̥tsəl-pa/	'to give'
[r̥] + [t]	[r̥tiŋ-pa] /rtiŋ-pa/	'heel'

(ii) Liquid /l/ + Stops, Affricate

The following clusters are available in the language;

[l] + [g̃], [d̄], [ǰ], [z] and [l̥] + [p], [t], [č̆]

EXAMPLES

[l] + [g̃[	[l ̃g̃ əŋ-bu] /lgeŋ-bu/	'balloon'
[l] + [d̄]	[l d̄- ən–pa] /ldən-pa/	

[l] + [ǰ]	[lǰŋə-khu]	'valley'
	/lǰəŋ-khu/	
[l] + [z]	[lzɐ-wa]	'moon'
	/lzə-wə/	
[l̥] + [t]	[l̥təd-mo]	'show'
	/ltəd-mo/	
[l̥] + [p]	[l̥pəks]	'skin'
	/lpəks/	
[l̥] + [č]	[l̥če]	'tongue'
	/lče/	

(iii)   Sibilant /s/+ Stops, Nasals

The following combinations occur in the language:

[s] + [k], [t], [p], [m], [n], [ñ], [ŋ].

EXAMPLES

[s] + [k]	[skut-pa]	'thread'
	/skut-pa/	
[s] + [p]	[spəŋ]	'lawn'
	/spəŋ/	
[s] + [t]	[stʌt-pa]	'upper part'
	/stot-pa/	'or man from upper part'
[s] + [m]	[smʌn-ləm]	'prayer'
	/smon-ləm/	

[s] + [n]	[snəm-bu] /snəm-bu/	'woolen'
[s] + [ñ]	[sñən-po] /sñən-po/	'sweet, melodious'
[s] + [ŋ]	[sŋ ɹ.n-po] /sŋon-po/	'blue'

(iv)   Sibilant /z/ + Stops

The following combinations occur in the language :

[z] + [b], [d], [g]

EXAMPLES

[z] + [b]	[zb ɹ.m-po] /zbom-po/	'thick (for wood)'
[z] + [d]	[zd ɹ.ŋ-po] /zdoŋ-po/	'trunk of the tree'
[z] + [g]	[zgəŋ] /zgəŋ/	'high'

v)   Sibilant /ṣ/ + Stops, Nasals

The following combinations occur in the language;

[ṣ] + [t], [k], [m], [n] [ñ], [ŋ]

EXAMPLES

[ṣ] + [t]	[ṣtiŋ-pa] /ṣtiŋ-pa/	'heel'

[s̩] + [k]	[s̩kəŋ-pa]	'foot'
	/s̩kəŋ-pə/	
[s̩] + [m]	[s̩mik-pa]	
	/smik-pə/	
[s̩] + [n]	[s̩nə-wa]	'ear'
	/s̩nə-wa/	
[s̩] + [ñ]	[s̩ñ ʌps]	'laziness'
	/s̩ñops/	
[s̩] + [ŋ]	[s̩ŋa]	'drum'
	/s̩ŋə/	

vi)   Stops, Nasal + /y/

The following combinations occur in the language:

[k], [kh], [g], [ñ] + [y]

EXAMPLES

[k] + [y]	[kyəŋ]	
	/kyəŋ/	
[kh] + [y]	[khy ʌt]	'you'
	/khyot/	
[g] + [y]	[gy ʌn-pa]	'to wear'
	/gyon-pə/	
[ɦ] + [y]	[ñyɛ-ŋən]	'sorrow'
	/ɦyə-ŋən/	

(vii)   It is important to note here that some clusters having a stop as its first member occur in syllable-initial position only after an open syllable in numerals where numeral items are composed of more than one syllable.   Such clusters are /bč, kš, ks, gñ, bd, bž, rg, brgy/

EXAMPLES

[b] + [č]   =   [ži-bču]   'forty'
                /ži-bču/

[k] + [š]   =   [ču-kšik]   'eleven'
                /ču-kšik/

[g] + [ñ]   =   [ču-gñis]   'twelve'
                /ču-gñis/

[k] + [s]   =   [ču-ksum]   'thirteen'
                /ču-ksum/

[b] + [d]   =   [ču-bdun]   'seventeen'
                /ču-bdun/

[b] + [ž]   =   [ču-bži]   'fourteen'
                /ču-bži/

[r] + [g]   =   [ču-rgu]   'nineteen'
                /ču-rgu/

[b]+[r]+[g]+[y]= [cʌ-brgyət]   'eighteen'
                /co-brgyət/

Thus it is evident that in such cases the first member of the clusters occurring in the numerals in non-absolute initial syllable is elided in the absolute initial position.

(viii)   It may be mentioned that some clusters having nasal /m/ as its first member occur in syllable-initial position only after an open syllable in certain items (doublets and compounds). Such clusters are as follows /m · th, kh, tsh/

[m] + [th]   =   [sṃə-mthʌn]   'low high'
                  /sṃə-mthon/

[m] + [kh]   [sku-mkhər]   'palace'
                  /sku-mkhər/

[m] + [tsh]   [rgyə-mtsho]   'sea'
                  /rgyə mtsho/

B.   Three consonant cluster

only three initial three consonant clusters occur in Ladakhi:

[sky], [rgy], [ṣky]

EXAMPLES

[skyʌn]   'fault'
/skyon/

[rgyə·la]   'road'
/rgyə·lə/

[ṣkyəŋ]   'wild horse'
/ṣkyəŋ/

3.4.2.   FINAL CLUSTERS

In this position only two consonant clusters occur.   In such clusters [s] is always the second member; which is weakly articulated, and often elided.   It occurs with the following consonants; [k], [p], [m], [y], [s].

(i) Stops, Nasals + /s/

    [k] + [s]   [ṭˌɲks-po]   'friend'

                /ˌṭoks-po/

    [p] + [s]   [šups]   'cover'

                /šups/

    [ŋ] + [s]   [tsʰəŋs-pa]   'brahmin'

                /tsʰəŋs-pə/

    [m] + [s]   [sɐ-tsʰəms]   'border'

                /sə-tsʰəms/

ii) Following final clusters are rarely used in Ladakhi.

    [t] + [s]   [ḍi-e-dzəts]   'wrote (hon.)'

                /ḍi-ə-dzəts/

    [n] + [s]   [ɬəns]   'applied

                /ɬəns/   fomentation'

    [r] + [s]   [zErs]   'told'

                /zers/

    [l] + [s]   [čhək-səls]   'bowed in

                /čhek–səls/   salutation'

    Final clusters other than [s] as a second member are found in loan words; e.g., Sanskrit word <u>swəsti</u> in Ladakhi [sˌɲ-sti] /so–sti/.

Second Member

First Member

Consonant cluster co-occurrence chart. First Member (rows, top to bottom): p, ph, b, t, th, d, ṭ, ṭh, ḍ, k, kh, g, ts, tsh, dz, č, čh, ǰ, s, z, ṣ, š, ž, h, m, n, ñ, ŋ, r, l, ł, w, y. Second Member (columns, left to right): p, ph, b, t, th, d, ṭ, ṭh, ḍ, k, kh, g, ts, tsh, dz, č, čh, ǰ, s, z, ṣ, š, ž, h, m, n, ñ, ŋ, r, l, ł, w, y.

First \ Second	p	ph	b	t	th	d	ṭ	ṭh	ḍ	k	kh	g	ts	tsh	dz	č	čh	ǰ	s	z	ṣ	š	ž	h	m	n	ñ	ŋ	r	l	ł	w	y
p																			θ														
ph																																	
b																																	
t																																	
th																																	
d																																	
ṭ																																	
ṭh																																	
ḍ																																	
k																			θ														X
kh																																	X
g																																	X
ts																																	
tsh																																	
dz																																	
č																																	
čh																																	
ǰ																																	
s	X		X							X															X	X	X	X					
z		X			X							X																					
ṣ			X							X															X	X	X	X					
š																																	
ž																																	
h																																	
m																			θ														
n																																	
ñ																																	X
ŋ																			θ														
r		X	X		X					X	X					X		X															
l	X		X		X					X						X		X	X														
ł																																	
w																																	
y																																	

x = Initial
θ = Final

4. LADAKHI SCRIPT

4.0. Ladakhi uses the Tibetan script, which is written from left to right. It has an inventory of thirty primary symbols and four *matras*: there are twenty-eight consonant symbols and two vowel symbols. The traditional order of the alphabet is given below together with the sounds they represent in roman transcription. Common Ladakhi word for script is called

ཡི་གེ་ /yi-ge/. However it is called ཆོས་ /chos/

when used for writig *religious* texts etc.

4.1. PRIMARY SYMBOLS

ka	kha	ga	ŋa

ča	čha	ǰa	ña

ད་   ཐ་   ད་   ན།

ta   tha   da   na

པ་   ཕ་   བ་   མ།

pa   pha   ba   ma

ཙ་   ཚ་   ཛ་   ཝ།

tsa   tsha   dza   wa

ཞ་   ཟ་   འ་   ཡ།

ž   za   ɜ   ya

ར་   ལ་   ཤ་   ས་

ra   la   ša   sa

ཧ་   ཨ།

ha   ə

In Ladakhi these symbols are called

གའསུམཅུ་   /kə-nə-sum-ču/ 'from k thirty.'

ཀ་མད་སུམ་ཅུ་ /ək–mət–sum–ču/ Consonants are

called གསལ་བྱེད་སུམ་ཅུ་ /səl–čet–sum–ču/, 'and

vowels are called དབྱངས /yəŋs/.

The vowel *matras* are as follows

ཱི i

ེ e

ོ o

ུ u

These *matras* are called གི་གུ་ /ki–gu/,

འབྲེང་བུ། /ḍeŋ–bu/, ན་རོ། /nə –ro/,

ཞབས་ཀྱུ། /ž ə ps–kyu/, respectively in Ladakhi.

(Syllable boundary[1])

It is called　ཆག་ /tsh-ək/ or　ཆག་　or

ཙག་དེ། /tsək-di/.

4.2.1. Vowels

There are two vowel symbols, viz.,　འ།　and　ཨ།་

both of them represent the phoneme /ə/.

(a) The use of the vowel symbol　འ།

The vowel symbol　འ།　is used in the following ways :

i)　འ།　is written in the beginning of certain items before

ག་　g　ད་　d　བ་　b　ཇ　j

ཛ　dz　ཁ་　kh　ཆ་　čh,　ཐ་　th,

---

[1] The rules about the marking of syllable boundary in the
the writing system are discussed in 4.4. It is, however,
important to mention here that all inherent a, i.e., a
inherently represented in the consonant graphs which are
elided due to the syllabic boundary marking are also not
written in our transcription in this chapter.

ཕ་ <u>ph,</u> and ཚ་ <u>tsh,</u> i.e., words having initial

voiceless aspirated stops and affricates and voiced stops and affricates (excluding retroflexes). In all such cases the **phonemic**

value of འ་ is zero. However items written with འ

symbol initially have a different meaning than those which are written without this symbol. Thus homophonous items having different meanings are represented differently in the script; one

with འ initially and the other without.

EXAMPLES:

འཁྲུ།   ཁྲུ།

əkhru /ṭhu/ '(to) wash' :   khru /ṭhu/ 'a measurement'

འགྲོ་   གྲོ་

əgro /ḍo/ '(to) go' :   gro /ḍo/ 'barley'

འཆམ།   ཆམ་པ།

əčh ə m /čhəm/ 'a dance   /čhə m-pə/ ' cold '
done with mask on' :

ৰেংৰ|

əǰə /ǰə/ 'rainbow in a : small piece'

 E|

ǰa /ǰə/ ~ /čə/   'tea'

ৰ্থব|

əthəb /thəp/ '(to) fight' :

থব|

thəb /thəp/ 'oven, fireplace'

ৰ্দৰ|

ədər /dər/ '(to) tremble' :

দৰ|

d ə r /dər/ 'cloth (literary)'

ৰ্ফৰ|

əphər /phər/ '(to) jump' :

ফৰ|

phər /phər/ ' that side, otherside'

ৰ্বঙ|

əbəŋ /bəŋ/ '(to) soak' :

বঙ|

bəŋ /bəŋ/ 'race'

ৰ্ছঙব|
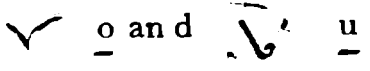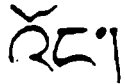
etshəŋgə /tshəŋge/ 'crow' :

ছঙৰ|
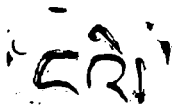
tshəns /tshəns/ 'nest'

ii) This symbol carries the *matras* ⌄ o̲ and ⌄ u̲

in certain words although such instances are rare,

རོད། o̲d   /od/   'light'

འོང་། o̲ṅ   /oṅ/   'come (literary)'

iii) This symbol also carries the *matra* of ⟍ i̲ and

represents the sound. [e],

ངའི ṅə̲i̲   /ṅe/   'me, to me'.
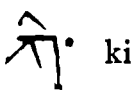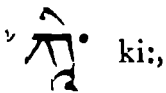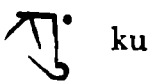
iv) In the final position its phonetic value is [a] in some items.

མདའ། mə̲d   [da] /də/   'arrow'

འགའ། əg̲ə̲   [ga] /gə/,   'some.'

Such instances are rare.

v) Long-vowels, in loan words are represented by writing
    the symbol at the bottom and the matra above the
    consonant, e.g ,

ཀི ki   ཀི ki:,   ཀུ ku   ཀུ ku :,

ཀོ་ ko   ཀཽ or   ཀཽ་ kau,   ཀེ ke

ཀཻ kəi.

b) THE USE OF THE VOWEL SYMBOL ཨ།

This symbol also represents the phoneme /ə/, initially.

ཨ་ནེ། /ə-ne/ 'aunt'

ཨང་གི་ /əŋ-gi/ 'number'

This symbol is also used to carry the Matras

⌃ /i/   ╲ /e/   ⌄ /o/   ⌄ /u/ for

representing such vowel sounds in the initial position.[1]   In other positions these vowels are represented by writing the Matras of

⌃ /i/   ╲ /e/ and   ⌄ /o/ at the top and ⌄

---

[1] Some people have started using ར། ə for writing the

matras ⌃ i,   ╲ e,   ⌄ o,   ⌄ u   recently.

However, the common practice is to use ཨ་ ə for this

purpose.

/u/ at the bottom of the consonant symbols but not touching the symbol itself. However if the shape of the symbol has a roundish curve at the bottom, a small hook is used to join the *matra* symbol with consonant symbol. Identical syllables occurring
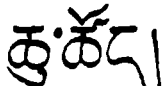
in sequence are written in linear order e.g., ནོ་ནོ། /no-no/
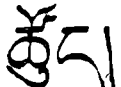
'younger brother', however there is an alternate way of writing such sequences by writing the *matra* two times with the same

consonant symbol e.g. /no-no/, ནོ། This is true of the

matras which are written at the top of the consonant symbols. If two successive syllables have the same consonant and the first syllable has /u/ vowel and the second has /i, e, or o/ vowel, it is possible to write the consonant symbol only once and write both the *matras*, one below and the other above, the consonant symbol. In such cases the order of transcribing is

consonant + /u/ + consonant + /i, e, or u/.

ཆུ་ཚོད། / ṭshu-ṭshot/ can be written as

ཚོུད། /ṭshu-ṭshot/ 'watch'

4.2.2. CONSONANTS

All consonant symbols in Ladakhi have the inherited vowel [a], when they occur in the final position and [ə] elsewhere. In order to write a final consonant symbol, a small circle ₀ is put below the consonant symbol. This is anologous to the writing of *halant* in Devangari. It is not used in modern books now, as

super-linear script dot indicating syllable boundary which marks
the presence of the inherited vowel in the following syllable also
indicates that the consonant preceding the dot is without a
following vowel, e.g.,

ལག་པ།   lə g-pa   /lə k-pə/   'hand'

or

ལག་པ།

བལ། or བལ།   bəl   /bəl/   'wool'

སླེ་ལ།   gle-la   /ɬe-lə/   'in Leh'

In items having only one consonantal symbol in the writing
system the dot indicating the syllable boundary is written, but it
does not indicate the absence of the vowel phoneme after that
consonant, i.e., still represents Cə

e.g.   ཇ།   ǰ   /ǰə/   'tea'

Following graphemes have more than one graph.

/r/   ར་ rə: ར་ ,   ྲ ྀ

/y/   ཡེ་ ye   ཡ ,   ྱ

/w/   ཝ་ wə: ཝ་ ,   ྭ

Their distribution is given later.

4.2.3 The following phonemes are represented by only one graphemic shape in the script:*

/ph/   ⟨ཕ⟩   <u>ph</u>a

ˌb/   ⟨བ⟩   ba

/dz/   ⟨ཛ⟩   <u>dz</u>a

/s/   ⟨ས⟩   <u>s</u>a

---

* It may however be noted that while writing Sanskrit borrowings having a ·voiced aspirate, such aspirates are represented in Ladakhi script by a composite group. In such cases the symbol representing the voiced sound is followed by the symbol h. The complete set of such composite ·graph sequences is

⟨བ⟩ <u>b</u> + ⟨ཧ⟩ <u>h</u> = ⟨བྷ⟩ <u>b</u>h

⟨ད⟩ <u>d</u> + ⟨ཧ⟩ <u>h</u> = ⟨དྷ⟩ <u>d</u>h

⟨ཇ⟩ <u>j</u> + ⟨ཧ⟩ <u>h</u> = ⟨ཛྷ⟩ <u>j</u>h

⟨ག⟩ <u>g</u> + ⟨ཧ⟩ <u>h</u> = ⟨གྷ⟩ <u>g</u>h

It may however, be mentioned that although these graph-sequences have a representation of <u>h</u>, they are pronounced in Ladakhi without aspiration.

/š/   ༑ཤ་   ša

/m/   མ་   ma

/h/   ཧ   ha

4.2.4. The following phonemes are represented by two symbol in the script :

/s/   i)   ད་   da   occurs in certain words before ba

       ii)   ས་   sa   occurs in the rest.

/z/   i)   ས་   sa   occurs before Voiced sounds

       ii)   ཟ་   za   occurs elsewhere

/ǰ/   i)   སྦྱ་   sbya   occurs in certain items

       ii)   ཇ་   ja   occurs elsewhere

/z/   i)   ཞ་   zwa   occurs initially in certain items.

       ii)   ཞ་   ža   elsewhere.

/w/   i)   ཌྭ་ ba after da in initial sequences and   in the

suffixes −wə, −wo, −wu.

ii)   ཝ་   wa elsewhere.

/p/   i)   ' བ་   ba before pause, before /s/ in the final

cluster and before a voiceless consonant of
the following syllable.

ii)   པ་   pa elsewhere.

4.2.5.   The phoneme /r/ is represented by four   symbols in
the script.

/r/   i)   རྩ་   sa occurs before ཙ་ tsa   as   the first

member of the conjunct.

ii)   རླ་   la occurs before   རྦ་ ba as the first mem-

ber of the conjunct.

iii)   རྡ་   rda   occurs in the final position in certain

items in old texts.*

---

* See note on page 48 for an example of 4.2.5. (iii).

iv) ཌ   da occurs in the numeral བཅུ་དགུ

  /čŭ-rgu/ 'nineteen'

v) ཪྭ   rwa occurs in certain items initially.

vi) ཪ   occurs elsewhere,

4.2.6. The following phonemes are represented by more than one symbol in the script ; in some cases these are also combinations of two different symbols :

/t/ i) ཏྭ   twa occurs initially in certain items.

ii) ད   da before pause, before /s/ in the final

  cluster and before a voiceless consonant of the following syllable.

iii) ཏ   ta occurs elsewhere.

/d/ i) དྭ   dwa occurs initially in certain items.

ii) ད   da occurs elsewhere.

/ts/ i)   ཙྭ   t swa occurs initially in certain items.

     ii)   ཙ   tsa occurs elsewhere

/tsh/ i)   ཚྭ   tshwa occurs initially in certain items.

     ii)   ཚ   tsha occurs elsewhere

/č/ i)   ཅྭ   čwa occurs initially in certain items (see 4.2.7.)

     ii)   པྱ   pya occurs initially in certain items (see 4.2.7.)

     iii)   བྱ   bya occurs initially in certain items (see 4.2.7.)

     iv)   ཅ   ča occurs elsewhere.

/čh/ i)   ཕྱ   phya occurs initially in certain items (see 4.2.7.)

     ii)   ཆ   čha occurs elsewhere

/ñ/ i)   ཉྭ   ñwa occurs initially in certain itms.

     ii)   ཉ   ña occurs elsewhere.

/k/   i)   ཀྭ   kwa occurs initially in certain items

       ii)   ག   ga occurs before pause, before /s/ in a final

                    cluster and before a voiceless consonant of

                    the following syllable.

       iii)   ཀ   ka occurs elsewhere.

/kh/   i)   ཁྭ   khwa occurs initially in certain items.

       ii)   ཁ   kha occurs elsewhere.

/g/   i)   གྭ   gwa occurs initially in certain items.

       ii)   ག   ga occurs elsewhere.

/n/ * i)   ནྡ   nda occurs finally in certain items in old

                    texts.

_____

   ✸ In the final position, in three items a graphic sequence of

two graphs with   ད   da as the second member is written but

it is never pronounced.   Such items are as follows :

ii) ཊ་ na occurs in Sanskritic loanwords with retroflex nasal.

iii) ན་ na occurs elsewhere.

/1/ * i) ལྡ་ lda occurs finally in certain words in old texts.

ii) ལ་ la occurs elsewhere.

4.2.7   Representation of /č/ and /čh/

/č/ is represented mostly by a single graph ཙ་ ča.

It is also written in some words by combining two different graphs, i.e., ཙྭ་ čwa, པྱ་ pya, and བྱ་ bya in

_____

ཀུན་། kund /kun/ all

ཤརད་། šərd /šər/ east
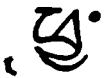
ཕ་རོལ་། pha-rold /phə-rol/

certain words ; the allographs ᠊᠊ and ᠊᠊ of wa and

ya are written at the bottom of the symbols ᠊᠊ ča,

᠊᠊ pa and ᠊᠊ ba. The aspirated form of this affricate

/čh/ is represented by a single graph ᠊᠊ čha and also by

combining the graphs of ᠊᠊ pha and ᠊᠊ ya i.e.

᠊᠊ phya ; the allograph ᠊᠊ of ya is written at the bottom

of the symbol for pha.

4.2.8. REPRSENTATION OF RETROFLEX PHONEMES :

The retroflex consonants /ṭ, ṭh, ḍ ṣ/ are represented by shapes, which are formed by joining two different graphs representing other consonants as given in the list. This composite graph in each case represents a single phoneme. All composite graphs representing these phonemes are listed below.

/t/   pra   tra,   kra   reverse ta

/th/   phar,   thra,   khar   reverse tha

/d/   bra   dra   gra   reverse da

/s/   sra   hra   śra   reverse śa

The symbol 𐴴 ra before ka, ña, ta, ŋa and symbol

ཨལ la before ka, ŋa, the symbol of ད da before pa

represent /ṣ/, the graphic sequence mra represents /ṣm/. These
are listed below :

རྐ rka   /ṣk/   ལྐ lka   /ṣk/

རྙ rña   /ṣñ/   ལྔ lŋa   /ṣŋ/

རྟ rta /ṣ/   དཔ dpa /ṣ/

རྔ rŋa /ṣŋ/   སྨ mra /ṣm/

(i) Symbol ཊ ṭa, ཋ ṭha, ཌ ḍa
are the reversed shapes of the graphs representing the dental

consonants i. e. ཏ ta, ཐ tha, ད da

Likewise the symbol ཥ ṣa is the reverse shape of the

symbol for palatal fricative ཤ ša.   The reverse shape

ཕ of dental nasal ན na is used in the script for retro-flex nasal in Sanskrit loanwords, but is ponounced as dental nasal.

These reversed symbols represent the retroflex consonants [ṭ], [ṭh], [ḍ] and [ṣ] respectively in Sanskrit loanwords only.

(ii) The three composite graphs used for writing /ṭ / are formed by joining the graphs of ཀ ka, པ pa ཏ ta with the symbol for ར ra. The allograph of grapheme ར is used as the constituent element and placed at the bottom of the above consonant symbols.

iii) The three composite graphs for writing /ḍ/ are formed by joining the graph of voiced stops བ ba, ད da, ག ga with the allograph of the grapheme ར ra which is placed at the bottom of these graphs.

(iv) a) Ladakhi has three composite graphs for writing /ṣ/. These graphs are formed by writing the symbol used for

ཨ྄ sa,   ཧ ha,   ཞ ša   plus the allograph   \

of the grapheme ར ra, which is placed at the bottom of these graphs, as given here :

/ṣ/   ཨ྄   sa +   ར ra   ཧྲ sra

        ཧ   ha +   ར ra   ཧྲ hra

        ཞ   ša +   ར ra   ཞྲ šra

b) /ṣ/ in clusters /ṣk, ṣṅ, ṣm/, is represented by the allograph

ᠳ   of the grapheme ར ra,   which is placed at the top of the individual consonant symbol. In writing /ṣñ/ the phoneme /ṣ/ is represented by the allograph   ར of the grapheme ར ra and is put at the top of the symbol for /ñ/.

/ṣk/   ར ra +   ཀ ka =   རྐ rka

/ṣṅ/ ᠎᠎ ra ÷ ᠎᠎ ṅa = ᠎᠎ rṅa

/ṣ/ ᠎᠎ ra ÷ ᠎᠎ ña = ᠎᠎ rña

/ṣm/ ᠎᠎ ra + ᠎᠎ ma = rma

/ṣ/ in cluster /ṣm/ is also represented by the combination of

᠎᠎ ma + ᠎᠎ ra, and the allograph ᠎᠎ of ᠎᠎ ra

is placed at the bottcm, i.e., /ṣm/ = ᠎᠎ ma + ᠎᠎ ra

᠎᠎ mra.

c) /ṣ/ in clusters /ṣk, ṣṅ/ is also represented by the

symbol ᠎᠎ la representing /l/ in the script and it is written

at the top. Thus while /ṣk/ can be written as ᠎᠎ ra +

᠎᠎ ka = ᠎᠎ rka in certain words, it is also represented as

᠎᠎ la + ᠎᠎ ka ᠎᠎ lka in some other words ;

similarly while /ṣŋ/ is written as ར་ ra + ང་ ŋa/ ṣŋ/

in certain items, it is also written as ལ་ la + ང་ ŋa =

ལྔ། lya   in some other items.

   d) /ṣ/ in the cluster /ṣm/, is written as མ་ ma +

ར་ ra the allograph ◌ྲ of the grapheme ར་ ra is

placed at the bottom i.e. མ་ ma + ར་ ra = སྨྲ། /ṣm/

   e) /ṣ/ in the cluster /ṣp/, is represented by the   rapheme

ད་ da, e.g. for writing /d/ as ད་ da + པ་ pa = དཔ།

/ṣp/ ; in such cases ད་ da is written before པ་ pa

In certain regions, it is in free variation with /sp/, but still

written as དཔ།

   f) The cluster /rt/ is represented by writing the allograph

◌ྲ of the grapheme ར་ ra at the top of the symbol for

ta. It may however be noted that due to the free variation of

/r/ ~ /s/ before ![graph] ṭa, this also represents /ṣa/ in /ṣṭ/.

4.2 9. REPRESENTATION OF /ɬ/

/ɬ/ is represented by six different composite graphs, which are combinations of two different graphs as shown in the following table.

/ɬ/   [ɬ]

![graph] la   +   ![graph] ha   =   ![graph] [ɬ]

![graph] ka   +   ![graph] la   =   ![graph] [ɬ]

![graph] ga   +   ![graph] la   =   ![graph] [ɬ]

![graph] ba   +   ![graph] la   =   ![graph] [ɬ]

![graph] ra   +   ![graph] la   =   ![graph] [ɬ]

![graph] sa   +   ![graph] la   =   ![graph] [ɬ]

In ཧ྅ lha, the symbol for la ལ is written at the

top and the symbol for ཧ ha at the bottom. In all other

cases the symbol for ལ la is written at the bottom as shown

in the table. In all the six cases the full shapes of both the

symbols are written.

4.2.10. The phonetic value of ba, da, ga, ma in certain absolute initial letter-sequences as given below is zero (except in the case of dpa which represents /ꞏsp/ ᴧ /sp/

THE SEQUENCES ARE GIVEN BELOW :

i)   བ ba [b] before ཀ ka [k], ག ga [g],

ང rŋa [sŋ], ཙ ča [č], ཇ rǰa [rǰ]

སྙ sña[sñ], ཏ ta [t] སྣ sna [sn],

ཙ rtsa[rt̩s], ཞ ža [ž], ཟ za [z],

ཤ ša [š], ས sa [s] ;

ii) ग॰ g̲a before ᠴ॰ č̲a [č], ᠍ᢅ॰ ñ̲a [ñ],

ᢡ॰ t̲a [t], ᠴ॰ d̲a [d], ᢥ॰ n̲a [n], ᠴᢩ॰ t̲sa [ts]

ᢤ॰ ž̲a [ž], ᢐ॰ z̲a [z], ᢣ॰ y̲a [y],

ᢤ॰ š̲a [š], ᢥᢩ॰ s̲a [s] ;

iii) ᠴ॰ d̲a]d] before ᢊ᠍᠋॰ ka [k], ᢊ॰ g̲a [g],

ᠴ॰ g̲a [ŋ], ᢈ॰ b̲a [b], ᢎ m̲a [m], ᢈ॰ p̲a᠍᠋ p]

iv) ᢎ॰ ma [m] before ᢉ॰ k̲ha [kh],

ᢊ॰ g̲a [g], ᠴ॰ g̲a[ŋ], ᠴᢩ॰ č̲ha [čh],

ᢋ॰ j̲a [ǰ], ᢎᢩ॰ n̲a [ñ], ᢈ॰ t̲l a [th],

ᠴ॰ d̲a [d], ᢥ॰ n̲a [n], ᠴᢩ॰ t̲sha [t̲sh],

᠊ᢋ॰ d̲za [da].

7

It may however be noted that the words written with these graph sequences intitally have a different meaning than those in which the graphs of ba, da, ga, ma are not written. Thus homo-phonous items with different meanings are represented differently in the script ; one with these graphs and the other without.

EXAMPLES

(i)   b-:φ-

བཀའ།   /kə/   'order'   :   ཀ⋅   /kə/   'pillar'

b kə   ka

བགོས།   /gos/   'distribute' (imp.)   :   གོས།   /gos/   'long coat'

b go s   go s

བརྔ།   /ṣŋə/   '(to) cut, reap'   :   རྔ།   /ṣŋə/   'a round drum'

b rŋ   ṣŋa

*

བཅུ། /cu/ 'ten'

b cu

ཅུ་ལི། /cu-li/ 'apricot'

ču-li

བསྙེ་བྱེས། /sñe-čes/ 'to lean on'

b sñe-bye s

སྙེ་མ། /sñe-ma/ 'ear of corn'

sñe-ma

བཏིང་། /tiŋ/ 'spread (imp.)'

b ti ŋ

ཏིང་། /tiŋ/ 'small bowl for worship'

ti ŋ

བདག /dak/ 'I (archaic)'

b d g

དག /dak/ 'pure'

d g

བསྣམ	/snəm/	'(to) take (hon.)'	
b sn m			/snam-bu/ 'woollen'
			sn m-bu
བརྩེབ	/rtse-ba/	'love'	
b rtse-b			/rtse/ 'pᵃak'
			rtse
བཞི	/ži/	'four'	
b ži			/ži/ 'peace'
			ži
བཟར	/zər/	'dripping of water from a wet cloth, over flow'	
b z r			/zar/ 'a rake to remove rubbish'
			z r

'cover' /šups/

šu b s

'tooth' /so/

so

'who' /su/

su

'pillar' /kə/

ka

/šups/ '(to) whisper'

b su b s

/so/ 'bring up, fill'

b so

/su-bə/ 'welcome'

b su-b

(ii) d-: φ-

/kə/ 'difficult'

d k ə

ང་གོན་	/gon/	'temple'	གོན་	/gon/	'wear (imp.)'
d go n			go n		
ངངས་	/ŋos/	'real, pure'	ཊ	/ŋos/	'side'
d ŋo s			ŋo s		
ངབང་	/waŋ/	'power'	བང་	/baŋ/	'race'
dˑb ŋ			b ŋ		
ངམར་	/mer/	'red'	མར་	/mer/	'butter'
d m r			m r		

(iii) g-: ø-

 གཅིག /čik/ 'one'
g či g

 གཉིད /ñit/ 'sleep'
g ñi d

གཏིང /tiŋ/ 'depth'
g ti ŋ

གདམ /dam/ 'mud'
g d m

ཅིག /čik/ 'a little'
či g

ཉིཏ /ñit/ 'you (hon.)'
ñi t

ཏིང /tiŋ/ 'small bowl used for worship'
tiŋ

དམ /dam/ 'tight'
d m

बद्।   /nɔt/   'necessary (literary)' :   द्ऽ।   /nɔt/   'sick'

g n d   n d

གཙུག་ལག་ཁང་།   /t͜su-lək-kheŋ/   'monastery, : ཚུག་   /t͜suk/   'pierce'
                                  university'

g t͜su g-l g --khŋ   t͜su g

ཟི།   /ži/   'background' :   ཞི་བ།   /ži-ba/   'peace'

g ži   ži-b

གཟུགས།   /zuks/   'form, shape' :   ཟུགས།   /zuks/   'pierced'

g zu g s   zu g s

g yu l   /yul/   'war (literary)' :   yu l   /yul/   'village'

g s g   /šɔk/   '(to) cut into pieces, (to) operate' :   š g   /šɔk/   'monk's room'

g se r   /ser/   'gold' :   se r   /ser/   'yellow'

(iv) m – : φ –

m kh ə   /khə/   'sky' :   kh a   /kh/   'mouth'

མགོ /go/ 'head'

གོ /go/ '(to) understand'

མངར /ŋər/ 'sweet'

ངར /ŋar/ 'enthusiasm'

མཆན /čhan/ 'correction'

ཆན /čhan/ 'a kind of food, barley cooked in the form of soup'

མཉམཔོ /ñəm·po/ 'with'

ཉམཐག /ñəm-thək/ 'poor'

अबो| /tho/ 'a measurement' : ब्बो| /tho-wa/ 'big hammer'

m tho | tho-b

अदुड| /duŋ/ 'spear' : दुड| /duŋ/ 'big conch shell'

m du ŋ | du ŋ

अनन| /nɛn/ '(to) press, bury' : ननतन| /nɛn-tɛn/ 'certain'

m n n | n n-t n

ख्यिमतछेस| /khyim-tshes/ 'neighbour' : छेस| /tshes/ 'date'

khyi m-m tshes | tshe s

4.2.11 In certain items the graphic sequence db- occurring initially before u has a zero phonetic value, e.g.,

ཨ༌ /uks/ 'breath'

d bu g s

ཨ༌ /us/ 'centre, middle'

d bu s

In certain items three graph sequences are written in the beginning, and the first two of such graphs have zero phonetic value. Such cases are of dby- which corresponds with /y-/ e.g.,

ཨ༌ /yər/ 'summer'

d by r

ཨ༌ /yəŋs/ 'tune'

d by ŋ s

ཨ༌ /yips/ 'form, shape'

d byi b s

4.3. Clusters :

In previous sections all those cases have been discussed wherein a graph sequence or a composite graph (consisting of two or more symbols) represents one phoneme in Ladakhi.

Now the representation of consonant clusters of two or more consonant phonemes in the Ladakhi writing system will be discussed.

In Ladakhi most of the clusters are of two consonants and occur in the initial and final of the syllables. In most cases of initial clusters the graph representing the second consonant is written at the bottom of the graph for first consonant. The final clusters are written in linear sequencse. The allographs and sequencing of the symbols in individual cases will be discussed in detail in this section. The following initial clusters occur in the language :

  i) /k, kh, g + y/

  ii) /ñ + y/

  iii) /s + p, t, k, m, n, ñ, ŋ/

  iv) /z + b, d, g/

  v) /s + t, k, n. ñ, ŋ,/

  vi) /r + b, t, d, g, ǰ, ṭs, dẓ/

  vii) /l + p, t, d. č, ǰ, z, g/

It may be noted that sometimes the same consonant phoneme is represented by two different graphs. The details of the graphic representation of all the clusters is given below.

i)   When ᨇ y is the second members of the conjunct it is

represented by the symbol ⎵ which is written below the

first consonant, the first consonant is written in its full shape.

/ky-/ : ཀ k + ᨇ y = ཀྱ

/khy-/ : ཁ kh + ᨇ y = ཁྱ

/gy-/ : ག g + ᨇ y = གྱ

ii) /ṅ̃+y/. The phoneme /ñ/ is represented by ཉ m.

The partial shape ⎵ of y is added at the bottom of

the symbol.

/ñy/ ཉ m + ᨇ y = ཉྱ

iii) ས s graph as the first member of the conjunct is

written in its full shape; the second consonant which is
written at the bottom of the first one is also in its full shape.

/sp/ : ས s + པ p = སྤ

/st/ : ས s + ཏ t = སྟ

/sk/ : ས s + ཀ k = སྐ

/sm/ : ས s + མ m = སྨ

/sn/ : ས s + ན n = སྣ

/sñ/ : ས s + ཉ ñ = སྙ

/sŋ/ : ས s + ང ŋ = སྔ

iv) /z/ phoneme is represented in the script by the grapheme
s as the first member of the conjunct to which the full
shape of the second is written below the first.

/zb/ : ས s + བ b = སྦ

/zd/ : ꣓ ṣ + ᴅ ᴘ = 🔣

/zg/ : ꣓ ṣ + ᴅ g̲ = 🔣

v) /ṣ/ as the member is represented by ᴅ ṛ in the conjunct.

Its full fhape ᴅ is used before ṉ̃ 🔣 , elsewhere only its partial shape is used.

/ṣt/ : ᴅ ṛ + ᴅ ṭ = 🔣

/ṣk/ : ᴅ ṛ + ᴅ k̲ = 🔣

/ṣm/ : ᴅ ṛ + ᴅ m̱ = 🔣

/ṣn/ : ᴅ ṛ + ᴅ ṇ = 🔣

/ṣñ/ : ᴅ ṛ + 🔣 ñ = 🔣

/s̩/ in cluster /s̩k/ in certain items is also represented by a composite graph k̲y̲, e.g.

/s̩k/ : 𑂩 r̩ + གྐ k̲ + ཡ y̲ = 𑂪།

It may be mentioned that /s̩/ in /s̩/ can also be written by the graph ལ l̩ ; in such cases full shapes of both the graphs are written, the second being written below the first.

/s̩k/ ′: ལ l̩ + ཀ k̲ = 𑂩།

In writing the cluster /s̩m/ in certain items the symbol 𑂩 r̩ representing /s̩/ is written at the bottom of མ m.

/s̩m/ : 𑂩 r̲ + མ m̲ = 𑂫
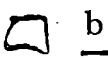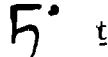
/s̩/ in /s̩ŋ/ is represented by the graph ལ l̩. Both the graphs are written in their full shapes, the second graph being written below the first one.

/s̩ŋ/ : ལ l̩ + ང ŋ̲ = ᩘ

vi) /r/ as the first member of the conjunct is represented by the allograph ᴾ The graph representing the second consonant is placed at the bottom of the first one.

/rb/ : ☰˙ r   +   ☐ b   =   ☰˙

/rt/ : ☰˙ ṛ   +   ᚢ˙ ṭ   =   ᚢ˙

/rd/ : ☰˙ ṛ   +   ᚢ ḍ   =   ☰˙

/rg/ : ☰˙ ṛ   +   ᚢ˙ g   =   ᚢ˙

/rj/ : ☰˙ ṛ + ᚢ˙ ǰ   =   ᚢ˙

/rṭs/ : ☰˙ ṛ + ᚢ˙ ṯs   =   ᚢ˙

/rdẓ/ : ☰˙ ṛ + ᚢ˙ d̲z   =   ᚢ˙
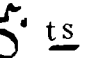
/r/ in the cluster /rṭs/ is also represented by the graph ☰˙ ṣ in some words :

/rṭs/ : ☰˙ ṣ +   ᚢ˙ ṯs +   ᚢ˙

In certain words, in cluster /rb/, /r/ is also represented by

ਕੁ˙ l and ਕ੍ b is written at bottom of ਕੁ˙ l.

/rb/ ਕੁ˙ l + ਕ੍ b = ਕੁੱ˙

vii) /l/ as the first member of the conjuct is always written in its full shape. The graph for the second member is also written in its full shape and is added below the first one.

/lp/ ਕੁ˙ l + ਕੁ˙ p = ਕੁੱ˙

/lt/ ਕੁ˙ l + ਤ˙ t = ਤ˙

/ld/ ਕੁ˙ l + ਦ˙ ḍ = ਕੁਦੀ

/lč/ ਕੁ˙ l + ਚ˙ č̌ = ਕੁਚ˙

/lǰ/ ਕੁ˙ l + ਜ˙ ǰ = ਕੁਜ˙

/lz/ ʻਕੁ˙ l + ਜ਼ ẓ = ਕੁਜ਼˙

/lg/ ਕੁ˙ l + ਗ˙ g̱ = ਕੁਗ˙

In the cluster /lz/, ਕੁ l is written at the bottom of ਜ਼˙ z.

/lz/ ਜ਼˙ z + ਕੁ˙ l = ਕੁਜ਼˙

★

INITIAL CLUSTERS OF THREE GRAPHS

There are only three initial three-consonant clusters in Ladakhi /sky/, /rgy/ and /ṣky/

/sky/ :   ཨ s +   ཀ k +   ཡ y = སྐྱ

/rgy/ :   ར r +   ག g +   ཡ y = རྒྱ

/ṣky/ :   ར r +   ཀ k +   ཡ y = རྐྱ

The following clusters occurring in the numerals are written as follows,

/pč̌/ :   བ p +   ཚ č̣ = བཚ

/kš̌/ :   ག g +   ཚ č̣ = གཚ

/ks/ :   ཀ k +   ས s = ཀས

/kñ/ :   ག g +   ཉ ñ = གཉ

/bd/ :   བ b +   ད d = བད

/bž/ :   བ b +   ཟ z = བཟ

/rg :   ད d +   ག g = རག

/brgy/ :　�བ་ b + ར་ r + ག་ g + ཡ་ y = བརྒྱ་

It is clear from the above that grapheme b is pronounced as [p] before [č]. Grapheme g is pronounced as [k] before [s, š, ň].

It is important to mention that all these graphic sequences represent two consonant cluster phonemically only when they occur after an open syllable, when these clusters occur in the absolute initial of a numeral item the first graphs of all the above seven sequences have zero phonetic value, i.e., they are not pronounced.

EXAMPLES

བཅུ་ /ču/ 'ten' : བཞི་བཅུ་ /ži-bču/ 'forty'

b ču 　　　　　　　　　b ži-b cu

གཅིག་ /čik/ : བཅུགཅིག་ /ču-gšik/ eleven

g či g 　　　　　　　　　b ču-g či g

 /ñis/ 'two' : /cu-gñis/ 'twelve'

  g ñi s   b ču-g ñi s

 /dun/ 'seven' : /ču-bdun/ 'seventeen'

  b du n   b ču-b dun

 /ži/ 'four' : /cu-bži/ 'fourteen'

  b ži   b cu-b ži

 /gu/ 'nine' : /ču·rgu/ 'nineteen'

  dgu   b ču-d gu
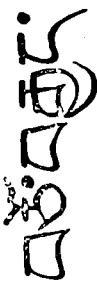
/rgyət/ 'eight' ; /čo–brgyət/ 'eighteen'

b rgy d b co– b rgy d

FINAL CLUSTERS

There is only one graph [symbol] s which occurs as the second member of the final clusters with /p/, /m/,

/k/, /t/, /n/ /ŋ/ /r/ and /l/ as first members.

/ps/ [symbol] ba [symbol] s /šups/ 'covers'

š u b s

/ms/ [symbol] m + [symbol] s /tshəms/ 'border'

m tsh m s

/kѕ/   +   /toks·po/   'friend'

do g s po

/ŋѕ/   +   /t͡sheŋs-pə/   'brahmin'

tsh ŋ s- pa

/tѕ/   +   /di-e-d͡zəts/   'wrote (honourific)'

ə bri-ə· m dz d s

/nѕ/   +   /tɦəns/   'applied fomentation'

sl m s

/rs/   ར r   +   རྶ s   ཟེརས་   /zers/   'told'

<u>ze</u>   <u>r</u>   <u>s</u>

/ls/   ལ l   +   ས s   ཕྱག་འཚལས་ /čhǝk-tṣhǝls/ 'bowed in salutation'

<u>phy</u> <u>g·</u> <u>ǝ</u> <u>tsh</u> <u>l</u> <u>s</u>

4.4. The above description of the Ladakhi script makes it evident that it has a certain amount of variations and irregularities in terms of phonemic equivalences of the symbols. Such irregularities are of three types:

(i) Certain symbols are written in the script but have zero phonemic status. However, sometimes the writing of these symbols in certain lexical items marks a difference in meaning (see sections 4.2.1, 4.2.10).

(ii) One phoneme is represented by more than one symbol and the occurrences of such symbols are predictable only in terms of specific lexical items.

(iii) One symbol is used for representing more than one phoneme.
In such cases also the symbol is predictable only i n terms
of occurrences of specific lexical items.

For the purpose of unambiguous representation of Ladakhi
sounds in the writing system, it will be necessary to affect some
modifications in the script ; so that each phoneme is represented
by one and only one symbol unambiguously.

4.5. PUNCTUATION CONVENTION :

(i) In Ladakhi, a small dot (.) after the grapheme placed in
linear positon indicates the syllabic boundary ; it is called

in Ladakhi /šət/ ཤད་ , e.g.

ནང་   /nəŋ/   'inside, room'

ཁང་པ་   /khəŋ-pə/   'house'

It may be noted that syllabic boundary is marked even
before pause, thus in a two-letter seqence which is one
syllable, the inherent a of the second letter is never
pronounced. Likewise in a three-letter sequence which
represents one syllable the inherent vowel a of the second
as well as the third letter is not pronounced, e.g.

སྨན་   /sm ə n/   གཅས   /kəŋs/

(ii) The small circle at the bottom of the grapheme marks the
lack of the inherent vowel, a, this is anologous to *Devanagari*
halant. However it is used only in the books written
for the children, e.g.

ᰣᰧᰨ /ŋən-pa/ 'bad one'

(iii) The syllable boundary marking dot · is not marked when a vowel is written after an open syllable. Thus [mi-i] is represented as ᰣᰨ· <u>mi</u>-i. It is clear that syllable marking dot (.) is not put after-<u>mi</u>, although it is a syllable. Such cases occur when the suffixes -i and -e are added to open syllabic items.

(iv) Full-stop is indicated by a vertical line after a sentence, but if the final graph has a verticle line the full-stop is not marked, e.g.

1. ᰣᰨᰩᰪ /i-bo-ŋe-yin/ 'this is my house'

   but

2. ᰣᰨᰩᰪ· /kho-nəŋ-ŋə-duk/

   'he is in the house'

Last graph in the second sentence has a vertical line, thus full-stop is not marked with another vertical line as in the sentence 1. above.

In poetry it is indicated by two vertical lines and between these two vertical lines a little space is left ‖ , but if the final graph has a vertical line then only one vertical line is used to mark a full-stop, e.g.

བདེ་ཞིང་སྐྱིད་པའི་དབྱར་གྱི་དུས།།

རི་རྩུང་ཚང་མ་སྒྲོ་ཉེམ་ཉེམ། ․།

[dɪ̄ -žiŋ -skyit-pE-yEr-gyi-tus]
[ri-łuŋ-t̥ʂhəŋ-mə-sɳ ꞁ-o̥dEm-ɪ̥dɪ̄m]

'beautiful and gay time of summer has come'
'at the feet of the mountain the greenary is danceing'

but ཀུན་ལ་ཕན་ཐོགས་ཡོང་བར་ཤོག

[kun-lə -phEn - thꞁks-yꞁ ꞁ -wər- š ꞁ k]
'let all have the profit'

At the end of the chapter, story or at the completion of a poem four lines are used to mark the full-stop, between the first two lines there is a very little gap and then some space is left and then two lines are written, e.g. ‖ ‖

If the final graph has a verticle line then this fullstop is marked with three lines; one line is written and after the space two more lines are written i.e., ǀ̄ ‖ , e.g.

སློབ་དཔོན་ཨ་ནུས་མཛད་པ་རྫོགས་
སོ།། ‖
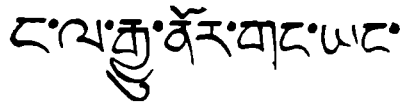
[ł ꞁ p-p ꞁ n-ə-nus-dzət-pa- ɪdz ꞁ ks-so]
'created by the *Guru* (teacher) Anu (name) is finished'

but .... འཏྲིན་ནསའིཏྲ།། ‖

...............[ʈə-šis-š ꞏɲ̩k]   'Mangal be'

(v) A syllable is not divided between two successive lines, i.e,
     a bi-letter syllable has to be written in the same line. In case
     a sentence is not completed in one line, a syllable or a
     sequence thereof is written in the following line and the full-
     stop marks this phenomenon by placing a dot above the
     verticle line,

ང་ལ་རྒྱུ་ནོར་གང་ཡང་
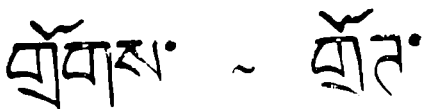
[ŋe–lə–rgyu–n ꞏɲ̩r–kəŋ–yeŋ–mEt]
'I do not have any money and property'

(vi) If the word has a cluster in the final position, and there is
      no space in the line, instead of writing the syllable in the
      next line the cluster is written differently.

a) གཌ་ [ks] at the end of a line may be alternatively

written as ཌ , this is the reverse shape of ཏ [t], e.g.

ཕྱོགས་ ~ ཕྱོཌ་

dogs ~ do t reverse   [ʈ ꞏɲ̩ks]   'friend'

b) In case of [ms] ནམས་ cluster in the final position, if there
is no space to write the two graphs, then a small circle is
placed at the top of the preceding grapheme; and its

phonetic value is མ་ m, but in Sanskrit loan words its
‾

phonetic value is [ŋ], e.g.

རྣམས་ ~ རྨ̊ས་   [snəms]   'plural'

r n m s ~ rn̊ s
‾ ‾ ‾‾   ‾ ‾

ཧཱུྃ   [huŋ]   (skd.)

həu°
‾‾‾

(c) However, in all other clusters at the end of a line if there
is no space to write two symbols in linear succession, the
symbol for [s] is written at [the bottom of the preceding
symbol, e.g.

ལ་དྭགས་ ~ ལ་དྭག྄ས   [lə-dəks]   'Ladakh'

l· dwks ~ l dw ks
‾ ‾‾   ‾‾ ‾‾

or the full syllable is written in the next line.

vii) a) In case of inadvertant omission of the second consonant
of the cluster it can be written at the bottom of the first
consonant symbol.

ཚོགས་ ~ ཚོུ་ [t̯sh‿ks]

ཐབས་ ~ ཐབུ་ [thəps]

b) If one letter is omitted while writing that graph is written at the bottom of that line and not above as in Roman, Devanagari, etc., e.g.

ཡོན་ཏ་ན་ཟ་གསེར་ཡིན། ཅན་

[yʌn-t ə n-zEs-p ə-sEr-yin]
'knowledge is like gold'

or ཡོན་ན་ཞས་ ཅ

{yʌn-tən-žes]

4.6. HANDWRITING:

Ladakhi alphabet like some other alphabets has different shapes of letters when they are handwritten and when they are printed. The shapes of Ladakhi letters described upto this time are the printed ones. The handwritten forms in slow and fast writing are given below. Ladakhi being a syllabic language and the writing system also being syllabic the symbols given below represent consonants as well as consonants plus matras. The order of presentation here follows the traditional arrangement.

HAND-WRITING

	Slow	Fast

[ka]

[ki]

[ku]

[ke]

[ko]

[kha]

	Slow	Fast
[khi]		
[khu]		
[khe]		
[kho]		
[ga]		
[gi]		

Slow

बु॔

[gu]

बे॔

[ge]

बो॔

[go]

ང॔

[ŋa]

ངི॔

[ŋi]

ངུ॔

[ŋu]

	Slow	Fast

[ɳe]

[ŋo]

[ča]

[či]

[ču]

[če]

Slow   Fast

[čo]

[cha]

[čhi]

[čhu]

[čhe]

[čhɔ]
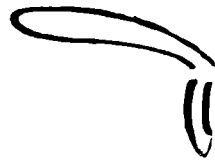
Slow Fast

	Slow	Fast

[ñi]

[ñu]

[ñe]

[ño]

[ta]

[ti]

	Solw	Fast

[tu]

[te]

[to]

[tha]

[thi]

[thu]

Slow   Fast

ཐེ་

[the]

ཐོ་

[tho]

ད་

[da]

དི་

[di]

དུ་

[du]

དེ་

[de]

Slow | Fast

དོ་ [do]·

ན་ [na]

ནི་ [ni]

ནུ་ [nu]

ནེ་ [ne]

ནོ་ [no]

Slow

[pa]

[pi]

[pu]

[pe]

[po]

[pha]

	Slow	Fast

[phi]

[phu]

[phe]

[pho]

[ba]

[bi]

	Slow	Fast
[bu]		
[be]		
[bo]		
[ma]		
[mi]		
[mu]		
[me]		

	Slow	Fast
[mo]		
[tsa]		
[tsi]		
[tsu]		
[tse]		
[tso]		

	Slow	Fast
ཚ [tṣha]		
ཚི [tṣhi]		
ཚུ [tṣhu]		
ཚེ [tṣhe]		
ཚོ [tṣho]		
ཛ [dza]		

Slow   Fast

[dzi]

[dzu]

[dze]

[dzo]

[wa]

[wi]

	Slow	Fast
[wu]		
[we]		
[wo]		
[ža]		
[ži]		
[žu]		

	Slow	Fast
[že]		
[žo]		
[zɪ]		
[zi]		
[zu]		
[ze]		
[zo]		

10

Slow Fast

[ə]

[əi]

[əu]

[əe]

[əo]

[ya]

	Slow	Fast

[yi]

[yu]

[ye]

[yo]

[ra]

[ri]

	Slow	Fas
[ru]		
[re]		
[ro]		
[la]		
[li]		
[lu]		

	Slow	Fast

[le]

[lo]

[śa]

[ši]

[šu]

[še]

	Slow	Fast
[šo]		
[sa]		
[si]		
[su]		
[se]		
[so]		
[ha]		

	Slow	Fast
[hi]		
[hu]		
[he]		
[ə]		
[ə]		
[i]		

	Slow	Fast

[u]

[e]

[o]

Clusters written in the script representing single phoneme or two phonemes, with *matra* as well as without *matra* are written as follows:

[ṭa]

[ṭi]

[ṭu]

	Slow	Fast

[ṭe]

[ṭo]

[ṣa]

[ṣi]

[ṣu]

[ṣe]

	Solw	Fast
[ṣo]		
[skə]		
[ski]		
[sku]		
[ske]		
[sko]		

	Slow	Fast

[ska]

[ḷki]

[ḷku]

[ḷke]

[lko]

[ṣka]

	Slow	Fast

[ski]

[sku]

[ske]

sko]

[ta]

[ti]

Slow Fast

[tu]

[le]

[lo]

[ka]

[ki]

[ku]

Slow   Fast

[ke]

[kɔ]

[sky]

[skyi]

[skyu]

[skye]

Slow Fast

[skyo]

[rgya]

[rgyi]

[rgye]
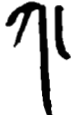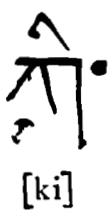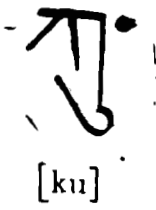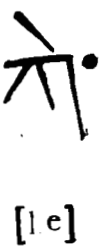
[rgyo]

The small dot indicating the syllable boundary, and full-stop in poetry and prose in slow and fast hand-writing are as follows

	Slow	Fast
[ka]		
[ki]		
[ku]		
[le]		
[ko]		

DOT FOLLOWED BY FULL STOP:

The dot indicating syllable boundary followed by the fullstop is omitted in slow and fast hand-writing; it is written only after [ŋ]

	Slow	Fast

Full stop is written after the grapheme which has vertical line, but in hand writing the straight parpenditicular nature of this line is not maintained and is replaced by symbols shown below :

		Slow		Fast
[ga]				
[ka]				
[ma]				

4 7.   SYSTEM OF DEVANAGARI SYMBOLS FOR LADAKHI

For writing Ladakhi language in Devanāgari script, the following system together with equivalent Ladakhi symbols and phonemic values is suggested.

(a)   LADAKHI ALPHABETS

k	kh	g	ŋ
क	ख	ग	ङ
č	čh	ǰ	ñ
च	छ	ज	ञ
t	th	d	n
त	थ	द	न
p	ph	b	m
प	फ	ब	म

ཙ	ཚ	ཛ	ཝ
ts̥	tsh	dz̥	w
च़	छ़	ज़	व

ཞ	ཟ	འ	ཡ
ź	z	ə	y
ज़़	ज़	अ	य

ར	ལ	ཤ	ས
r	l	š	s
र	ल	श	स

ཧ	ཨ		
h	ə		
ह	अ		

(b) PRIMARY VOWEL SYMBOLS

Ladakhi	Phonemic	Devanāgari
ཨ	ɘ	अ
ཨི	i	इ
ཨེ	e	ए
ཨོ	o	ओ
ཨུ	u	उ

(c) SECONDARY VOWEL SYMBOLS

Matras as placed on consonants in the Ladakhi script and as suggested for Nagari are as follows :

Ladakhi	Phonemic	Nagari
◌	i	ि
◌	e	◌
◌	o	◌
◌	u	◌

EXAMPLES

ki	ke	ko	ku
कि	के	को	कु

(d) **OTHER CONSONANT SYMBOLS**

	ः	र

Ladakhi	Phonemic	Nāgari
ཚ་ ༀ ཚ་ ཐ་ ༈	ṭh	ठ
ཌ་ ཌ་ རྙ་ ར་	ḍ	ड
ཥ ཥ ཤ ཞ ཥ་	ṣ	ष

Ladakhi	Phonemic	Devanāgari
ཧྲི༔		
ཧྲེ༔		
ཧྲུ༔	ɿ	अँ
ཧྲོ༔		
ཧྲེ༔		
ཧྲེ༔		
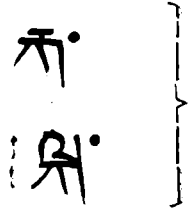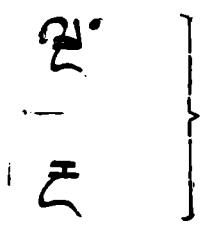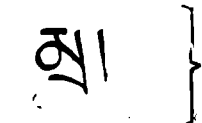
(e) CONSONANT CLUSTERS

Consonant clusters may be represented in the usual Devanagari manner either by conjoining the two symbols following the traditional rules or by marking the non-final consonant of the clusters by *halant*. Examples are as follows :

Ladakhi	Phonemic	Nāgarī
ཀ ཪྐ	ṣkə	ष्क or ष्क़
ཤ ཙ	ṣŋə	ष्ङ or ष्ङ़
ཉ	ṣ̃ñə	ष्ञ or ष्ञ़
ཏ	ṣtɔ ~ stə	ष्त or ष्त़ or स्त or स्त़
དཔ	ṣpᵉ	ष्प or ष्प़
ཐ	ṣmə	ष्म or ष्म़

4.8. SYSTEM OF PERSO-ARABIC SYMBOLS FOR LADAKHI

(a) LADAKHI ALPHABETS

ཀ	ཁ	ག	ང
k	kh	g	ŋ
ک	کھ	گ	ن

ཙ	ཚ	ཇ	ཉ
č	čh	ǰ	ñ
چ	چھ	ج	ن

ཏ	ཐ	ད	ན
t	th	d	n
ت	تھ	د	ن

12

པ་	ཕ་	བ་	མ
p	ph	b	m
پ	پھ	ب	م

ཙ་	ཚ་	ཛ་	ཝ
tṣ	tṣh	dẓ	w
چ	چھ	ج	و

ཞ་	ཟ་	འ་	ཡ
ž	z	ə	y
ژ	ز	ا	ے

ར་	ལ་	ཤ་	ས་
r	l	š	s
ر	ل	ش	س

ཧ་   ཨ།

h   ə

ང་   ཨ

(b) PRIMARY VOWEL SYMBOLS

Ladakhi	Phonemic Value	Perso-Arabic Symbol
ཨ་ ཨཱ་	ə	ا
ཨི་	i	ای
ཨེ་	e	ای
ཨོ་	o	او
ཨུ་	u	ای

(c) SECONDARY VOWEL SYMBOLS

Ladakhi	Phonemic Value	Perso·Arabic Symbol
᠎		
	e	
	o	
	u	

EXAMPLES

ki	ke	ko	ku

(d) OTHER CONSONANT SYMBOLS

Ladakhi	Phonemic Value	Perso-Arabic Symbol
ཊ྅ ᰑ྅ ᰑ྅ རྒ྅ སྤ྅ རྟེ	ṭ	ط
ᰑ྅ ᰑ྅ ᰑྃ ᰑ྅ རྦ྅	ṭh	ظ
ᰑ྅ ᰑྃ རྡ྅ ᰑ྅ ᰑ྅ རྔ྅	ḍ	ﺫ

Ladakhi	Phonemic Value	Perso-Arabic Symbol
ཚ ཚ ཆ ཕ མ	s̤	ث
ཚ྄ ཚ྄ ཀྵ གྲ གྲ བྲ བྲ ཚ྄	ʈ	ٽ
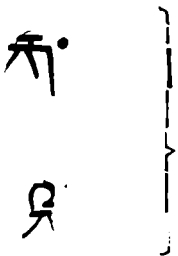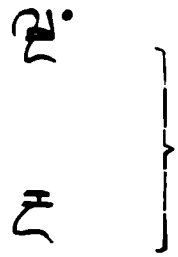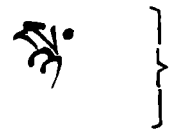
(e) CONSONANT CLUSTERS

Consonant clusters may be represented in the manner used to represent them in the Perso-Arabic Script.

Ladakhi	Phonemic Value	Perso-Arabic Representation
ऻ ॱ ॹ	˳skə	كِ
ॺ ॱ ॸ	˳ŋə	نۡ
ॱ	˳ñə	نۡ
ॱ	˳stə ~ stə	ت ~ ست

Ladakhi	Phonemic Value	Perso-Arabic Representation
་ŋ྅ལ། }	sˌpə	پُݜ
྅ཧྨ། }	sˌmə	مُݨ

5.0. To show the contrast between different phonemes, phonemes are contrasted in pairs in the following items. Contrasts are illustrated in different environments. Items are given in phonemic as well as phonetic transcriptions. It may be mentioned that words with vowels occurring initially and finally are rare in the language.

5.1. VOWELS

5.1.1. /i/

(i) /i/ : /e/

Initial

/i-bo/	'this'	/el-čes/	'to neglect'
[i-ɓo]		[El-čEs]	
/i-ču/	'bird'		
[i-ču]			

Medial

/ḍis/	'wrote'	/des/	'place where
[ḍis]		[dEs]	hay is kept'

/t̤hil/	'to climb'	/t̤hel/	'shame'
[t̤hil]		[t̤hɛl]	
/sir-mo/	'cold (hon.)'	/ser/	'gold'
[sir-mo]		[sɛr]	
/šiŋ/	'wood'	/šel/	'glass'
[šiŋ]		[šɛl]	

Final

/d̤i/	'(to) write'	/d̤e/	'ghost'
[d̤i]		[d̤e]	
/si/	'cheese'	/s̤e/	'(to) mix'
[s̤i]		[s̤e]	
/mi/	'man'	/me/	'fire'
[mi]		[me]	
/t̤i/	'knife'	/t̤e/	'mule'
[t̤i]		[t̤e]	

(ii)   /i/ : /ə/

Initial

/i-bo/	'this'	/ə-bo/	'that'
[i-ƀo]		[ə-ƀo] ~ [ə-bo]	
/i-ču/	'bird'	/ə-čik/	'grain with
[i-cu]		[ə-čik˃] ~ [ɐ-čik˃] husk'	

Medial

/čik/	'one'	/čək/	'(to) break'
[čik˃]		[čɐk˃] ~ [čək˃]	

/mik/	'eye'		/mək/	'war'
[mikˀ]			[məkˀ] ~ [məkˀ]	
/phiŋ/	'come out'		/phəŋ/	'spindle'
[phiŋ]			[phəŋ] ~ [pheŋ]	
/riŋ/	'long'		/rəŋ/	'self'
[riŋ]			[rəŋ] ~ [reɹ]	

Final

/di/	'this'		/də/	'arrow'
[di]			[da]	
/ni/	'even though'		/nə/	'oath
[ni]			[na]	
/či/	'what'		/čə/	'tea'
[či]			[ča]	
/ši/	'(to) die'		/šə/	'meat'
[ši]			[ša]	
/ə–bi/	'grandmother'		/ə–bə/	'father'
[ɐ-bi] ~ [ə-bi]			[ə-ba] ~ [ɐ-ba]	

(iii)   /i/ : /o/

Initial

/in/	'future tense suffix'		/ot/	'light'
[in]			[ʌt]	
/i–ru/	'here'		/oŋs/	'crop after having been thrashed'
[i–ru]			[ʌŋs]	

/i/	'genitive suffix'	/o-kər/	'a hilly animal
[i]		[ʌ-kər]	which looks
			like a cat'

Medial

/čik/	'one'	/čok/	'harvest kept
[čikˀ]		[čʌkˀ]	in small bundles
			after cutting'

/šik/	'lice, (to) wipe'	/šok/	'(to) cut the
[šikˀ]		[šʌkˀ]	wood'

/mik/	'eye'	/mok-mok/	'a kind of
[mikˀ]		[mʌkˀ-mʌkˀ]	food'

Final

/ri/	·hill'	/ro/	'dead body'
[ri]		[ro]	

/ṭi/	'knife'	/ṭo/	'barley'
[ṭi]		[ṭo]	

/mi/	'man'	/mo/	'feminine suffix'
[mi]		[mo]	

/ši/	'(to) die'	/šo-wə/	'wart'
[ši]		[šʌ-wa]	

(iv)   /i/ : /u/

Initial

/i/	'this'	/u/	'head (hon.)'
[i]		[u]	

/i-ru/	'this side'	/uks/	'breath'
[i-ru]		[uks]	
/i-thuk/	'upto this'	/u-thuk/	'one who is
[i-thuk˅]		[u-thuk˅]	sensitive, poor'

Medial

/žiŋ/	'field'	/žuŋ/	'government,
[žiŋ]		[žuŋ]	center'
/mil/	'mile'	/mul/	'silver'
[mil]		[mul]	
/dik/	'a cooking pot	/duk/	'(to) be,
[dik˅]	having a long neck'	[duk˅]	sit,

Final

/či/	'what'	/ču/	'ten'
[či]		[ču]	
/čhi-mə/	'tear'	/čhu/	'water'
[čhi-ma]		[čhu]	
/ri/	'hill'	/ru/	'tussel'
[ri]		[ru]	
/ži/	'four	/zu/	'bow'
[ži]	background'	[zu]	

5.1.2. /e/

(i) /e/ : /ə/

Initial

/el/	'(to) neglect'	/ə-loŋ/	'earing'
[El]		[ə-lɹ̩ŋ]	

/ə-če/   elder sister'
[ə-če] ~ [ɐ-če]

Medial

/des/	'place where	/dəs/	'rice'
[dɛs]	hay is kept'	[dəs] ~ [dɐs]	
/ṭhel/	'shame'	/ṭhəl/	'fees or tax in
[ṭhɛl]		[ṭhəl]	the form of money or work'
/šel/	'glass'	/šəl/	'(to) rinse'
[šɛl]		[šəl] ~ [šal]	

Final

/me/	'fire'	/mə/	'feminine suffix'
[me]		[ma]	
/ñe-mo/	'near'	/ñə/	'fish'
[ñɛ-mo]		[ña]	
/ŋe/	'my'	/ŋə/	'I'
[ŋe]		[ŋa]	

(ii) /e/ : /oˡ

Initial

/el/	'(to) neglect'	/ol/	'herb'
[ɛl]		[ʌl]	

Medial

/zer/	'to tell'	/zor/	'rake'
[zɛr]		[zʌr]	

/t̬sher-kə/   'sorrow   /t̬shor-wə/   'touch'
[t̬shEr-ka]   [t̬shʌr-wa]

/šel/   'glass'   /šol/   'plough'
[šEl]   [šʌl]

/khel/   '(to) climb   /khol/   'spin (imp)'
[khEl]   the hill'   [khʌl]

Final

/ɬe/   'name of a town'   /ɬo/   'south'
[ɬe]   [ɬo]

/me/   'fire'   /mo/   'feminine suffix'
[me]   [mo]

/že/   'penis'   /žo/   'curd'
[že]   [žo]

(iii)   /e/ : /u/

Initial

/el/   '(to) neglect'   /uks/   'breath'
[El]   [uks]

/ṭhel/   'shame'   /ṭhul/   'egg'
[ṭhEl]   [ṭhul]

/rel/   '(to) tie'   /rul/   'to get rotten,
[rEl]   [rul]   snake'

/šel/   'glass'   /šul/   'remains of food
[šEl]   [šul]   or drink

Final

/ɬe/	'name of city'	/ɬu/	'song'
[ɬe]		[ɬu]	
/phe/	'pounded barely'	/phu/	'blow with
[phe]		[phu]	mouth'
/ŋe/	'my'	/ŋu/	'(to) cry'
[ŋe]		[ŋu]	
/be/	'(to) open'	/bu/	'insect'
[be]		[bu]	

5.1.3.   /ə/

(i) /ə/ : /o/

Initial

/ə-mə/	'mother'	/o-mə/	'milk'
[ə-ma] ~ [a-ma]		[ʌ—ma]	
		/o-se/	'mulberry'
		[ʌ-se]	
/ə-če/	'elder sister		
[ə-če] ~ [ɐ-če]			

Medial

/žəŋ-čən/	'broad'	/zoŋ-po/	'busy
[žəŋ-čEn] ~ [zeŋ-čEn]		[zʌŋ-po]	
/tṣhər/	'(to) be finished'	/tṣhor/	'(to) hear'
[tṣhər] ~ [tṣher]		[tṣhʌr]	

/šel/   'wash'   /šol/   'laugh'
[šəl] ~ [šɐl]   [šʌl]

/khər/   'palace'   /khor/   '(to) revolve'
[khər] ~ [khɐr]   [khʌr]

Final

/sə/   'earth'   /so/   'tooth'
[sa]   ⌊so⌋

/žə/   'clay used for   /žo/   'curd'
[žaj]   bricks'   [žo]

/lə/   'pass'   /lo/   'year'
[la]   [lo]

/rə/   'goat'   /ro/   'dead body'
[ra]   [rɵ]

/khə/   'mouth'   /kho/   'he'
[kha]   [kho]

(ii)   /ə/ : /u/

Initial

/əm/   'used for feeding ·/um/   'kiss'
[əm] ~ [ɐm]   the baby'   [um]

/ə·sə/   'that'   /u·su/   'coriander seed'
[ə·sa] ~ [ɐ·sa]   ⌊u·su⌋

Medial

/khəl/   '(to) spin'   /khul/   'inside'
[khəl] ~ [khɐl]   [khul]

13

/šəl/ [šəl] ~ [šɛl]	'to rinse'	/šul/ [šul]	'remains of some food or drink'
/rəl/ [rəl] ~ [rɛl]	'hair of goat'	/rul/ [rul]	'snake'
/məl/ [məl] ~ [mɛl]	'print or impression of body part on a surface'	/mul/ [mul]	'silver'

Final

/sə/ [sa]	'earth'	/su/ [su]	'who'
/rə/ [ra]	'goat'	/ru/ [ru]	'tassel'
/ŋə/ [ŋa]	'eye'	/ŋu/ [ŋu]	'(to) cry'
/čhə/ [čha]	'pair'	/čhu/ [čhu]	'water'

5.1.4. /o/

(i) /o/ : /u/

Initial

/ot/ [ʌt]	'light'	/ut‑pə‑lə/ [ut‑pə‑lə] ~ [ut‑pə‑la]	'blue flower'
/o‑nə/ [ʌ‑na]	'yes'	/u‑nə/ [u‑na]	'oath (hon.)'

Medial

/mol/ [mʌl]	'told'	/mul/ [mul]	'silver'
/sol-pom/ [sʌl-pʌm]	'cook'	/sul/ [sul]	'wrinkle'
/rol/ [rʌl]	'burrow'	/rul/ [rul]	'snake'
/šol/ [šʌl]	'plough'	/šul/ [šul]	'remains of some food or drink'

Final

/žo/ [žo]	'curd	/žu/ [žu]	'bow'
/ro/ [ro]	'dead body'	/ru/ [ru]	tassel
/so/ [so]	'tooth'	/su/ [su]	'who'

5.2. CONSONANTS AND SEMIVOWELS

5 2.1. /p/

(i) /p/ : /ph/

Initial

/pək/ [pək�] ~ [pɛk˃]	'diet'	/phək/ [phək˃] ~ phɛk˃]	'pig'

✸

/–pə/	'masculine	/phə/	'father'
[-pa]	suffix'	[pha]	

/pəŋ/	'lap'	/phəŋ/	'spindle'
[pəŋ] [peŋ]		[phəŋ] ~ [pheŋ]	

/pər/	'design, block,	/phər/	'(to) bounce'
[pər] ~ [per]	photo'	[phər] ~ [pher]	

(ii) /p/ : /b/

Initial

/pər/	'photo'	/bər/	'(to) burn'
[pər] ~ [per]		[bər] ~ [ber]	

/pəŋ/	'lap'	/bəŋ/	'race'
[pəŋ] ~ [peŋ]		[bəŋ] ~ [beŋ]	

/pək/	'diet'	/bək/	'mask'
[pək⸴] ~ [pek⸴]		[bək⸴] ~ [bek⸴]	

/pə/	'bravery	/bə/	'cow'
[pa]	(literary)'	[ba]	

(iii) /p/ : /t/

Initial

/təŋ/	'(to) give'	/pəŋ/	'lap'
[təŋ] ~ [teŋ]		[pəŋ] ~ [peŋ]	

/tur–tur/	'one who is	/pur–pur/	'rough surface'
[tur–tur]	always in haste'	[pur–pur]	

/tər/	'frozen surface'	/pər/	'photo'
[tər] ~ [ter]		[pər] ~ [per]	

Final

/čhəp/   'water (hon.)'   /čhət/   'less'

[čhəp] ~ [čhɐp]   [čhət] ~ [čhɐt]

/rip/   '(to) cover'   /rit/   'to get numb'

[rip]   [rit]

/rub/   'to get mixed'   /rut/   'land or snow

[rub]   [rut]   slide'

/nup/   'to be drowned'   /nət/   'sickness'

[nup]   [nət] ~ [nɐt]

/sup/   'to bury'   /sət/   '(to) kill

[sup]   [sət] ~ [sɐt]

(iv)   /p/ : /k/

Initial

/pəŋ/   'lap'   /kəŋ/   'where

[pəŋ] ~ [pɐŋ]   [kəŋ] ~ [kɐŋ]   (literary)'

/pər/   'photo'   /kər/   'white'

[pər] ~ [pɐr]   [kər] ~ [kɐr]

/-pə/   'masc. suffix'   /kə/   'pillar'

[-pa]   [ka]

Final

/kəp-čes/   '(to) cover'   /kək-čEs/   'to close'

[kəp-čEs] ~ [kɐp čEs]   [kək-čEs] ~
                                   [kɐk-čEs]

/ɬəp/   '(to) learn, teach' /ɬək-pə/   'wednesday'
[ɬəp] ~ [ɬɐp]   [ɬək-pə] ~ [ɬɐk-pə]

/rəp/   'best'   /rək/   '(to) be (literary)'
[rəp] ~ [rɐp]   .   [rək^ˀ] ~ [rɐk^ˀ]

/rup-čes/   'to get melted   /ruk-čes/   'to pick up'
[rup-čɛs]   and mixed up'   [ruk-čɛs]

5.2.2.   /b/

(i)   /b/ : /d/

Initial

/bək/   'mask'   /dək/   'pure'
[bək^ˀ] ~ [bɐk^ˀ]   [dək^ˀ] ~ [dɐk^ˀ]

/bəŋ/   ·race'   /dəŋ/   'and
[bəŋ] ~ [bɐŋ]   [Pəŋ] ~ [dɐŋ] yesterday'

/bə/   'cow'   /də/   'arrow'
[ba]   [da]

/bər/   'between'   /dər/   'cloth'
[bər] ~ [bɐr]   [dər] ~ [dɐr]

/bəl/   'wool'   /dəl/   'free'
[bəl] ~ [bɐl]   [dəl] ~ [dɐl

(ii)   /b/ : /g/

Initial

/bəl/   'wool'   /gəl/   '(to be)
[bəl] ~ [bɐl]   [gəl] ~ [gɐl] incorrect'

/bər/   'gap'   /gər−/   'blacksmith'
[bər] ~ [ber]   [gər−] ~ [ger]

/bor/   '(to) keep'   /gor/   '(to be) late'
[bʌr]   [gʌr]

(iii)   /b/ : /m/

Initial

/bə/   'cow'   /mə/   'mother'
[ba]   [ma]

/bəŋ/   'race'   /məŋ−/   'many'
[bəŋ] ~ [beŋ]   [məŋ] ~ [meŋ]

/bək/   'mask'   /mək/   'husband'
[bək˺] ~ [bek˺]   [mək˺] ~ [mek˺]

/ben/   'target of an   /men/   'no'
[bEn]   arrow'   [mEn]

(iv)   /b/ : /w/

Initial

/beŋ/   'race'   /wəŋ/   'power'
[beŋ] ~ [beŋ]   [wəŋ] ~ [weŋ]

/ben/   'target of an   /wen−/   'seclusion'
[bEn]   arrow'   [wEn−]

/bə/   'cow'   /wə/   'fox
[ba]   [wa]

5.2.3.   /t/

(i)   /t/ : /th/

Initial

/tok/	'top'	/thok/	'roof'
[tʌk]		[thʌk]	
/tuŋ/	'a long	/thuŋ/	'(to) drink'
[tuŋ]	instrument'	[thuŋ]	
/təŋ/	'(to) give'	/thəŋ/	'ground'
[təŋ] ~ [tɐŋ]		[thəŋ] ~ [thɐŋ]	
/təm/	'conversation,	/thəm/	'(to) catch'
[təm] · [tɐm]	'proverb'	[thəm] ~ [thəm]	

(ii)   /t/ : /d/

Initial

/teŋs/	'gave'	/dəŋs/	'composition
[təŋs] ~ [tɐŋs]		[dəŋs] ~ [dɐŋs]	of music (Raga)'
/tok/	'highest point of	/dok/	'colour'
[tʌk]	a thing'	[dʌk]	
/toŋ/	'give (imp.)'	/doŋ/	'face'
[tʌŋ]		[dʌŋ]	
/təm/	'conversation		
[təm] ~ [tɐm]	proverb'		

(iii)   /t/ : /ṭ/

Initial

/toŋ–toŋ/   'give'   /toŋ–ṭoŋ/   'creed'
[tʌŋ–tʌŋ]   [tʌŋ–ṭʌŋ]

/tuk/   'poison'   /ṭuk–ṭuk/   'six'
[tukˀ] ~ [dukˀ]   [ṭukˀ–ṭukˀ]

/tər/   'cloth'   /ṭər'   'joke
[tər] ~ [tᵉr]   [ṭər] ~ [ṭᵉr]

/tiŋ–tiŋ/   'smooth'   /ṭiŋ–ṭiŋ/   'very lean'
[tiŋ–tiŋ]   [ṭiŋ–ṭiŋ]

(iv)   /t/ : /k/

Initial

/tər/   'cloth'   /kər/   'white'
[tər] ~ [tar]   [kər] ~ [kᵉr]

/təŋ/   '(to) give'   /kəŋ/   'where'
[təŋ] ~ [tᵉŋ]   [kəŋ] ~ [kᵉŋ]

/təp-čəs/   '(to) sow'   /kəp-čes/   'to cover'
[təp-čEs] ~ [tᵉp-čEs]   [kəp-čEs] ~ [kᵉp-čEs]

Final

/sət-čes/   'to kill'   /sək-čəs/   'to collect'
[sət-čEs] ~   [sək-čEs] ~
[sᵉt-čEs]   [sᵉk-čEs]

/ɬət-pə/   'brain'   /ɬək-pə/   'wednesday'
[ɬət-pa] ~   [ɬək-pə] ~
[ɬᵉt-pa]   [ɬək-pa]

/thət-po/   'happy'   /thək-pə/   'rope'
[thət-po] ~   [thək-pa ~
[thɐt-po]   [thɐk-pa]

(v)   /t/ : /s/

Initial

/təm/   'conversation,   səm/   'thought,
[təm] ~ [tam]   proverb'   [səm] ~ [sɐm]   discussion'

/təɲs/   'gave'   /səŋs/   'incense'
[təŋs] ~ [tɐŋs]   [səŋs] ~ [sɐŋs]

/tuŋ/   'long instrument' /suŋ/   '(to) say
[tuŋ]   [suŋ]   (hon.)'

/t/ : /s/

Final

/zət/   '(to) be worn   /zəs/   'food, material,
[zət] ~ [zɐt]   out'   [zəs] ~ [zɐs]   articles'

/šət/   '(to) say'   /sə̣s/   'prince'
[šət] ~ [šɐt]   [sə̣s] ~ [sɐ̣s]

5.2.4.   /d/

(i)   /d/ : ḍ/

Initial

/dok/   'colour   /ḍok/   'pasture'
[dʌk˺]   [ḍʌk˺]

/də/	'arrow'	/ḍə/	'voice, enemy'
[da]		[ḍə]	

/dək/	'pure'	/ḍək/	'rock'
[dək˃] ~ [deก˃]		[ḍək˃] ~ [ḍeก˃]	

. /dus/   'time'   /ḍus/   '(to) dig'
   [dus]   [ḍus]

(ii)   /d/ : /g/

   /dəl-/   'face'   /gəl/   '(to) be
   [dəl-] ~ [del-]   [gəl] ~[gel]   incorrect'

   /dəŋ/   'and'   /gəŋ/   '(to) fill'
   [dəŋ] ~ [deŋ]   [gəŋ] ~[geŋ]

   /dər/   'cloth'   /gər/   'blacksmith'
   [dər] ~[der]   [gər] ~ [ger]

(iii)   /d/ : /n/

Initial

   /də/   'arrow'   /nə/   'oath'
   [da]   [na]

   /dəm/   'mud'   /nəm/   'sky'
   [dəm] ~ [dəm]   [nəm] ~ [nem]

   /dəl/   'free'   /nəl/   '(to) sleep
   [dəl] ~ [del]   [nəl] ~ [nel]   (hon.)'

(iv) /d/ : /z/

Initial

/dər   'cloth'   /zər/   'Wooden fork
]dər] ~ [dɐr]   [zər] ~ [zɐr]   like thing to
                                              separate the
                                              husk from
                                              the grain'

/də/   'arrow'   /zə/   'planet'
[da]   [za]

/dʊks/   '(to) sit'   /zuks/   'shape'
[duks]   [zuks]

5.2.5. /ṭ/

(i) /ṭ/ : /ṭh/

Initial

/ṭu-gu/   'reel of thread' /ṭhu-gu/   'child'
[ṭu-gu]   [ṭhu-gu]

/ṭul/   'carnation'   /ṭhul/   'egg'
[ṭul]   [ṭhul]

/ṭu/   'corner'   /ṭhu/   'a kind of
[ṭu]   [ṭhu]   measurement'

/ṭi-čes/   '(to) ask'   /ṭhi-čes/   'to lessen'
[ṭi-čEs]   [ṭhi-čEs]

(ii)   /t̩/ : /d̩/

Initial

/ti–čEs/   '(to) ask·   /di–čes/   '(to) write'
[t̩i–čEs]   [d̩i–čEs]

/tu/   'corner'   /du/   '(to) dig·
[t̩u]   [d̩u]

/tes–mə/   'a kind of grass'   /des–šes/   'to get
[t̩Es–ma]   [d̩Es–šEs]   mixed'

/tuk/   'six'   /duk/   'dragon'
[t̩uk]   [d̩uk]

(iii)   /t̩/ : /s̩/

Initial

/ti/   '(to) ask'   /si/   'milk, a cow
[t̩i]   [s̩i]   gives soon
                                                   after the
                                                   birth of a
                                                   calf'

/tuk/   'six'   /suk/   '(to) shake
[t̩uk]   [s̩uk]   stir'

5.2.6.   /k/ : /kh/

Initial

/kə–wə/   'pillar'   /khə–wə/   'snow'
[kɐ–wa]~   [khɐ–wa]~
[ka–wa]   [kha–wa]

/kər/   'white·   /khər/   'palace'
[kər] ~[kɐr]   [khər]~ [khɐr]

/kəs/   'crack'   /khəs-/   'scholar'
[kəs] ~ [kɐs]   [khəs-] ~ [khɐs-]

/kəŋs/   'ice'   /khəŋ/   'house'
[kəŋs] ~ [kɐŋs]   [khəŋ] ~ [khɐŋ]

/kəl-čes/   'to load, to   /khəl-čes/   'to spin'
[kəl-čEs] ~   send'   [khəl-čEs] ~
[kɐl-čEs]   [khɐl-čEs]

(ii)   /k/ : /g/

Initial

/kəŋ/   'where   /gəŋ/   '(to) fill'
[keŋ] ~ [kɐŋ] (literary)'   [gəŋ] ~ [gɐŋ]

/kər/   'white'   /gər/   'blacksmith'
[kər] ~ [kɐr]   [gər] ~ [gɐr]

/kəp-čes/   'to cover'   /gəp-čes/   'to hatch egg
[kəp-čEs] ~   [gəp-čEs] ~
[kɐp-čEs]   [gɐp-čEs]

/kəl-čes/   'to load, to   /gəl-čes/   'to be
[kəl-čEs] ~   send'   [gəl-čEs] ~   incorrect'
[kɐl-čEs]   [gɐl-čEs]

5.2.7.   /ts̮/

(i)   /ts̮/ : /t/

Initial

/ts̮əm/   'how much'   /təm/   'proverb,
[ts̮əm] ~ [ts̮ɐm]   [təm] ~ [tɐm] conversation'

/tsəŋ/   'clean'   /təŋ/   '(to) give'
[t̬səŋ] ~ [t̬seŋ-]   [təŋ] ~ [teŋ]

/t̬sum-/   '(to) shut   /tuŋ/   'a long
[t̬sum-]   mouth or eyes'   [tuŋ]   instrument'

(ii)   /t̬s/   :   /č/

Initial

/t̬so-mo/   'chief lady'   /čo-mo'/   'nun'
[t̬s ʌ-mo]   [č ʌ-mo]

/t̬səŋ-/   'clean'   ,čəŋ/   'some'
[t̬səŋ-] ~ [t̬seŋ-]   [čəŋ] ~ [čeŋ]

/t̬sən/   'a kind of   /-čən/   'possessive
[t̬sən] ~ [t̬sen]   ghost'   [-čən] ~ [-čen]   suffix'

/t̬sik/   'word'   čik/   'one'
[t̬sik˃]   [čik˃]

(iii)   /t̬s/   :   /t̬sh/

Initial

/t̬səŋ-mə/   'clean'   /t̬shəŋ-mə/   'all'
[t̬səŋ-ma] ~   [t̬shəŋ-ma] ~
[t̬seŋ-ma]   [t̬sheŋ-ma]

/t̬sot/   'wood   /t̬shot/   'estimate'
[t̬s ʌt]   used for   [t̬shʌt]
     colour'

/t̬soks/   'same'   /t̬shoks/   'forest'
[t̬s ʌks]   [t̬sh ʌks]

/t̠sir/   '(to) milk the   /t̠shir/   'turn'
[t̠sir]   cow, squeeze'   [t̠shir]

(iv)   /t̠s/   :   /d̠z/

/t̠sun–bə/   'young monk'   /d̠zun–bə/   'lie'
[t̠sun–ba]   [d̠zun–ba]

/t̠so/   'a sitting posture /d̠zo/   'Ladakhi
[t̠so]   of dog or   [d̠zo]   animal used
               elephant'   for carrying
                                                  load or
                                                  ploughing'

/t̠sum/   'to shut mouth   /d̠zum/   '(to) smile
[t̠sum]   or eyes'   [d̠zum]

/t̠sem–čes/   'to sew'   /d̠zem–čes/   'to shrink,
[t̠sEm–čEs]   [d̠zEm–čEs]   avoid'

(v)   /t̠s/   :   /s/

Initial

/t̠sik/   'word'   /sik/   'winnowing'
[t̠sik˃]   [sik˃]

/t̠sum/   '(to) shut mouth,   /sum/   'three'
[t̠sum]   eye'   [sum]

/t̠səm/   'how much'   /səm-/   'thought,
[t̠səm] ∼ [t̠sɐm]   [səm-] ∼ [sɐm-] discussion'

5.2.3. /tʂh/

(i) /tʂh/ : /čh/

Initial

/tʂhət/	'heat'proof'	/čhət/	'promise'
[tʂhət] ~ [tʂhɐt]		[čhət] ~ [čhɐt]	
/tʂhəks/	'dense'	/čhəks/	'(to be) tied'
[tʂhəks] ~ [tʂhɐks]		[čhəks] ~ [čhɐks]	
/tʂhər/	'(to be) finished'	/čhər-/	'rain'
[tʂhər-] ~		[čhər-] ~	
[tʂhɐr-]		[čhɐr-]	
/tʂhe/	'life'	/čhe/	'big'
[tʂhe]		[čhe]	

5.2.9. /dz/

/dz/ : /z/

Initial

/dzə-wo/	'friend'	/zə-čes/	'to eat'
[dzɐ-wo] ~		[zɐ-čEs] ~	
[dza-wo]		[za-cEs]	
/dzə-rə/	'lunch'	/zər/	'wooden fork
[dza-ra]		[zər] ~ [zɐr]	like thing to
[dzɐ-ra]			fly the fodder
			to separate
			husk from
			grains'
/dzuk/	'(to) plant'	/zuk/	'to pierce'
[dzukˀ]		[zukˀ]	

/d̮zo'/   'Ladakhi   /zo/   'shape'
[d̮zo]   animal for   [zo]
               carrying load and for
               ploughing'

(ii)   /d̮z/   :   /ž/

Initial

/d̮zo/   'a Ladakhi   /žo/   'curd'
[d̮zo]   animal used for   [žo]
               carrying load
               and for ploughing'

5.2.10.   /č/   :   /čh/

(i)   /č/   :   /čh/

Initial

/čəŋ-met/   'nothing'   čhəŋ-met/   'absence of
[čəŋ-mEt] ~   [čhəŋ-mEt] ~   wine'
[čeŋ-mEt]   [čheŋ-mEt]

/ču/   'ten'   /čhu/   'water'
[ču]   [čhu]

/čək>/   '(to) break'   /čhək/   '(to) break
[čək>] ~ [ček]   [čhək>] ~ [čhek>] wood etc.'

/čət/   '(to) cut'   /čhət/   '(to) break'
[čət] ~ [čet]   [čhət] ~ [čhet] thread etc.'

/čən/   'possessive suffix'   /čhən/   'cooked food'
[čən] ~ [čan]   [čhən] ~ [čhɛn]

(ii)   /č/   :   /ǰ/

Initial

/čək-pə/   'robber'   /ǰək-pə/   'to be
[čək-pa] ~   [ǰək-pa] ~   impressed'
[čɛk-pa]   [ǰɛk-pa]

/ču/   'ten'   /ǰu/   'greeting'
[ču]   [ǰu]

/čuk/   '(to) let, allow'   /ǰuk/   'edge, end,
[čukˀ]   [ǰukˀ]   border, last
                                                thing'

/čə/   'tea'   /ǰə/   'a small
[ča]   [ǰɛ]   rainbow'

(iii)   /č/   :   /š/

Initial

/čə/   'tea'   /šə/   'meat'
[ča]   [šɛ]

/čən/   'possessive 'suffix'   /šən-pə/   'butcher'
[-čən] ~ [-čen]   [šən-pa] ~
                                   [šɛn-pa]

/čət-/   '(to) cut'   /šət-/   '(to) say'
[čət-] ~ [čɛt-]   [šət-] ~ [ₛat-]

★

5.2 11.   /ǰ/

(i)   /ǰ/ : /ḍz/

Initial

/ǰuk/	'behind'	/ḍzuk-/	'(to) plant'
[ǰukˀ]		[ḍzuk-]	
/ǰə/	'a small rain bow'	/ḍzɐ-wo/	'friend'
[ǰa]		[ḍzə-wo] ~ [ḍzɐwo]	
/ǰər-čes/	'to cling'	/ḍzə-rə/	'lunch'
[ǰər-čɛs] ~		[ḍzə-ra] ~	
[ǰɐr-čɛs]		[ḍzɐ-ra]	
/ǰe/	'penis'	/ḍze/	'ləper'
[ǰa]		[ḍzə]	

(ii)   /ǰ/ : /ž/

Initial

/ǰə/	'a small	/žə/	'muddy land'
[ǰa]	rainbow	[ža]	
/ǰu/	'greeting'	/žʋ/	'bow'
[ǰu]		[žu]	

5.2.12   /s/

/s/ : /ṣ/

Initial

/sil-čes/	'to read'	/ṣil-čes/	'to wrap'
[sil-čɛs]		[ṣil-čɛs]	

/sə/	'earth'	/sa/	'hair'
[sa]		[ṣa]	

/səm-ba/	'thought,	/səm/	'an acquatic
[səm–ba] ~	'discussion'	[ṣəm] ~	cat, offer'
[sɐm-ba]		[ṣɐm]	

/soⱼ/	'tooth'	/so/	'anger'
[so]		[ṣo]	

/so-mə/	'new'	/ṣo-mə/	'egg of louse'
[sʟ-ma]		[ṣʟ-ma]	

/s/ : /š/

Initial

/sən-pə/	'to listen'	/šən-pə/	'butcher'
[sən-pa] ~	(honourific)	[šən-pa] ~	
[sɐn-pa]		[šɐn-pa]	

/sor/	'a kind of	/šor/	'(to) run'
[sʟr]	measurement'	[šʟr]	

/sə/	'earth'	/šə/	'meat'
[sa]		[ša]	

/sət-čes/	'to kill'	/šət-čɛs/	'to say'
[sət-čɛs] ~ [sɐt-čɛs]		[šət-čɛs] ~	
		[šɐt–cɛs]	

/s/ : /z/

Initial

/səŋs/	'incense'	/zəŋs/	'copper'
[səŋs] ~ [sɐŋs]		[zəŋs] ~ [zɐŋs]	

/sik²/   'winnowing'   /zik²/   'leopard'
[sik²]   [zik²]

/sət-čes/   'to kill'   /zət-čes/   'to be worn
[sət-čes] ~ [sɐt-čes]   [zət-čes] ~ [zɐt-čes]   out'

/səm-bə/   'thought'   /zəm-pə/   'bridge'
[səm-ba] ~ [sɐm-ba]   [zəm-pa] ~ [zɐm-pa]

/so/   'tooth'   /zo/   'shape'
[so]   [zo]

/s/ : /ž/

Initial

/sə/   'earth'   /žə/   'muddy land'
[sa]   [ža]

/so/   'tooth'   /žo/   'curd'
[so]   [zo]

/su/   'who'   /žu/   'bow'
[su]   [žu]

/sək-ces/   'collect'   /žək-čes/   'to get cracked'
[sək-čes] ~ [sɐk-čes]   [zək-čes] ~ [zɐk-čes]

5.2.13 /ṣ/

/ṣ/ : /š/

Initial

/ṣə/   'hair'   /šə/   'meat'
[ṣa]   [ša]

| /ˌsiŋ/ | 'wait' | /šiŋ/ | 'wood' |
| [ˌsiŋ] | | [šiŋ] | |

/ˌsi/	'milk a cow gives	/ši/	'dead'
[ˌsi]	soon after the	[ši]	
	birth of the calf'		

| /ˌsok/ | 'life, being' | /ši/ | 'to tear, split' |
| [ˌsʌkˀ] | | [šʌkˀ] | |

| /ˌsol/ | 'custom' | /šol/ | 'plough' |
| [ˌsʌl] | | [šʌl] | |

/ˌs/ : /z/

Initial

/ˌsən–mə/	'peas'	/žən-mə/	'other'
[sən·ma] ~		[žən–ma] ~	
[ˌsɛn–ma]		[žɛn–ma]	

| /ˌso/ | 'anger' | /žo | 'curd' |
| [so] | | [žo] | |

/ˌsi/	'milk a cow	/ži/	'four'
[ˌsi]	gives soon after	[ži]	
	the birth of calf'		

| /ˌsəps/ | 'bridle' | /žəps/ | 'foot |
| [ˌsəps] ~ [sɛps] | | [žəps] ~ [žɛps] | (honourofic)' |

/ˌsiŋ/	'(to) wait, to	/žiŋ/	'field'
[ˌsiŋ]	give by stretching	[žiŋ]	
	the hand'		

/s̤/ : /z/

Initial

/s̤ə/	'hair'	/zə/	'(to) eat'
[s̤a]		[za]	
/s̤o/	'anger'	/zo/	'shape'
[s̤o]		[zo]	
/s̤uk/	'(to) shake, stir'	/zuk/	'(to) pierce'
[s̤uk˃]		[zuk˃]	
/s̤əs/	'prince'	/zəs/	'food, materi-
[s̤əs] ∼ [s̤ɐs]		[zəs] ∼ [zɐs]	rials articles'

5.2 14 /z/

/z/ : /ž/

Initial

/zə/	'(to) eat'	/žə/	'muddy land'
[za]		[ža]	
/zər/	'Wooden fork	/žə–rə/	'blind'
[zər] ∼ [zɐr]	like thing to fly	[zə–ra] ∼ [žɐ–ra]	
	the fodder to		
	separate the husk		
	and grain'		
/zik/	'leopard'	/žik/	'indefinite'
[zik˃]		[žik˃]	article'
/zi/	'a kind of	/ži/	'four'
[zi]	ornament worn	[ži]	
	around the neck'		

| /zuks/ | 'shape' | /žuks/ | 'sit (hon.)' |
| [zuks] | | [žuks] | |

5.2.15 /h/

/h/ : /s/

Initial

/həm-pa/	'greed'	/səm-bə/	'thought'
[həm-pa] ~ [hem-pa]		[səm-ba] ~ [sem-ba]	
/hə/	'affirmative	/sə/	'earth'
[ha]	interjection'	[sa]	
/hor/	'people from	/sor/	'a kind of
[hʌr]	Yarkand'	[sʌr]	measurement'

5.2.16 /r/

/r/ : /l/

Initial

/ro/	'dead body'	/lo/	'year'
[ro]		[lo]	
/ri/	'hill'	/li/	'brass'
[ri]		li	
/rəs/	'cloth'	/ləs/	'work'
[rəs] ~ [res]		[les] ~ [les]	
/rə/	'goat'	/lə/	'pass'
[ra]		[la]	

/rəm-pə/   'root of grass'   /ləm-pə/   'road builder,
[rəm-pa] ∼   [ləm-pa] ∼   traveller'
[rɐm-pa]   [lɐm-pa]

Final

/mər/   'butter'   /məl/   'impression'
[mər] ∼ [mɐr]   [məl] ∼ [mɐl]

/khər/   'palace'   /khəl/   'spin'
[khər] ∼ [khɐr]   [khel] ∼ [khɐl]

                                       /khəl-mə/   'kidney'
                                       [khəl-ma] ∼ [khɐl-ma]

/šər/   'east'   /šəl/   '(to) rinse'
[šər] ∼ [šɐr]   [šəl] ∼ [šɐl]

5.2.17   /l/

/l/ : /ɬ/

/lək-pə/   'hand'   /ɬək-pə/   'Wednesday'
[lək-pa] ∼   [ɬək-pa] ∼
[lɐk-pa]   [ɬək-pa]

/lə/   'pass'   /ɬə/   'goad'
[la]   [ɬɐ]

/luŋ-pə/   'stream'   /ɬuŋs-po/   'air'
[luŋ-pa]   [ɬuŋs-po]

/-le/   'honorofic suffix'   /ɬe/   'Leh, name of
[-le]   [ɬe]   the district
                                                  headquarter'

/lukˀ/	'sheep'	/ɬukˀ/	'pour'
[lukˀ]		[ɬukˀ]	

5.2.18.   /m/

/m/ : /n/

Initial

/mə/	'mother'	/nə/	'oath'
[ma]		[na]	

/məŋ-po/	'many'	/nəŋ/	'inside of a
[məŋ-po] ~		[nəŋ] ~ [nəŋ]	house, room'
[mᵉŋ-po]			

/mok-mok/	'a ladakhi meat	/nok-nok/	'smeared,
[mʌk-mʌkˀ]	samosa'	[nʌk-nokˀ]	

/mək-pə/	'husband'	/nək-po/	'black'
[mək-pa] ~		[nək-po] ~	
[mᵉk-pa]		[nᵉk-po]	

/m/ : /n/

Final

/phəm/	'(to) be defeated'	/phən/	'(to) be
[phəm] ~ [phᵉm]		[phən] ~ [phᵉn]	profitable'

/səm-čes/	'(to) think'	/sən-čɛs/	'(to) hear
[səm-čɛs] ~		[sən-čɛs] ~	(hon.)'
[sᵉm-čɛs]		[sᵉn-čɛs]	

/ləm/	'path or road'	/lən/	'answer'
[ləm] ~ [lᵉm]		[lən] ~ [lᵉn]	

/tʂəm'/   'how much'   /tʂən/   'a kind of
[tʂəm] ~ [tʂɛm]   [tʂən] ~ [tʂɛn] demon'

/m/ : /ñ/

Initial

/mə/   'mother'   /ñə/   'fish'
[ma]   [ña]

/-mo/   'feminine suffix' /ño/   '(to) buy'
[-mo]   [ño]

/mi/   'man'   /ñi-/   'sun'
[mi]   [ñi-]

/mu-tikˀ/   'pearl'   /ñu-ti/   'pear'
[mu-tikˀ]   [ñu-ti]

/men/   'no'   /ñen/   'relative'
[mɛn]   [ñɛn]

/m/ : /ŋ/

Initial

/mə/   'mother'   /ŋə/   'I'
[ma]   [ŋe]

/-mo/   'feminine suffix' /ŋo/   'face'
[-mo]   [ŋo]

/mər/   'butter'   /ŋər/   'sweet'
[mər] ~ [mɐr]   [ŋər] ~ [ŋɐr]

Final

/sum/	'three',	[sum]	
/suŋ/	'(to) say (hon.)',	[suŋ]	
/phǎm-čes/	'defeated',	[phǎm-čɛs]~[phəm-čɛs]	'to throw'
/phǎŋ-čes/		[phǎŋ-čɛs]~[phəŋ-čɛs]	
/tam/	'conversation',	[tam]~[təm]	
/teŋ/	'(to) give',	[teŋ]~[təŋ]	
/dam/	'mud',	[dam]~[dəm]	
/daŋ/	'and',	[daŋ]~[dəŋ]	yesterday'

5.2.19 /n/

/n/ : /ñ/

Initial

/nā/	'oath',	[nā]	
/ñā/	'fish',	[ñā]	
/no/	'younger brother',	[no]	
/ño/	'(to) buy',	[ño]	
/nāl/	'(to) sleep (hon.)',	[nāl]~[nal]	
/ñāl/	'(to) sleep',	[ñāl]~[ñal]	
/nam/	'sky',	[nam]~[nəm]	
/ñam-po/	'with',	[ñam-po]~[ñəm-po]	

/n/ : /ŋ/

Initial

/nət/   'sickness'   /ŋət/   'suffix
[nət] ~ [nɐt]   [ŋət] ~ [ŋɐt]   meaning
                                                   very strong,
                                                   sharp etc.'

/no/   'younger'   /ŋo/   'face'
[no]   brother'   [ŋo]

/nəl/   '(to) sleep' (hon.) /ŋəl/   'tiredness'
[nəl] ~ [nɐl]   [ŋəl] ~ [ŋɐl]

/nən-čes/   'to press'   /ŋəŋ/   'bad'
[nən-čEs] ~   [ŋən] ~ [ŋɐl]
[nɐn-čEs]

Final

/phən-po/   'profit'   /phəŋ-čEs/   'to throw'
[phən-po] ~   [phəŋ-čEs] ~
[phɐn-po]   [phɐŋ-čEs]

/riŋ/   'price'   /riŋ/   'length
[riŋ]   [riŋ]

/phin/   'a kind of food,   /phin/   '(to) take out'
[phin]   made out of peas'   [phin]

/čən/   'possessive   /čəŋ/   'north'
[čən] ~ [čɐn] suffix'   [čəŋ] ~ [čɐŋ]

5.2.21 /n/

/ñ/ : /ŋ/

Initial

|/ñə/|'fish'|/ŋə/|'I'|
|[ña]||[ŋa]||

/ño/ '(to) buy' /ŋo/ 'face'
[ño] [ŋo]

/ñə-rə/ '(to) care' /ŋə-ra/ 'cold air'
[ñə-ra] ~ [ŋə-ra] ~
[ñɐ-ra] [ŋɐ-ra]

/ñən/ '(to) hear' /ŋən/ 'bad'
[ñən] ~ [ñɐn] [ŋən] ~ [ŋɐn]

5.2.20. /w/

/y/ : /w/

Intial

/yəŋ/ 'then' /wəŋ/ 'power'
[yəŋ] ~ [yɐŋ] [wəŋ] ~ [wɐŋ]

/yə/ 'single' /wə/ 'fox'
[ya] [wa]

/yə-to/ 'companion' /wə-to/ 'a long
[yə-to] ~ [wə-to] ~ bamboo, used
[yɐ-to] [wɐ-to] for storing
water'

/y/ : /ž/

Initial

/yəŋ/   'and'   /žəŋ/   'width'
[yəŋ] ~ [yᵉŋ]   [žəŋ] ~ [žᵉŋ]

/yik/   'script'   /žik/   'one'
[yik˃]   [žik˃]

/yo/   'cleverness'   /žo/   'curd'
[yo]   [žo]

/yu/   'turquoise'   /žu/   'bow'
[yu]   [žu]

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ERRATA

Page	Line	For	Read
9	1	s	š
16	25	d) /ə/	d) /e/
19	6	s̯t	t̯s
23	13	[ʌs-mol]	[ʌs-mʌl]
25	15	š, z, h	š, ž, h
26	14	[lek-šup]	[lək⁻-šup]
30	15	[čhu-d̄oŋ]	[čhu-d̄ʌŋ]
38	19	/ṣ/ [s]	/ṣ̌/ [ṣ̌]
39	17	/z/ [z]	/ž/ [ž]
40	8	[h-ᵉgo]	[hᵉ-go]
48	12	/rts̯el-pa/	/r t̯s əl-pə/
48	14	/rtiŋ-pa/	/rtiŋ-pə/
48	21	[ld̄-ən-pa]	[ld̄-ən-pa] 'possessive'
48	22	/ldən-pa/	/ldən-pə/
49	1	[lǰŋə-khu]	[lǰəŋ-khu]
51	6	/sṇə-wa/	/sṇə-wə/
51	15	[kyəŋ]	[kyəŋ] 'boundary wall

Page	*Line*	*For*	*Read*
54	11	[ɖi–e–dzəts]	[ɖi–ə–dz̮əts]
57	1	/ək–mət– sum–čʾu/	/kə–mət-sum- čʾu/
57	10	ན་རོ།	ན་རོ།
58	2	ཚག་ /t̬sh-ək/ or ཚེག་ ཚག་ད།	ཚག་ /t̬sh ək/ or ཚོག་ /t̬shok/ or ཚག་ད། /t̬shəg-di/
61	9	məd	mədə
165	17	/zu/	/žu/
165	18	[zu]	[žu]
172	10	[pər] ~ [pər]	[pər] ~ [pᵉr]
172	12	[pəŋ] ~ [pəŋ]	[pəŋ] – [pᵉŋ]
173	6	/rub/	/rup/
173	7	[rub]	[rup]
174	13	[pəŋ] ~ [dᵉŋ]	[dəŋ] ~ [dᵉŋ]
176	11	[thəm] ~ [thəm]	[thəm] ~ [thᵉm]
187	20	[sᵉn-pa]	[šᵉn-pa]
188	11	[ǰa]	[ǰe]

188	11	[dẓə]	[dẓ e]
196	18	[ŋe]	[ŋa]
198	9	/ŋəŋ/ 'bad'	/ŋən/ 'bad'
198	10	[ŋəŋ] ‿ [ŋɐl]	[ŋən] ‿ [ŋɐn]
198	17	/phin/ '(to) take out'	/phiŋ' '(to) take out'
198	18	[phin]	[phiŋ]

Note :   The Errata have been minimised by excluding general errors.